



Clean Catch
Joint Action on Sensitive Species Bvcatch

CLEAN CATCH NATIONAL ADVISORY BOARD MEETING

Online | 24 June 2025



Department
for Environment
Food & Rural Affairs



Centre for Environment
Fisheries & Aquaculture
Science

ARRIBADA
 *initiative*

ZSL
Institute
of Zoology


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WELCOME & INTRODUCTIONS



Vicki Castro-Spokes
Defra, NAB Chair



Agenda

- 10.00: Welcome and introductions
- 10.10: Defra policy updates and seabird bycatch plans
- 10.30: MMO Stage 4 MPA – Fishing impacts in English harbour porpoise MPAs
- 11.15 – 11.30: Break
- 11.30: Pinger trial
- 12.00: EEFPPO North Sea Whitefish Fishery Trial
- 12.30: Best Practice Guides
- 12.50: AOB and Closing remarks





Defra domestic bycatch policy



Brigid Finlayson
Defra

Defra domestic bycatch policy

» Policy landscape

- Bycatch in English waters, collaborate with Devolved Governments where relevant.
- Current evidence projects across taxa continuing (BMP, i360, RBRPF, CSIP).
- Resource constraints – focus on action plan for seabirds this year: multiple policy drivers.

» Bycatch Mitigation Initiative (BMI) – for context

- Outlines how the UK will achieve its ambitions to reduce the bycatch of sensitive marine species through 5 overarching objectives with lists of actions e.g. monitoring, hotspots, mitigation incentives, international.

» Regional Bycatch risk prioritisation framework – comprehensive

13 work packages to be reviewed by expert group Nov 2025 and publication March 2026.

- Will provide detailed outputs layering cross taxa species distribution data with, fishing effort, gear type, bycatch records and known mitigation methods. This will allow for strategic policy development and decision making.



Seabird bycatch working group

» Aware that seabird populations are in decline and there are many policy drivers requiring focus e.g. BMI, English Seabird Conservation and Recovery Pathway, OSPAR regional seabird bycatch action plan, FMPs, offshore wind etc.

» Existing evidence and data base for seabirds including ESCaRP (NE), Seabird Plan of Action (ME6024, JNCC), recent report on seabird bycatch mitigation by Defra fellow.

Primary aim:
Develop a seabird bycatch mitigation implementation plan for English waters

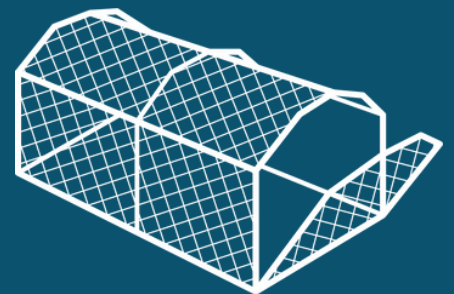
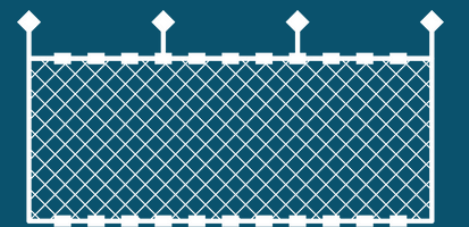
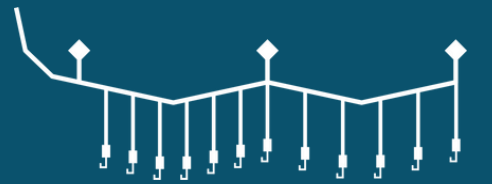
Membership: Defra and ALBs, SNCBs, species experts, industry, tech, academics

Outcomes of first meeting:

1. Define the issue
2. How? – data, mitigation, dependencies
3. Workstreams and timelines
4. Next steps/meetings TBC



First meeting of the WG was 23/06/25





QUESTIONS, ANSWERS & COMMENTS — reflections on seabird working group



Thank You.

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MMO STAGE 4 MPA – Fishing impacts in English harbour porpoise MPAs



Elidh Siegal, Charlie Wiseman,
and Ellie Falconer, MMO



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Stage 4 MPAs

Harbour porpoise bycatch

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Assessing and managing commercial fishing in MPAs

STAGE 1

This stage assessed the impacts of fishing in four MPAs with offshore elements, for which management measures are now in force

STAGE 2

This stage assessed and addressed the impacts of bottom towed gear on rock and reef features in 13 MPAs

STAGE 3

This stage is assessing and addressing the remaining impacts of fishing on all seabed MPA features and includes 43 sites in total

STAGE 4

This stage is assessing and addressing five MPAs designated for highly mobile species (marine birds and harbour porpoise)

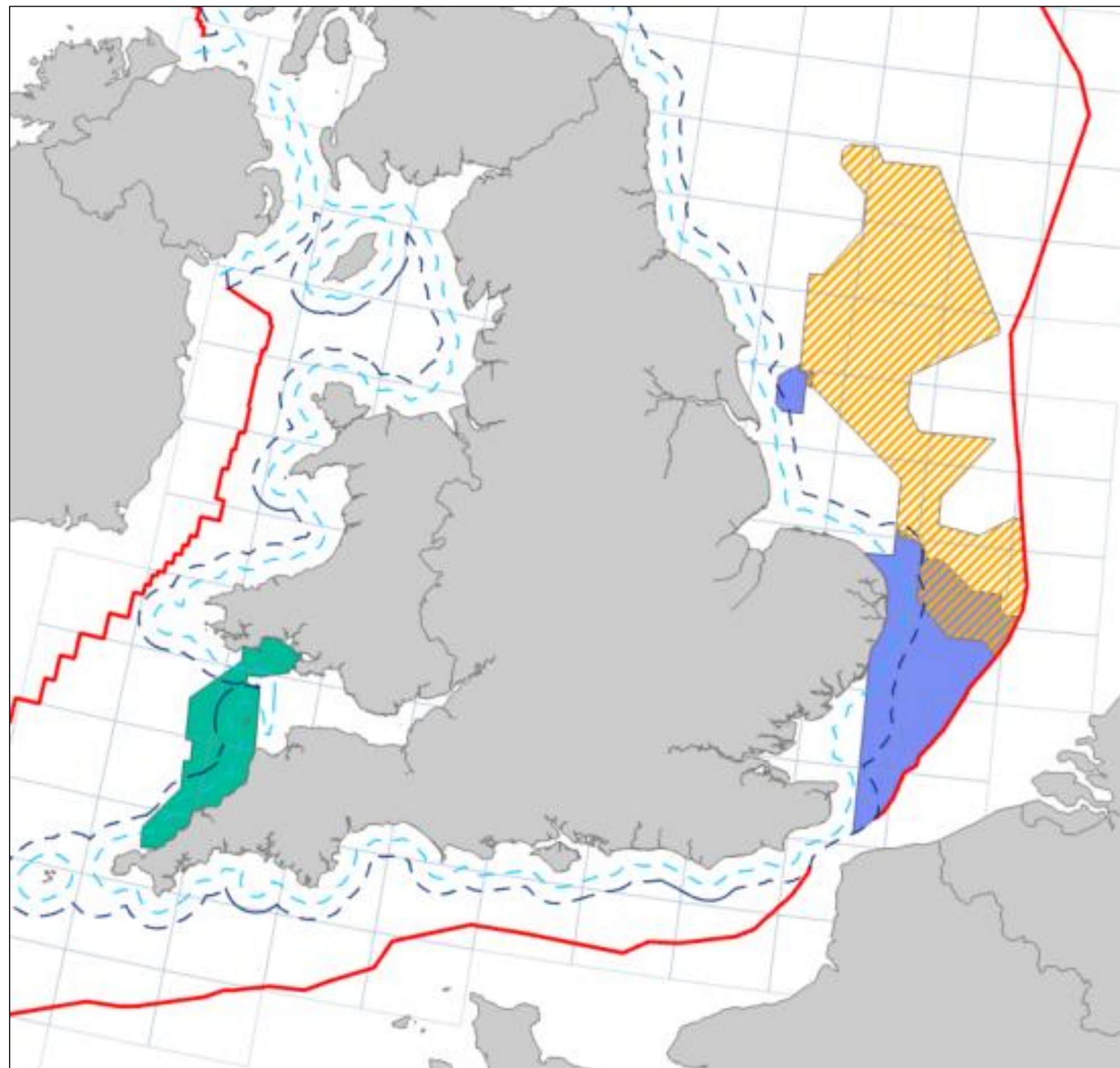
Location of the Stage 4 Harbour Porpoise MPAs

Harbour porpoise MPAs we are assessing fishing impacts for:

Bristol Channel Approaches MPA

Southern North Sea MPA

-  Southern North Sea MPA - winter area
-  Southern North Sea MPA - summer area
-  Bristol Channel Approaches MPA - winter area
-  6 Nautical Mile Limit
-  UK Territorial Sea Limits
-  UK Exclusive Economic Zone



How MMO are assessing fishing impacts

1. Call for evidence

Sought evidence on impacts evidence documents (literature reviews on fishing impacts), important pressures and potential management options



What have we done since the call for evidence?

Updated the impacts evidence document

Drafted a response document

Included evidence in draft site assessments

Included evidence in a draft 'potential management options' document



2. Drafting site assessments – in progress

Determine if fishing is / isn't having adverse effects and therefore if management is / isn't needed.

Assessing porpoise bycatch using Management Units

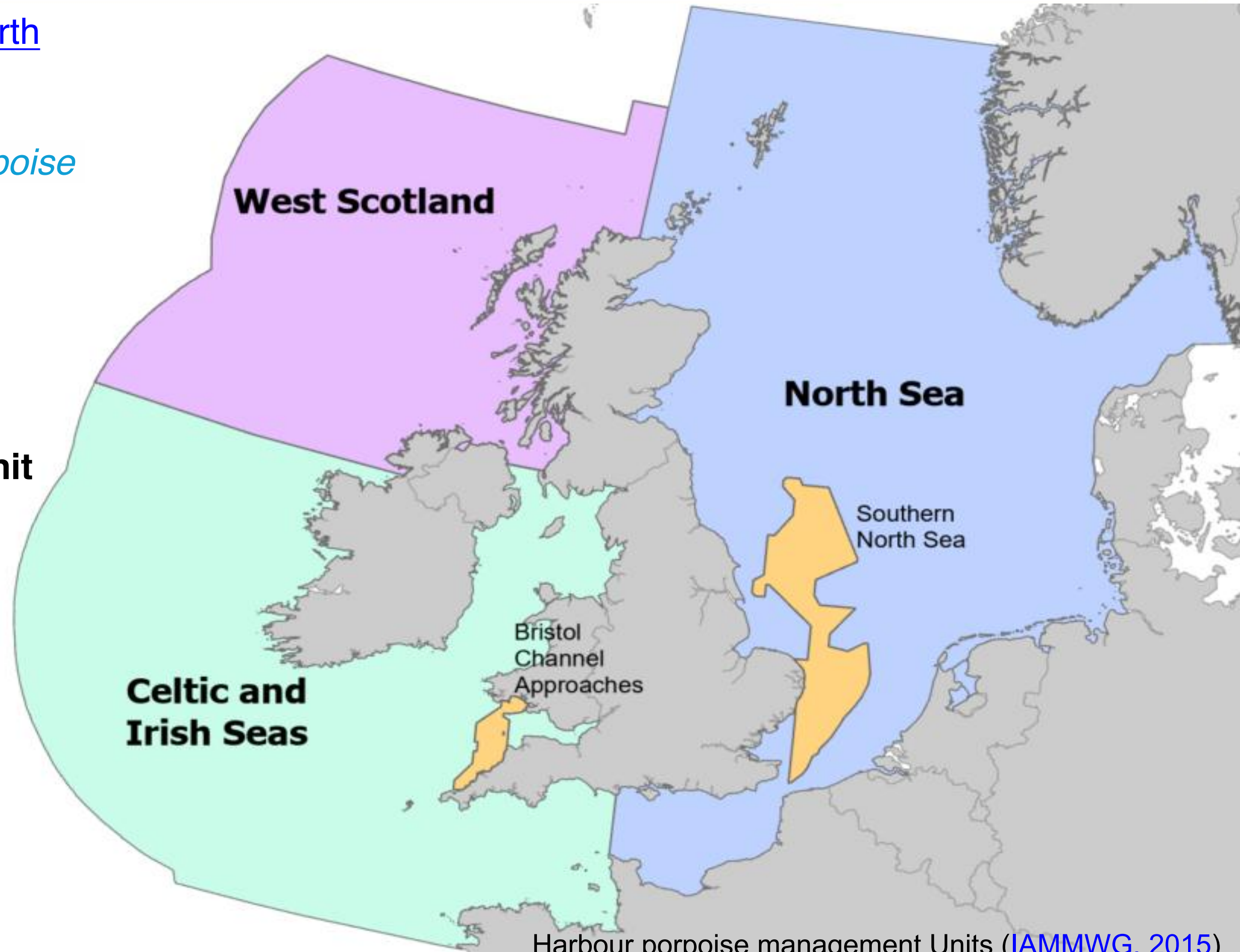
Conservation advice for the [Southern North Sea](#) and [Bristol Channel Approaches](#):

Conservation objective 1: Harbour porpoise is a viable component of the site

Harbour porpoise are highly mobile

No such thing as a “site population”

Reference population = **Management Unit**



Harbour porpoise bycatch estimates for the wider seas

Porpoise bycatch in wider units ([OSPAR 2023](#) & [ICES 2021](#)):

Management /Assessment Unit	Relevant MPA	Bycatch estimate (porpoise / year)			Bycatch threshold (porpoise/ year)
		All gears	Gillnets	Bottom otter trawls	
North Sea	Southern North Sea	Upper: 5,929 (3,176 - 10739) Lower: 1,627 (922 – 3,325)	Upper: 5,806 (3,122 - 10458) Lower: 1,504 (867 – 3,044)	123 (54 - 281)	1,622
Celtic & Irish Sea	Bristol Channel Approaches	751 (290 – 2,267)	633 (238 – 1,999)	118 (52 - 268)	82



For both sites, bycatch from gillnets is over sustainable thresholds for the relevant management unit.

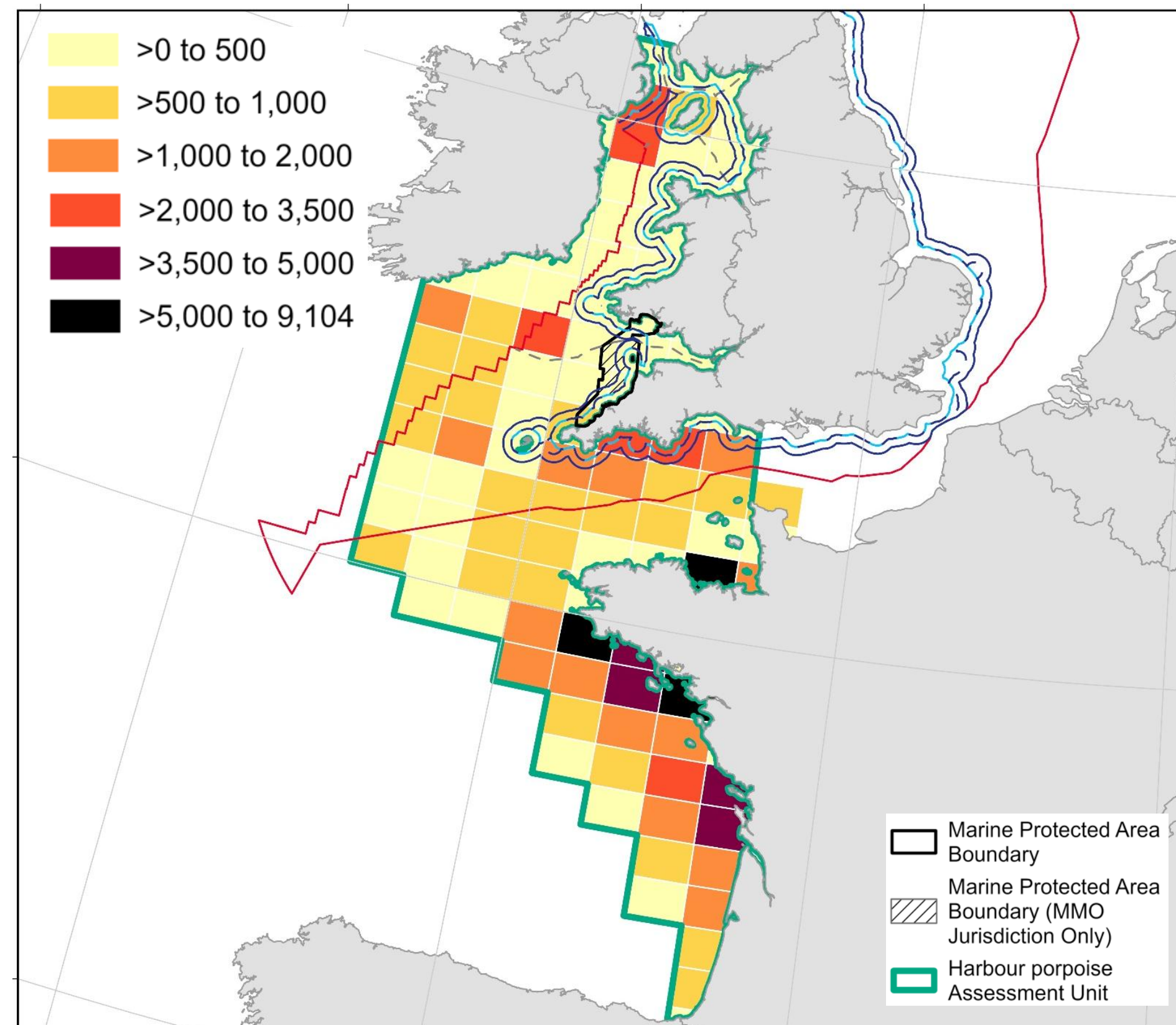
Additionally, for Bristol Channel Approaches, bycatch from bottom otter trawls is over thresholds.

Bottom otter trawls in the Celtic and Irish Seas Assessment Unit

1. Bycatch in the Assessment Unit is likely from outside of UK waters (see map)
2. Limited porpoise bycatch observed in these gears in UK waters – The UK Bycatch Annual Monitoring programme does not do dedicated sampling of bottom trawls (not high risk) but reports on non-dedicated (e.g., fishery discard) programmes: zero porpoise observed in bottom towed gears across last four years 2017-2020¹
3. Bottom trawls are classed as low risk for porpoise bycatch by experts^{2,3}
4. Most porpoise bycatch occurs in gillnets globally⁴ and in UK waters⁵. From the data available, bycatch does not occur at a large scale in other UK fisheries⁵

Increased monitoring and evidence gathering is potentially more appropriate for these gears

Average number of days by single and twin bottom otter trawls per year (2016 to 2022) per ICES statistical rectangle



¹ [Annual UK Bycatch Monitoring Programme reports](#), ² [ICES 2019](#) ³ [Brown 2013](#), ⁴ [Read et al, 2006](#), ⁵ [IAMMWG, 2015](#)

Potential options to manage bycatch

1. Time-area closures

Closure to gillnets within a particular area either year-round or for defined time period

2. Effort limitation

Limiting gillnet effort to a specific level

3. Dynamic time-area closure

Temporary closure based on a bycatch level or based on porpoise presence

6. Monitoring and reporting

Bycatch monitoring and reporting plan, for example, including self-reporting campaigns, observers on vessels and/or remote electronic monitoring

Bycatch management

4. Mandatory acoustic deterrent (ADDs) on all gillnets

A legal requirement for ADDs for all vessel sizes

5. Voluntary changes to fishing practice

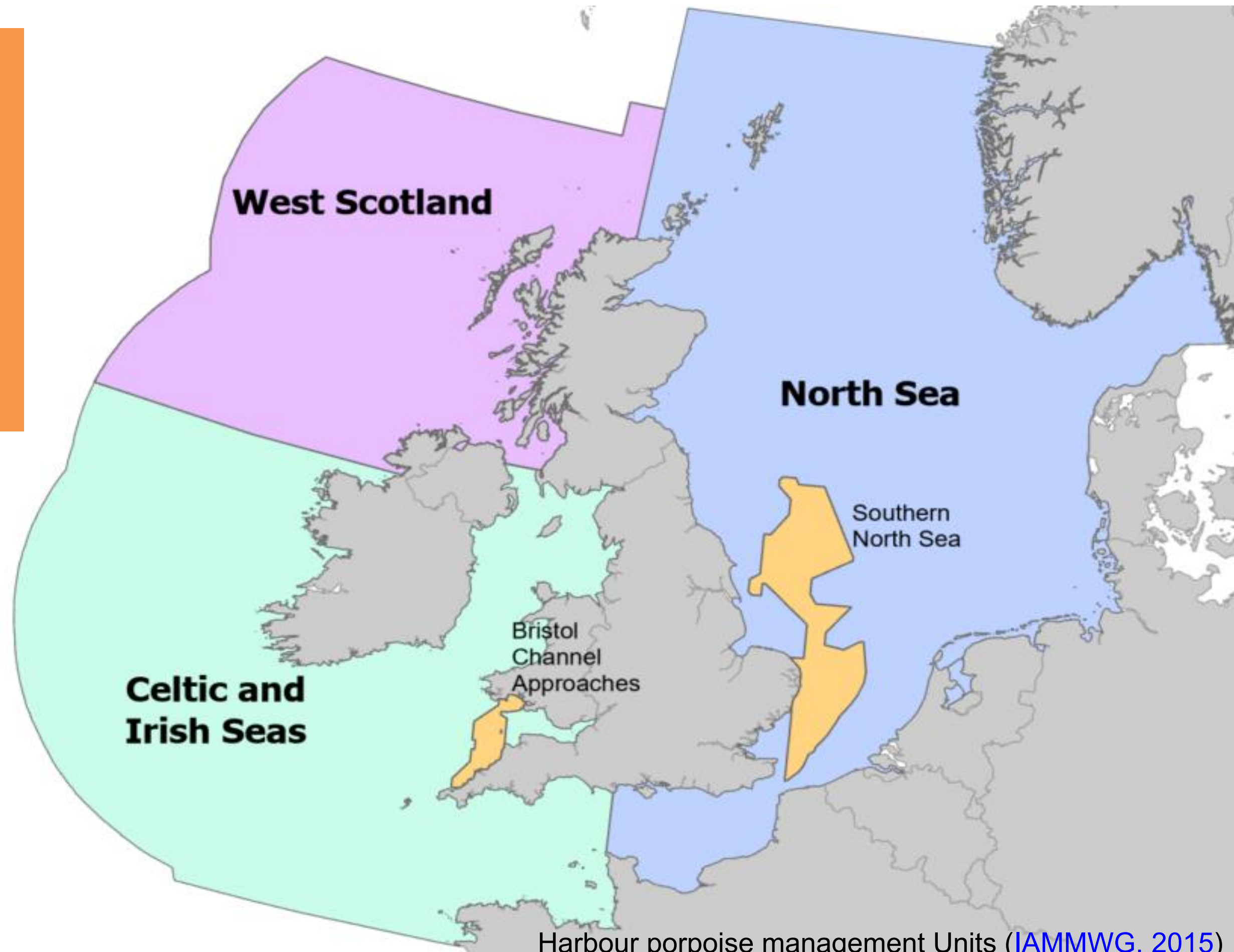
Changes to current gear/operations, gear-switching, emerging tech (passive acoustic reflectors), codes of conduct etc.

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Assessing porpoise bycatch: Management Units

As a highly mobile species with no site-based population, bycatch outside sites impacts MPA condition

Management may be required both inside and outside sites to achieve the conservation objectives



Next steps

1. Conduct engagement with relevant stakeholders

Possible management options



2. Complete MPA assessments

Develop any necessary draft management options



3. Formal consultation

Site assessments and management options for bycatch



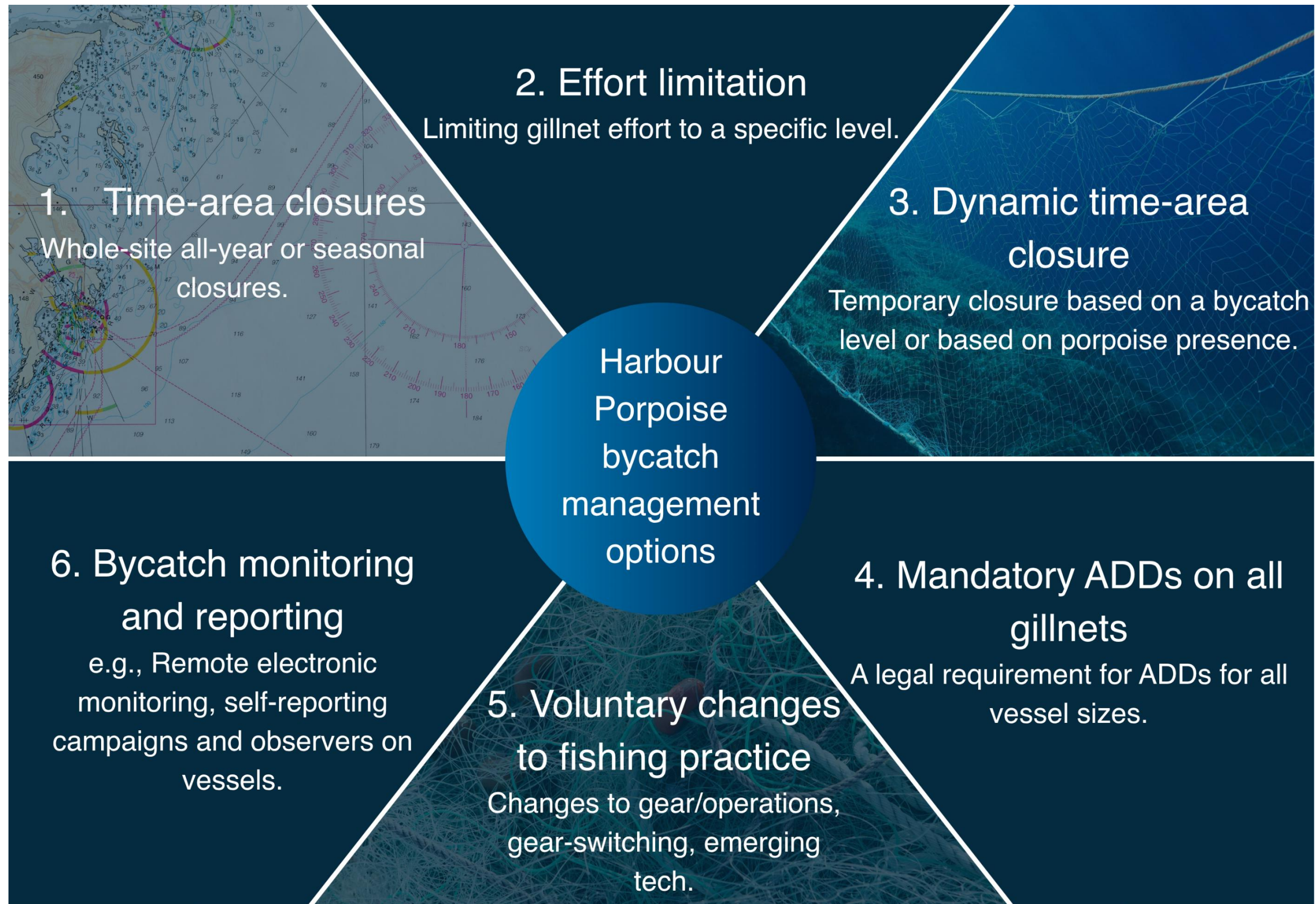
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Harbour porpoise bycatch management Options: Discussion

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Link to Zoom whiteboard will be
posted in the chat

Discussion: potential bycatch management options



Discussion: potential bycatch management options

Discussion questions

How feasible is the option to implement and manage harbour porpoise bycatch?

What are the main benefits of the option?

What are the main challenges of the option?

What are the practical implications of the option?

Are there any bycatch management options missing?

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Additional info useful for management options

Beyond evidence included in the ‘potential management options’ document, additional evidence would also be useful:

Topic	Important evidence gaps
Bycatch and fishing activity	• Bycatch hotspots – any areas and times of year with highest/lowest porpoise bycatch? • Bycatch across gillnet fisheries – any métiers with highest or lowest bycatch? • Location of gillnetting effort by vessels under 12 m in length
Thresholds	• Methods that could be used to determine a threshold or level of bycatch (above which effort limitation or dynamic time-area closures would apply)?
Acoustic deterrent devices (ADDs) aka pingers	• If ADD effectiveness for reducing porpoise bycatch varies across different métiers (e.g., anchored versus drift nets) • Efficiency of and preference for any specific device types • Gillnet net lengths and soak times typically used in MPAs by vessels of different sizes • Dinnerbell effect of gillnet ADDs on seals or dolphins
Other	• Any options missing from the management options document • Any methods/practices already undertaken that reduce porpoise bycatch

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Extra slides

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Stage 4 Marine Bird MPAs

STAGE 4

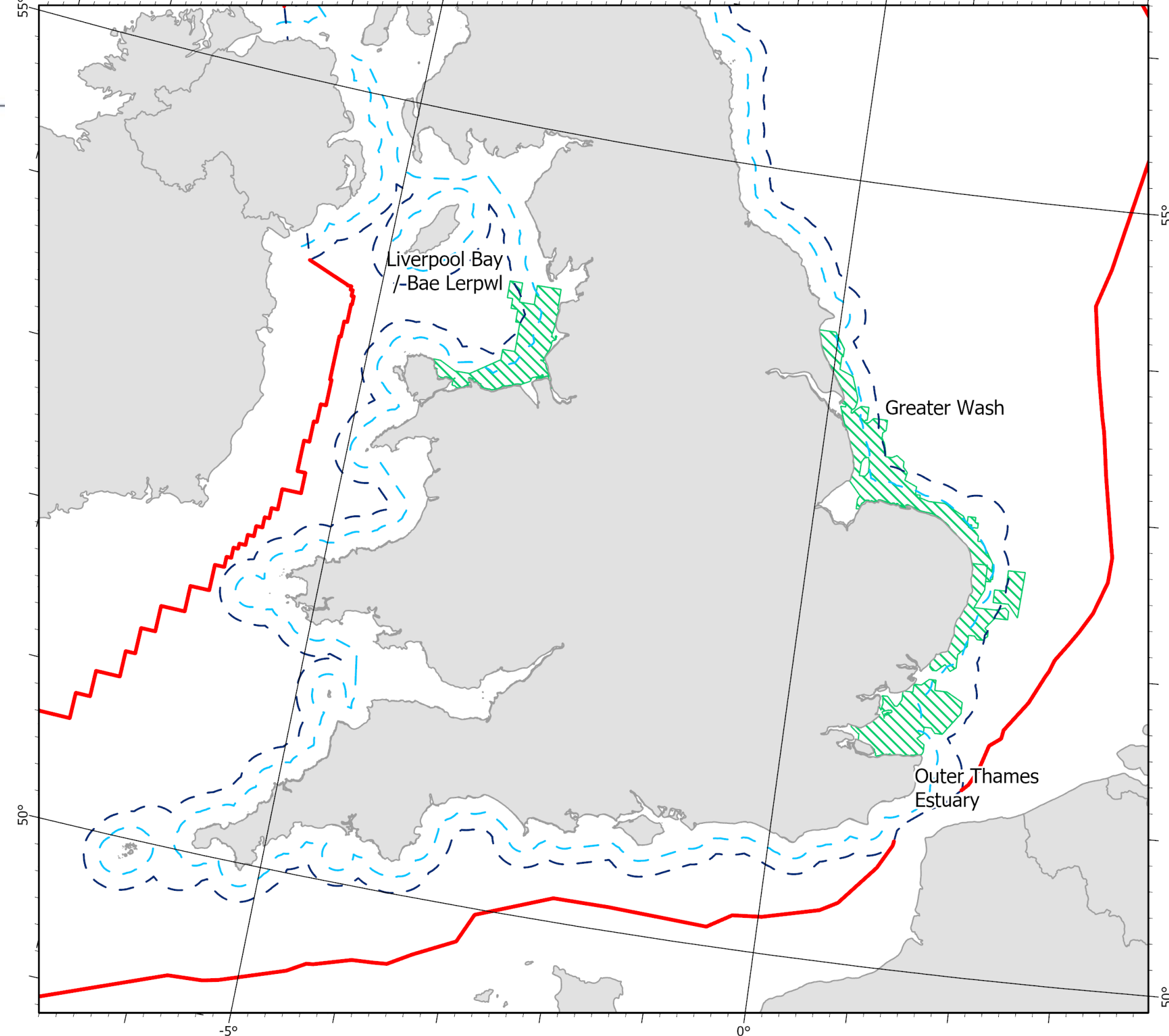
This stage is assessing and addressing five MPAs designated for highly mobile species (marine birds and harbour porpoise)

Marine bird MPAs

- Liverpool Bay MPA
- Outer Thames Estuary MPA
- Greater Wash MPA



Red-throated diver © 1186291699 Shutterstock



Admin Maritime Limits

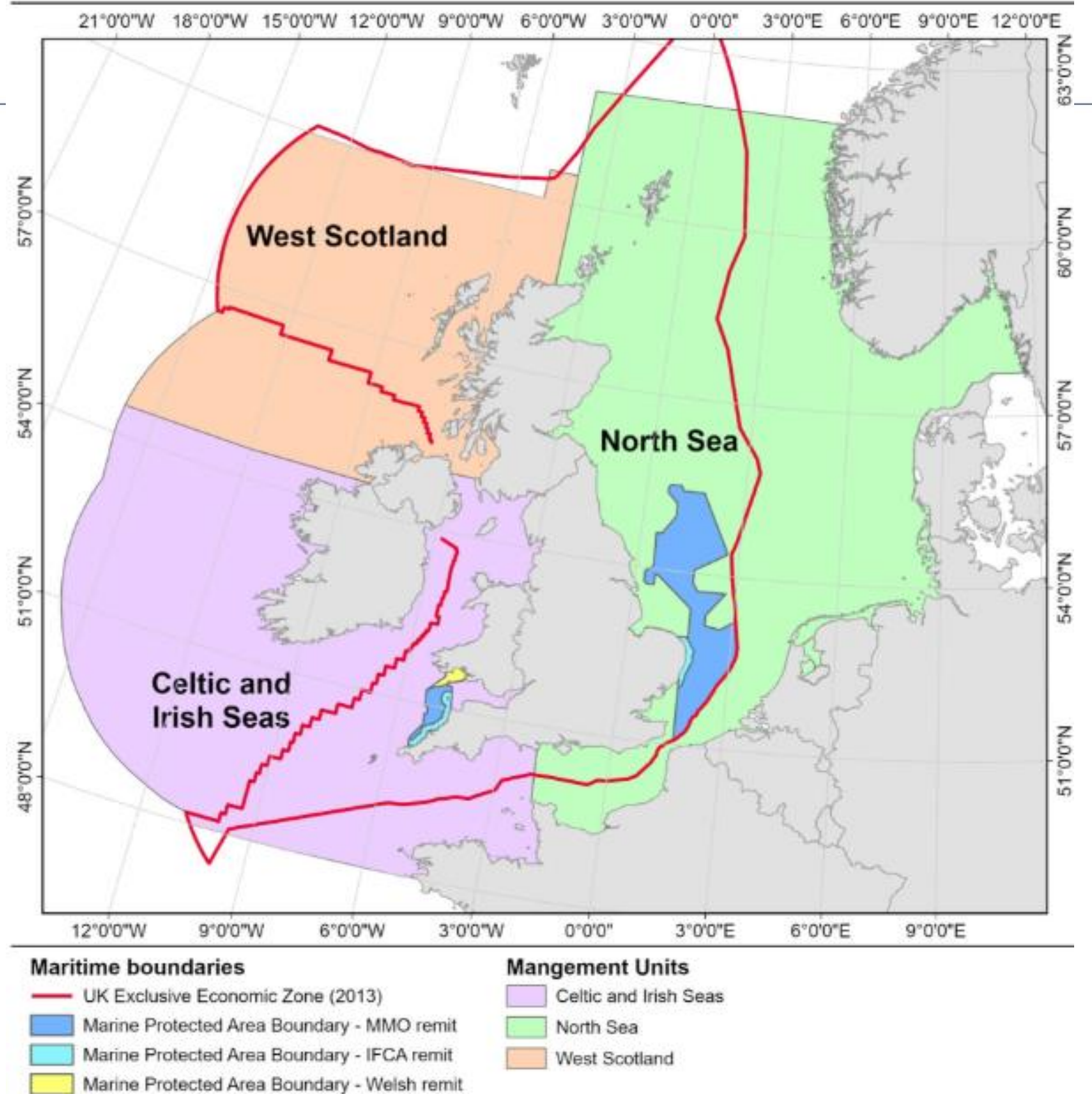
- UK Exclusive Economic Zone (2013)
- - UK Territorial Sea Limits
- ... 6 Nautical Mile Limit, 1983 baseline (UKHO)

Marine Protected Areas

- ▨ Stage 4 Marine Birds Sites



Porpoise MPA jurisdictions

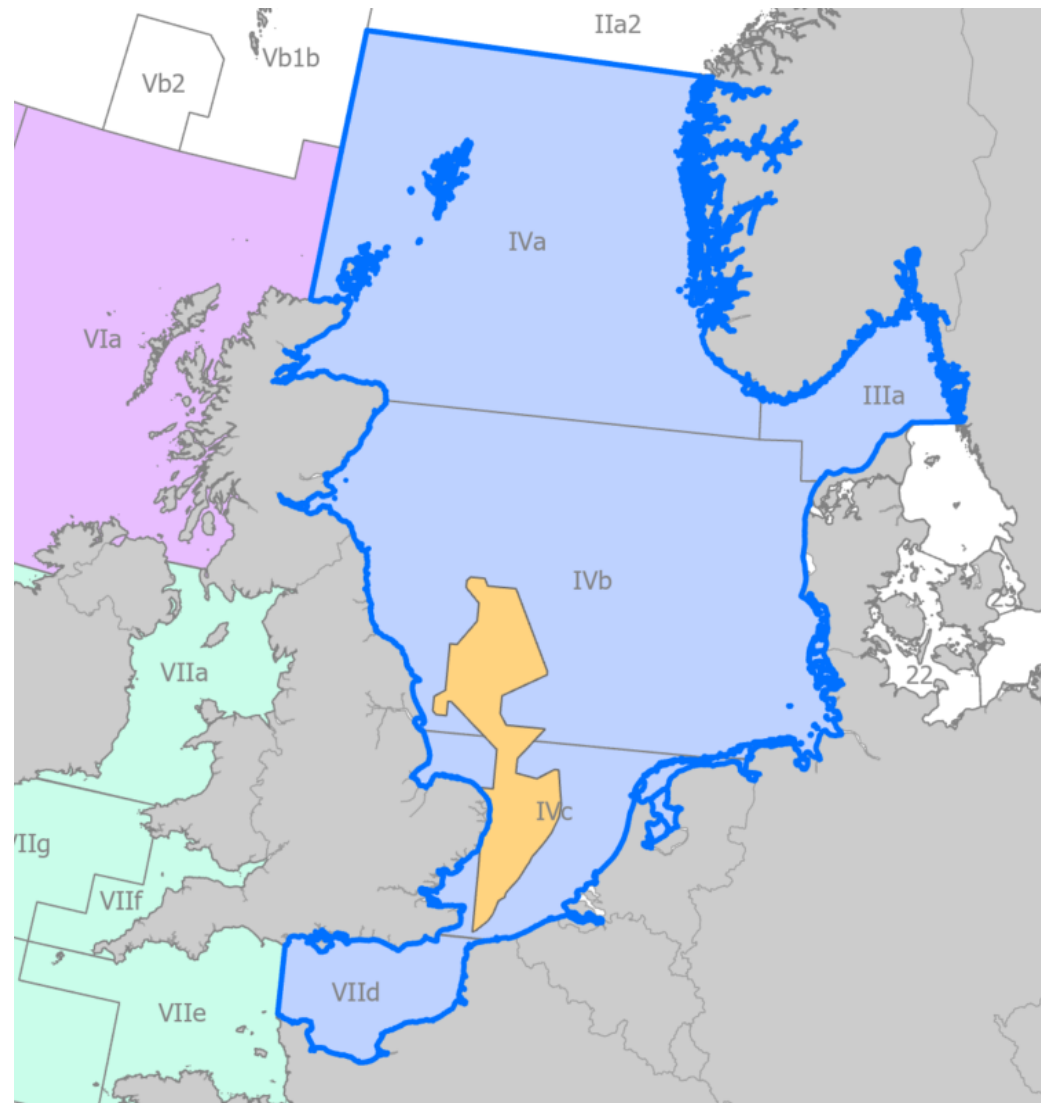


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Bycatch estimates at different scales: Southern North Sea MPA

North Sea assessment unit

[OSPAR 2023](#) and [ICES 2021](#)



5929 (3176 – 10,739) porpoise per year (all gears)
 5806 (3,122 – 10,458) porpoise per year (gillnets)
 123 (54 – 281) porpoise per year (OTT, OTB)
 3.7 x sustainable threshold
(1622 porpoise) for management unit

ICES divisions

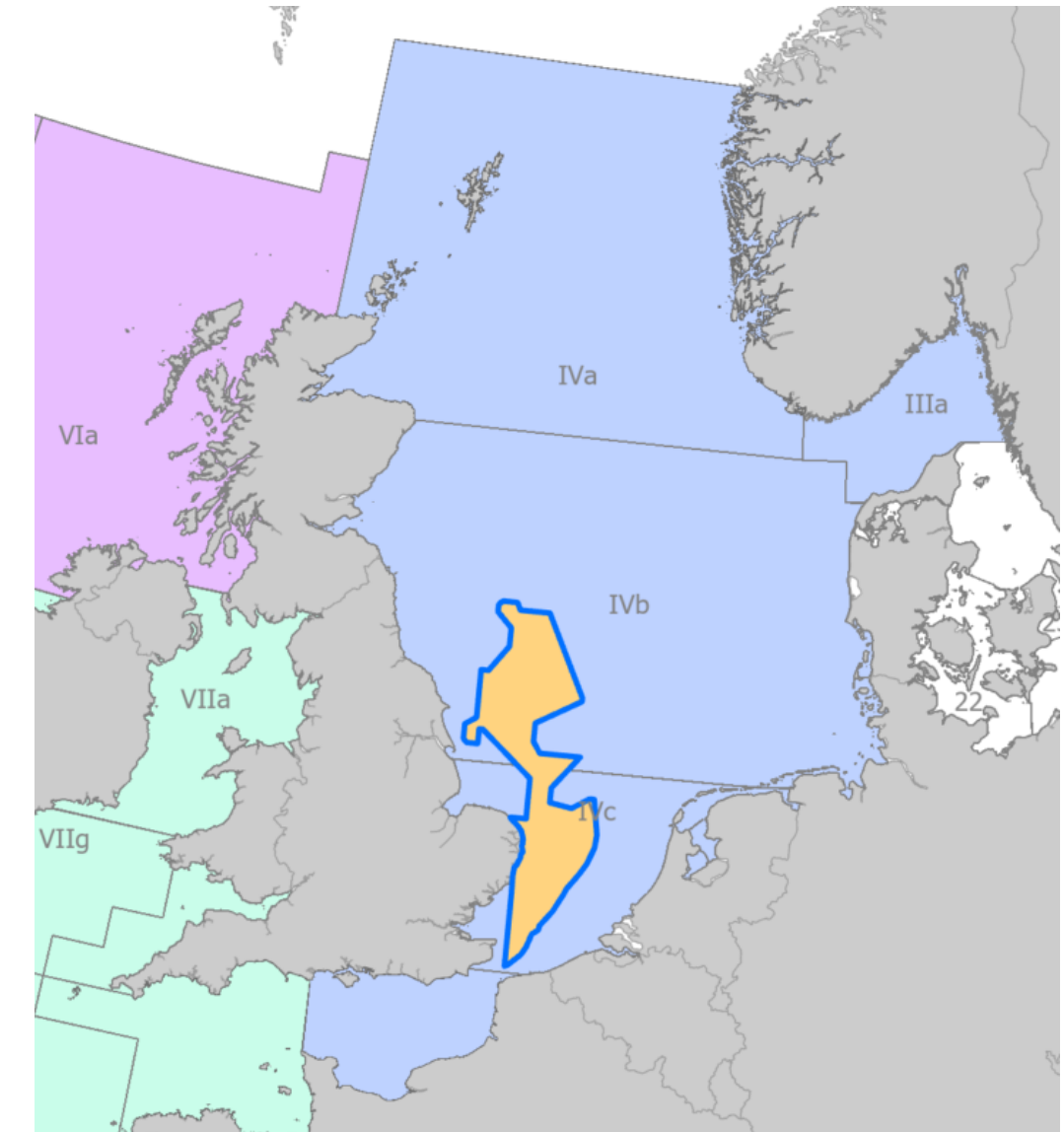
[UK Bycatch Monitoring Programme](#)



95 (68 – 140) porpoise per year
 • IVb (3 porpoise, 7% overlaps MMO MPA)
 • IVc (92 porpoise, 25% overlaps with MMO MPA)

UK gillnet vessels only; assumes full ADD compliance

Southern North Sea MPA



26 (16 – 39) porpoise per year
 • Coram & Northridge, 2018 - UK gillnets
 27 (16 – 40) porpoise per year
 • Coram & Northridge + 3% for non-UK effort
 100 (64 – 163) porpoise per year
 • [STECF FDI effort days](#) per ICES rectangle x [ICES 2021](#) bycatch rates

A map of the North Atlantic Ocean showing the distribution of 19 marine fish species. The map is divided into colored regions: purple (VIIa, VIIb, VIIc1, VIIc2, VIIk1, VIIk2, VIIj1, VIIj2), green (VIIa, VIIg, VIIh, VIIe, VIIId1, VIIId2, VIIla, VIIlb), orange (VIIf), and blue (VIId). Species are labeled with codes like XIIa1, VIIc1, VIIb2, VIa, VIIb, VIIa, VIIg, VIIf, VIIh, VIIe, VIId, VIIId1, VIIId2, VIIla, VIIlb, VIIc, IXb2, and IXa.

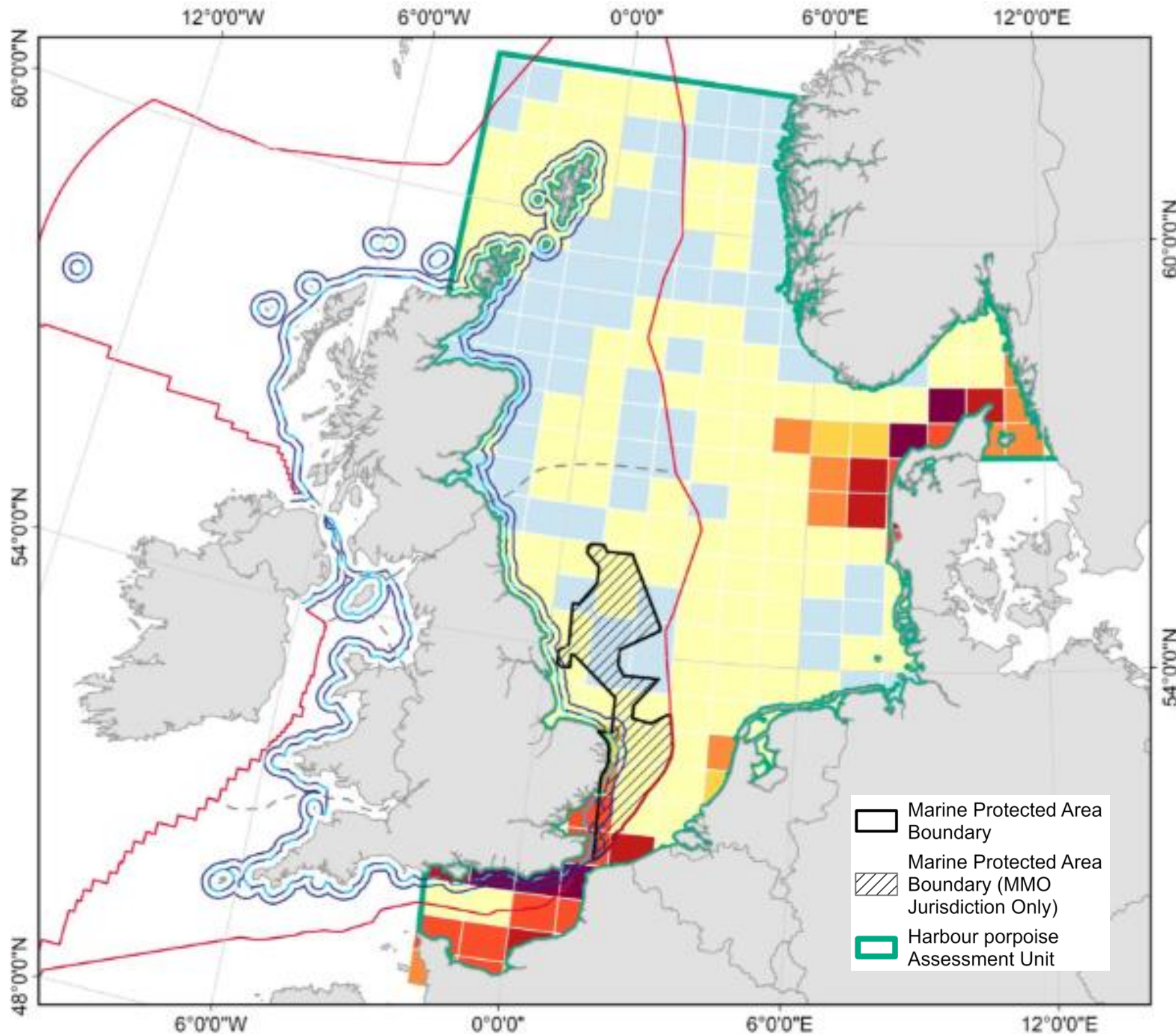
9.2 times over threshold (**82 porpoise**) for assessment unit

UK gillnet vessels only

[illegible]

- STECF FDI effort days per ICES rectangle X ICES 2021 bycatch rates

Gillnet effort across North Sea Assessment Unit



Gillnet Effort Days (annual average from 2016 to 2022)



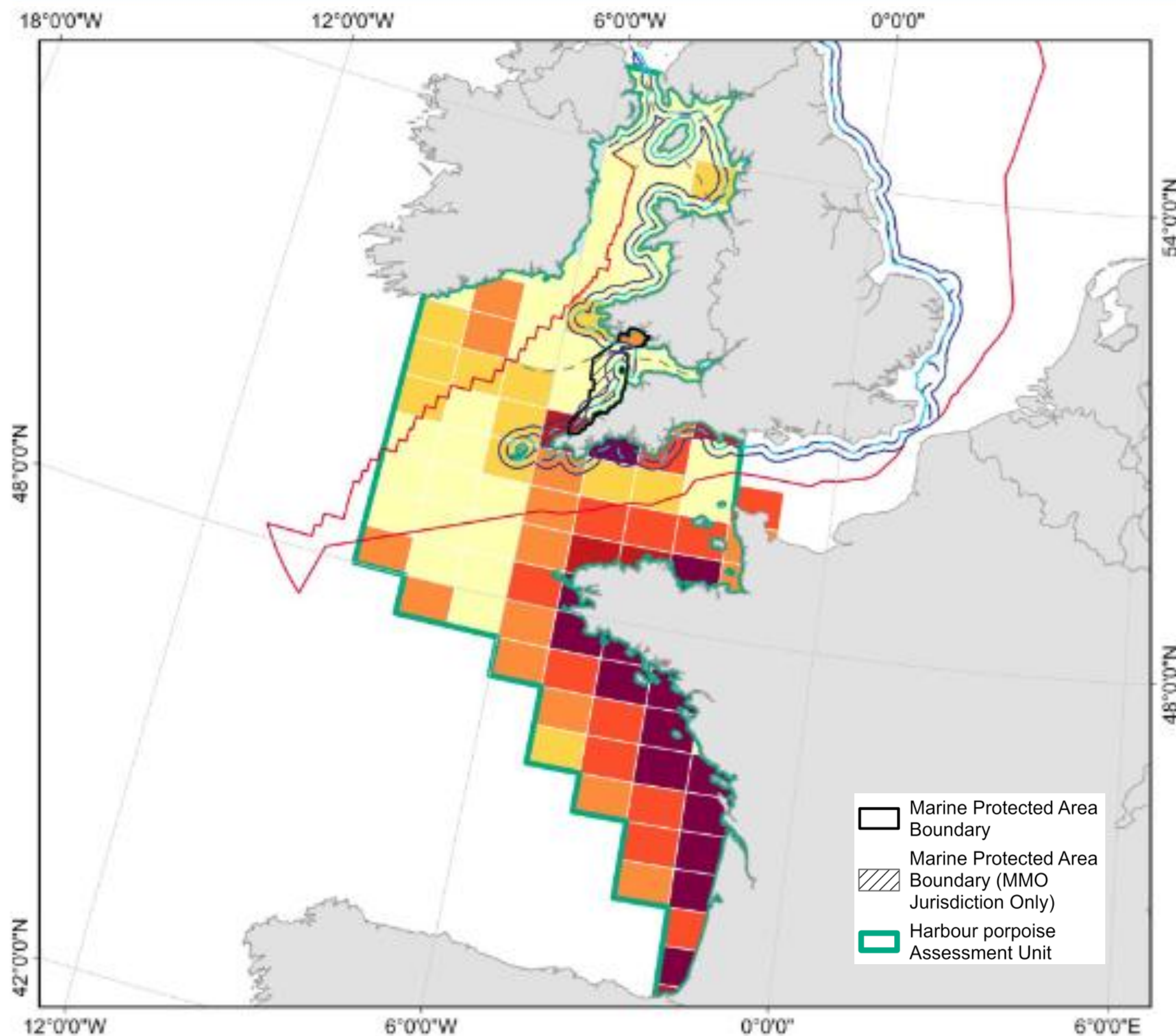
Gillnet effort in Southern North Sea / Bristol Channel Approaches*

Under 12s = 95% / 99.5%

UK vessels = 81% / 99.9%

* based on gillnet effort days in MMO remit 2016 - 2021

Gillnet effort across Celtic & Irish Seas Assessment Unit



Gillnet effort in Southern North Sea / Bristol Channel Approaches*

Under 12s = 95% / 99.5%

UK vessels = 81% / 99.9%

* based on gillnet effort days in MMO remit 2016 - 2021

UKBMP bycatch observations: non-dedicated and dedicated sampling

Source: Annual reports from the UK Bycatch Monitoring Programme for the most recent five years: [2017 – 2020](#) and [2016](#)

Table shows number of non-dedicated and dedicated sampling days and number porpoise observed as bycatch.

Note: There was no dedicated sampling for demersal trawls

Year	Non-dedicated sampling		Dedicated sampling	Reference and notes
	Gillnets	All bottom towed gears and all otter trawls*	Gillnets	
2016	79 days 0 porpoise	588 days (all BTG) 246 days (demersal otter) 0 porpoise	315 days 10 porpoise	Northridge et al 2017 205 dedicated days on < 15 m net vessels
2017	72 days 0 porpoise	466 days (all BTG) 105 days (demersal otter) 0 porpoise	217 days 5 porpoise	Northridge et al 2018 175 dedicated days on < 15 m net vessels
2018	138 days 0 porpoise	571 days (all BTG) 72 days (demersal otter) 0 porpoise	172 days 2 porpoise	Northridge et al 2019 128 dedicated days on <15 m net vessels
2019	99 days 0 porpoise	352 days (all BTG) 54 days (demersal otter) 0 porpoise	173 days 1 porpoise	Kingston et al 2021 114 dedicated days on <15 m net vessels
2020	56 days 0 porpoise	46 days (all BTG) 18 days (demersal otter) 0 porpoise	28 days 0 porpoise	Kingston et al 2023 20 dedicated days on <15 m net vessels Sampling effort impacted by COVID

*include single , twin, triple and quadrable otter trawls

Bycatch by different gillnet metiers

UK Bycatch Monitoring Programme gives bycatch estimates and bycatch rates for different gillnet metiers:

Gillnet metier	Target species	Bycatch estimate (in UK in 2020) assuming ADDs	% of bycatch (in UK in 2020)	Bycatch rate (2010 – 2018)*
Bottom drift nets	demersal species	9 (1-32)	1.3%	0.012 (0.001 – 0.043)
Surface or midwater driftnets	small pelagic species	8 (2-23)	1.1%	
Heavy twine gillnets	larger gadoids	76 (41-138)	10.8%	0.006 (0.002 – 0.011)
Heavy twine gillnets	hake	29 (9-139)	4.1%	0.046 (0.025 – 0.076)
Light twine gillnet	smaller species (red mullet, bass and whiting)	299 (154-527)	42.5%	0.013 (0.005 – 0.026)
Light twine nets	small flatfish	27 (2-115)	3.8%	0.001 (0.000 – 0.006)
Heavy twine, large mesh, tangle and trammel net	large fish (anglerfish, turbot, and shellfish)	255 (207-364)	36.3%	0.019 (0.003 – 0.014)

* Bycatch rate: porpoise per haul with no porpoises from observations 2010 – 2018 (hake 2005 – 2018)

Most bycatch comes from light twine gillnets and tangle and trammel nets

Bycatch estimates = bycatch rate (expected porpoise caught per haul) x fishing effort (number of hauls)

Higher bycatch estimate = higher bycatch rate and/or higher fishing effort?

Noise thresholds: background

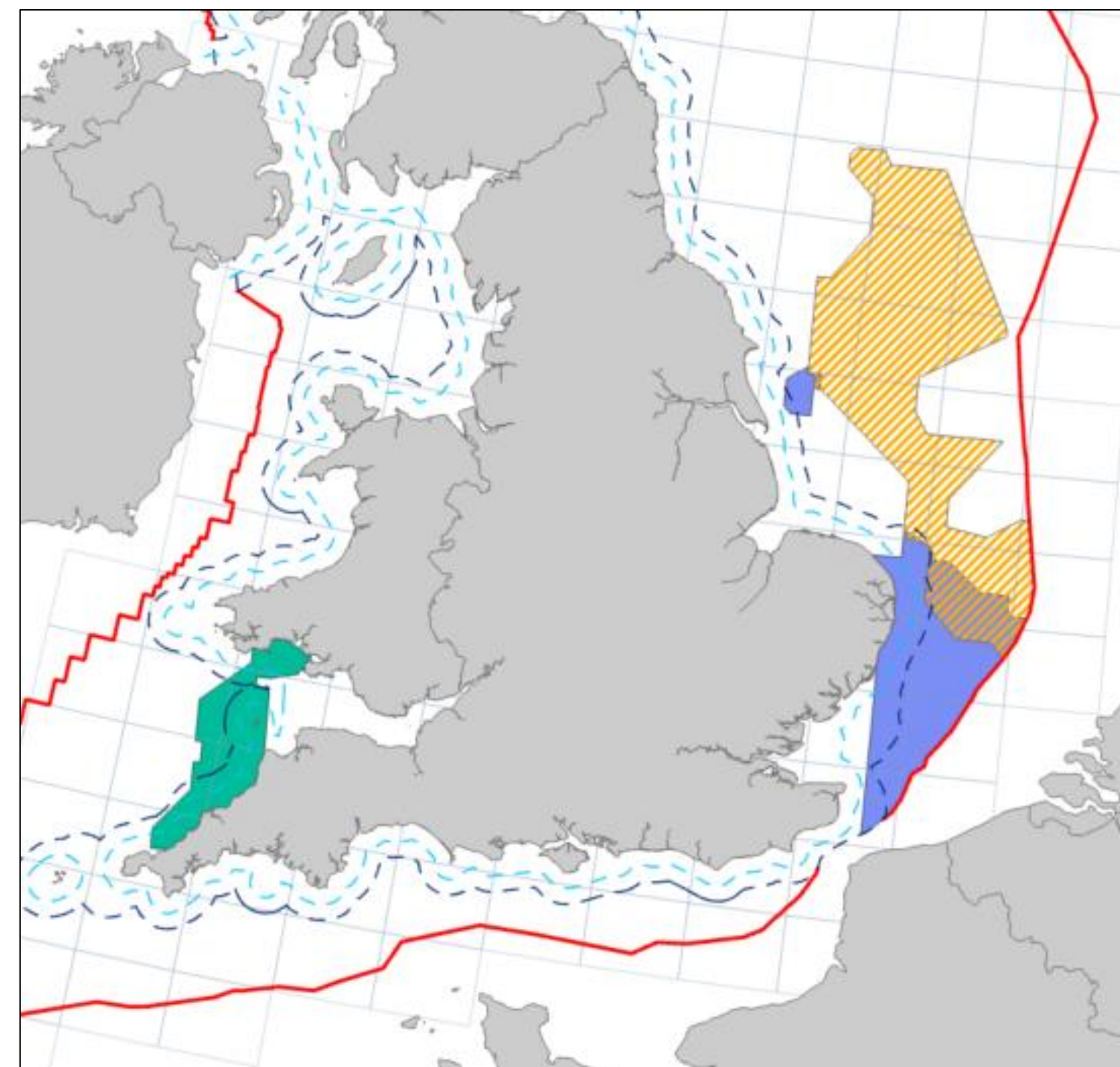
Conservation objective 2: There is no significant disturbance of the species.

Noise disturbance is significant if it excludes harbour porpoises from more than:

1. 20 % of the relevant area* of the site in any given day, and
2. an average of 10 % of the relevant area of the site over a season**

* Relevant area is the southern winter area, northwest winter area or summer area for SNS MPA, or whole-site in winter for BCA.

** Seasons = times of year where there are high persistent densities of porpoise: summer (Apr-Sept) for the summer area and winter months (Oct-Mar) for winter areas



-  Southern North Sea MPA - winter area
-  Southern North Sea MPA - summer area
-  Bristol Channel Approaches MPA - winter area

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Estimating disturbance from fishing ADDs

Objective: to estimate seasonal average footprint and daily footprint (or as near as possible) for gillnet ADDs to compare to the 20% and 10% noise thresholds.

ADD requirements for over 12 bottom set gillnets by ICES area

Area 4 and the mesh size is 220 mm or more

Area 4 and the net is of any mesh size and is total length is 400 m or less

Area 7 d, e, f, g, h and j

Data constraints

Data we have

- number of effort days by gear code per month per seasonal area (in MMO remit of the site)
- mesh size (UK vessels)

Data we would like to get:

- daily effort days (by gear code per seasonal area in MMO remit of the site)
- more info on gillnet lengths and soak time

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Possible method for estimating disturbance from ADDs

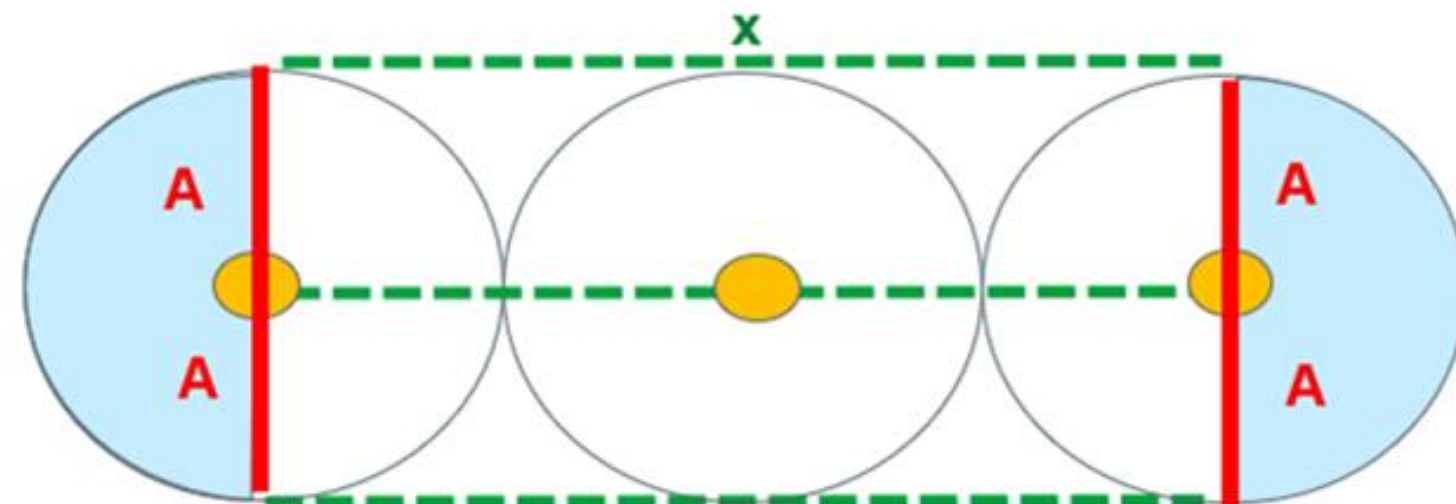
1. Disturbance footprints from gillnet ADDs are based on the number of effort days in the MPA seasonal areas
2. We assume that
 - On one effort day, one fleet of nets are shot
 - That fleets have minimum, median and maximum length of 300 m, 1150 m and 2000 m ([Seafish](#))
 - effort days as a proxy for “length of net in water”
3. For each month and seasonal area, we estimate disturbance using an equation from [Coram & Northridge \(2018\)](#)

$$D = \pi A^2 + x2A$$

D = total area of disturbance

A = range of aversive response (assumed 2 km)

x = length of net in water



Estimated disturbance as seasonal average footprint or maximum monthly footprint (no daily effort)

Assumptions of method to estimate disturbance from ADDs

- Effort days are for vessels fishing in MMO waters only (e.g., offshore of 6 nm)
- Length of the fleet of nets is a minimum 300 m, maximum of 2000 m and median of 1150 m ([Seafish](#)) .
- On each effort day, vessels shoot a fleet of nets (i.e., there are no “haul only” days). Although vessels may shoot and haul nets multiple times in one effort day, the longest soak time (72 hours) will cover for this. There could be examples (e.g., at end of season) of days when vessels haul in nets only (and do not shoot net) but these will be relatively few (MMO expert comms).
- ADDs are optimally spaced along the nets.
- Disturbance area from ADDs occurs entirely inside the MPAs.
- Aversive response range assumed to be 2 km as per Dolphin Dissuasive Devices.
- Does not remove overlaps or merge buffers – potentially leading to potential overestimation of total area disturbed.
- As effort days were only available monthly (rather than daily), a monthly footprint (rather than daily footprint) was estimated for comparison.

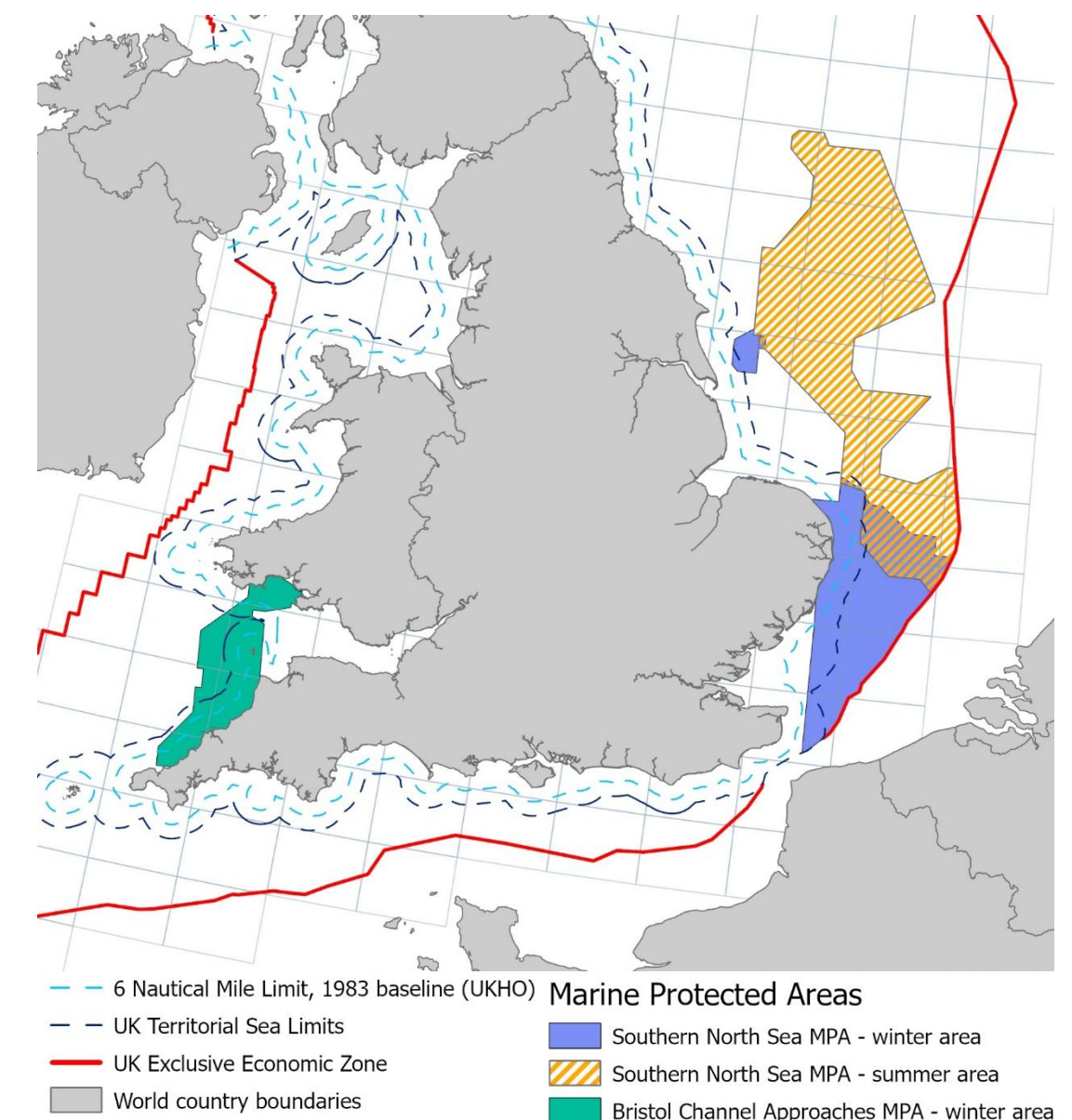
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Option 1: Time-area closures

Time-area closures ban fishing within a particular area either year-round or for a defined period of time, e.g., seasonal closures.

Below are possible options for time-area closures to manage porpoise at a **site-level**.

MPA site	Closure option
Southern North Sea	Whole-site year-round closure to gillnet fishing.
	Close the southern winter area in the winter.
	Close to gillnets in: • South winter area in winter • Northwest winter area in winter • Summer area in summer
Bristol Channel Approaches	Whole-site year-round closure to gillnets.
	Whole-site closure to gillnets in winter.



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Option 1: Time-area closures

Advantages	Disadvantages
- Removes porpoise-fishing gear interactions, reducing bycatch - Could encompass areas/times of year when porpoise-gillnet encounter rates are highest.	- High socio-economic impacts, particularly on small vessels that may not easily be able to compensate - Displaced effort to peripheral areas with potentially high porpoise density - Contributed to spatial squeeze - Do not consider the dynamic nature of fisheries and harbour porpoise

Other Considerations:

- Could be enforced through a byelaw
- Recommended for endangered populations, and areas with consistent bycatch or porpoise aggregation
- Difficult to predict impacts on fishing fleet behaviour, including gear switching.
- Examples from elsewhere show closures are sometimes not effective at reducing bycatch due to displaced effort, but closures can aid survival (although they may not be sufficient to enable population recovery).

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Option 2: Effort limitation

This option proposes limiting fishing effort so as not to exceed a bycatch level that impacts the favourable conservation status of the population.

Advantages	Disadvantages
- Allows some fishing activity to occur, reducing socio-economic impacts. - Can be effective for reducing bycatch.	- Requires methods to define levels of effort and bycatch, which would be highly challenging. - Displaced effort to peripheral areas with potentially high porpoise density <u>(for MPA level management)</u>. - Socio-economic impacts as reduced effort may reduce profits. - High level of bycatch monitoring and reporting would be needed to validate if effort level is suitable

Other considerations:

- Efforts limits could be implemented through a permit scheme, would need to consider if this would be consistent with any wider fisheries management measures.
- Most effective if covers areas with consistent bycatch or porpoise aggregation.
- Could result in gear switching.
- Effort limitation measures introduces for gillnets in 2023 for two European MPAs in the North Sea (eur-lex.europa.eu/legal-content/EN/TXT/PDF/).

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Option 3: Dynamic time-area closures

Two types of dynamic time-area closures have been considered:

1. A temporary closure to high-risk gears that comes into force once a set bycatch level is reached; and
2. A temporary closure based on harbour porpoise presence, also known as a move-on procedure.
 - These closures would come into force if harbour porpoise were encountered, with fishers “moving on” when harbour porpoise are present. This could involve moving to an alternative location or a minimum distance from where the porpoise were encountered.

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Option 3: Dynamic time-area closures

Advantages	Disadvantages
- Allows some fishing activity to occur, reducing socio-economic impacts. - Takes into account high spatial and temporal variability in fishing activity and porpoise presence. - Dynamic closure based on reaching a certain bycatch level may be seen as more proportionate approach.	- Requires method to determine a level of bycatch - Dynamic closures based on porpoise presence may be ineffective for static gears that are left to soak.

Other considerations:

- Would require very strong and timely bycatch reporting and/or monitoring.
- Dynamic closures based on harbour porpoise presence would be challenging given the difficulties of detecting this small elusive species.
- Dynamic closures based on a bycatch threshold were not effective in the northeast [USA Harbour Porpoise Take Reduction Plan](#).

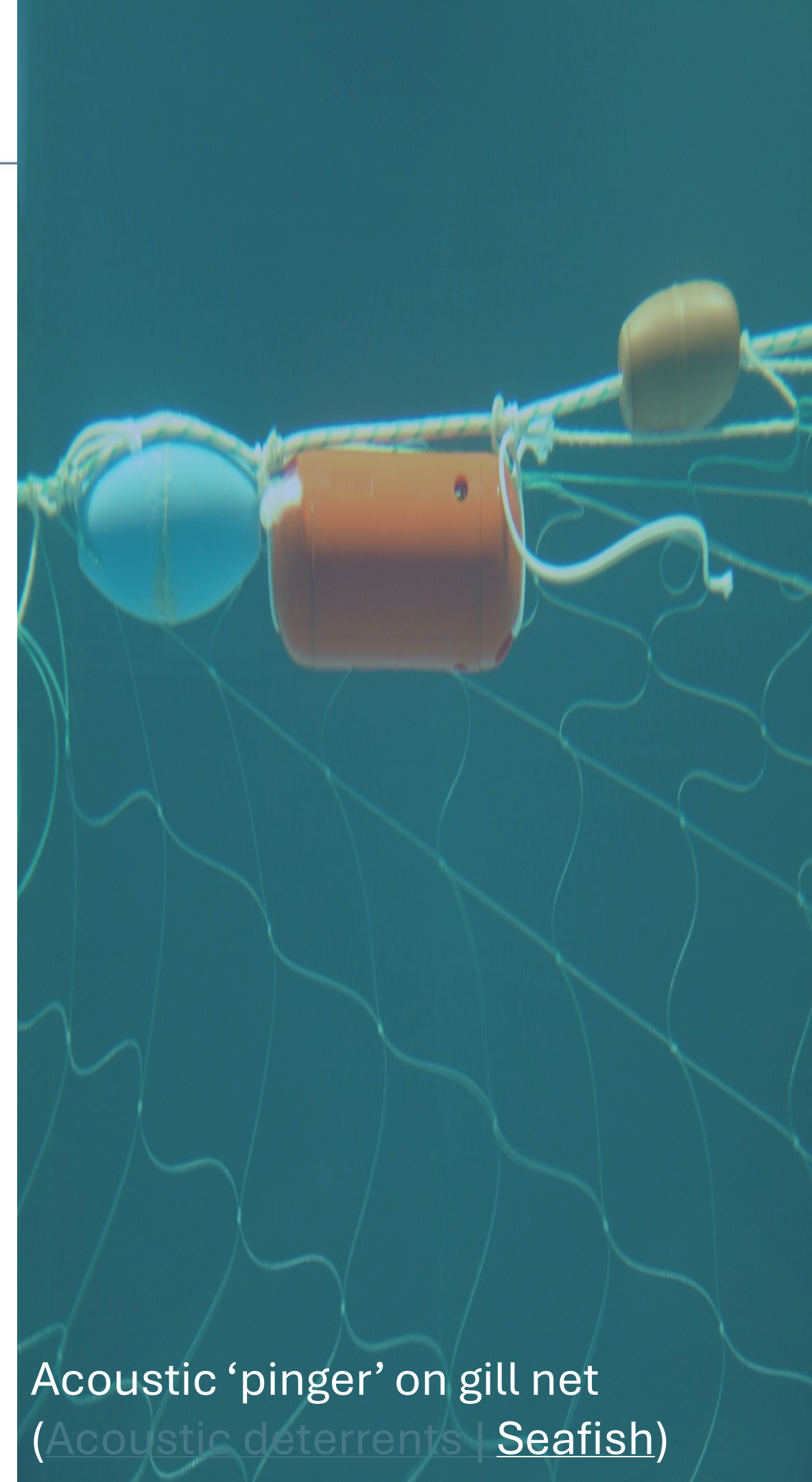
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Option 4: Mandatory ADDs on all gillnets

A legal requirement to have devices that emit a sound causing animals to avoid fishing gear.

Acoustic deterrent devices (ADDs), commonly referred to as pingers, emit sound and enhance the detection of fishing gear by echolocating cetaceans, causing animals to avoid the source. This option could include expanding the current ADD requirements to all gillnet vessels, including vessels under 12 m in length and those over 12 m vessels that do not currently require ADDs in the North Sea.

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Acoustic 'pinger' on gill net
([Acoustic deterrents](#) | [Seafish](#))

Option 4: Mandatory ADDs on all gillnets

Advantages	Disadvantages
• Devices on gillnets are highly effective at reducing harbour porpoise. • Under 12 m vessels account for the majority of gillnet activity in the MPAs and the majority of the UK gillnet fishery, so expanding ADD use could significantly reduce bycatch. • Proven and available technology that does not impact target catch and has limited interference with operations.	• Habitat exclusion, with devices possibly excluding porpoise from potentially high-quality habitat. • Disturbing foraging behaviour of porpoise which may be particularly vulnerable to reduced energy intake • Contribute to a noisy seascape and the thresholds for noise disturbance set for the MPAs. • Socio-economic costs for increased workload and to purchase, charge and maintain devices.

Other considerations:

- Consider regulatory mechanism, including cross-over with marine wildlife licences, and resources for enforcement;
- Devices need to be used correctly otherwise could cause bycatch through funnelling into unpingered sections of net.
- Smaller vessels may have less physical space and capacity to charge and store devices.
- Cost, disturbance, spacing and potentially bycatch effectiveness can vary with device type
- Impacts on porpoise behaviour are likely short-lived and over small spatial scales so habitat displacement may not be an issue at the population scale.
- Limited evidence for decreasing response (habituation) of porpoise to ADDs
- Limited evidence for dinner bell effect so far but increased feeding on/nearby nets cannot be ruled out for seals and dolphins given their ability to learn behaviours.
- Consider avoiding intense ADD use in inshore waters.

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Option 5: Voluntary changes to fishing practices

This option is to incentivise fishers to undertake voluntary changes to fishing practices. This includes an array of possible bycatch mitigation options:

- **Changes to current gillnet fishing operations or gear** e.g. reducing soak time, number or nets and/or net length, changing depths of nets in water.
- **Switching gear:** from gillnets to another gear type with lower bycatch risk e.g. longlines/traps.
- **Trial emerging technologies for gillnets:** passive acoustic reflectors, lights on nets, coloured nets etc.
- **Industry codes of conduct and industry training:** codes of practice, training programme on best practice for release of mammals and gear deployment to minimise bycatch.
- **Modified gear and/or bycatch reduction devices (for trawl gear):** escape hatches and grids in trawl nets etc.

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Option 5: Voluntary changes to fishing practices

Advantages	Disadvantages
• Relative to other options, limited costs to fishers (except for gear switching) • Opportunity for collaboration, for example, could include fisher experience to develop a code of conduct or toolbox of options • Some options may reduce porpoise bycatch • Gear switching could increase catch quality	• Gear switching may not be feasible given that UK fishers use multiple gear types • Uncertainty in bycatch effectiveness and/or lack of proof of concept (passive acoustic reflectors). • Switching gears would be high cost, require retraining and possible loss of traditional knowledge • Potentially reduced target catch quantity (e.g., if reducing soak time or net height)

Other considerations:

- No one size fits all – testing in local fisheries is required
- Consider incentives for fishers
- Could combine with monitoring to understand mitigation effectiveness.

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Option 6: Monitoring and reporting

This option is to introduce a bycatch monitoring and reporting plan.

Monitoring and reporting options for harbour porpoise bycatch could include:

- **Self-reporting** - for example, through a campaign to ensure consistent self-reporting and/or voluntary questionnaires on bycatch;
- **Observers** – for example, increased observer coverage in MPAs and/or bycatch hotspots outside the MPAs; and
- **REM** - for example, through compulsory or voluntary use of REM by vessels fishing within the MPAs and/or bycatch hotspots outside the MPAs.

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Option 6: Monitoring and reporting

Advantages	Disadvantages
- Provides information to better understand bycatch including potential bycatch hotspots. - Opportunity to collaborate with fishing industry. - Potentially limited socio-economic costs as fishing can still occur. - Can be rolled out simultaneously with other mitigation options.	- Does not reduce porpoise bycatch. - Self-reporting is difficult to enforce and verify. - At-sea observers have high costs and may not be easily accommodated on small vessels. - Remote electronic monitoring (REM) has costs for purchasing systems and reviewing data.

Other considerations:

- Each method (self-reporting, REM and at-sea observers) have different pros and cons.
- Voluntary vs compulsory – if voluntary consider that incentives may be required
- Consider linking to wider schemes.
- For self-reporting, need to consider the process and interaction with other fisheries regulations.
- For REM, need to consider the set-up, costs and balance of vessel coverage versus video-analysis coverage.
- REM data have allowed hotspots to be identified in the [Danish gillnet fishery](#).

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PINGER TRIAL UPDATE



Alessandra Bielli
Cefas

Acoustic deterrent devices

» Banana Pingers

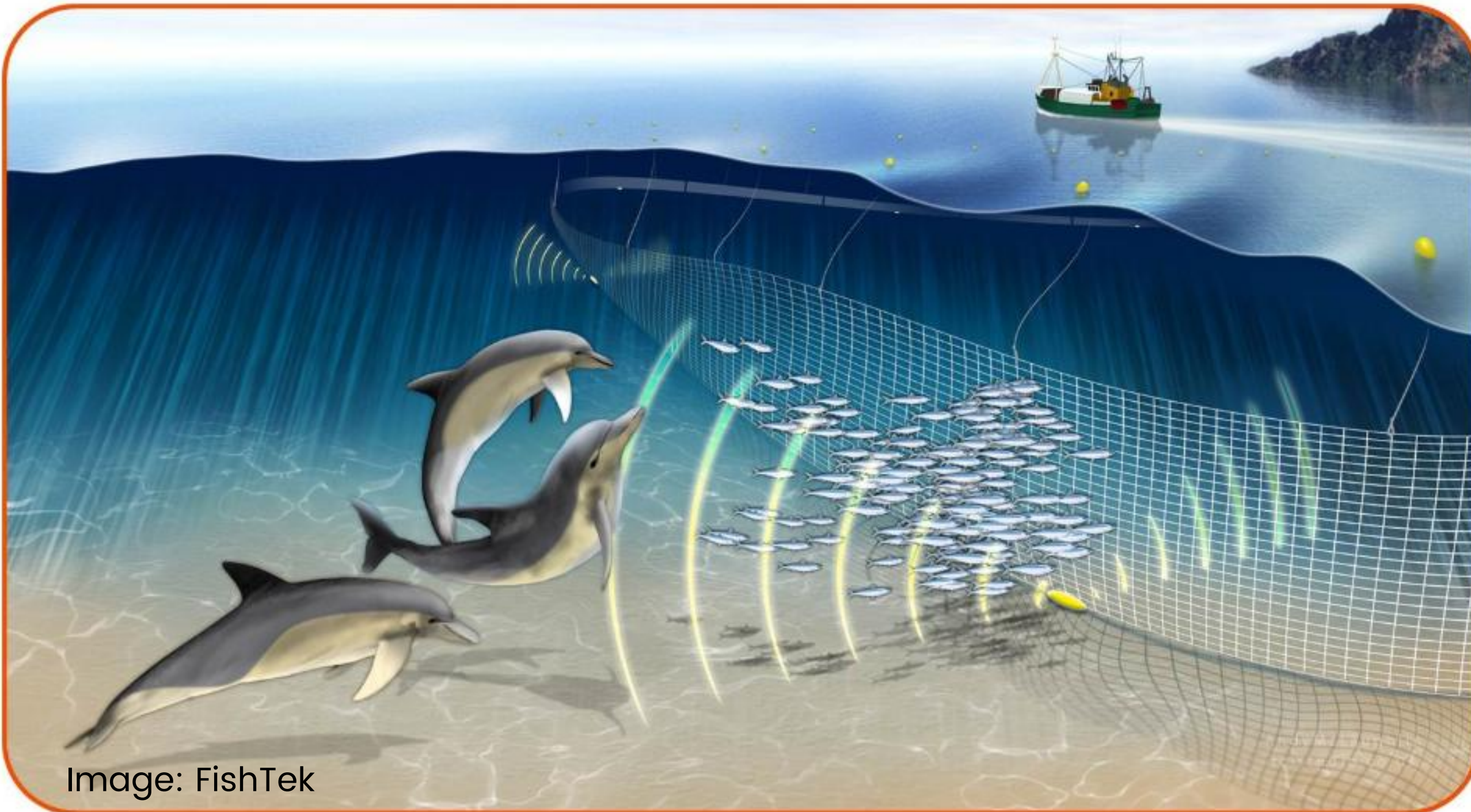
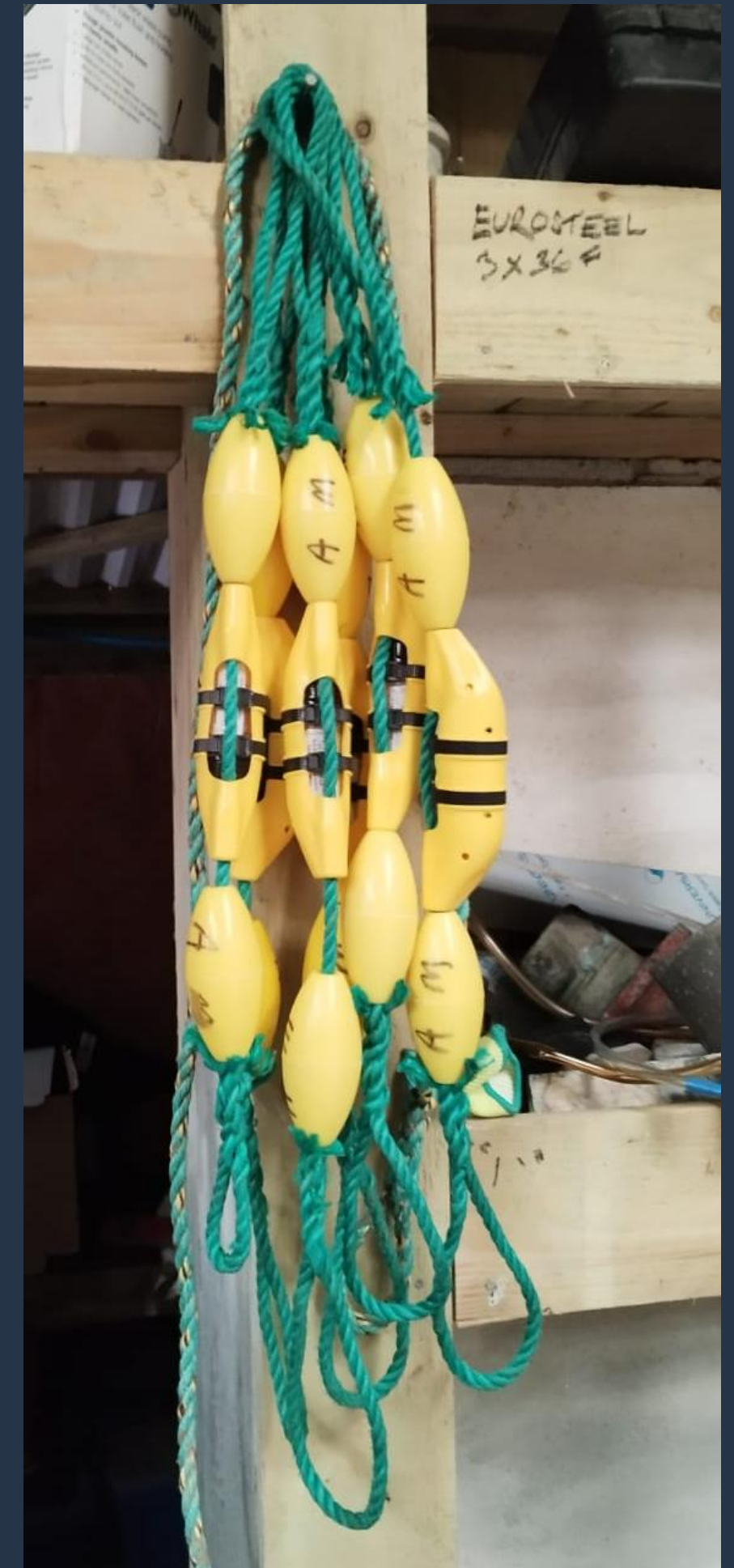


Image: FishTek



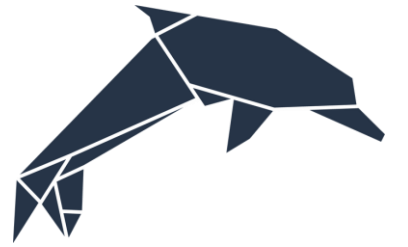
Literature review 2023



Only 2 studies (of 24 bycatch studies) reporting results specifically for common dolphin: 44% and 85% reduction (Carretta and Barlow 2011; Barlow and Cameron 2003).

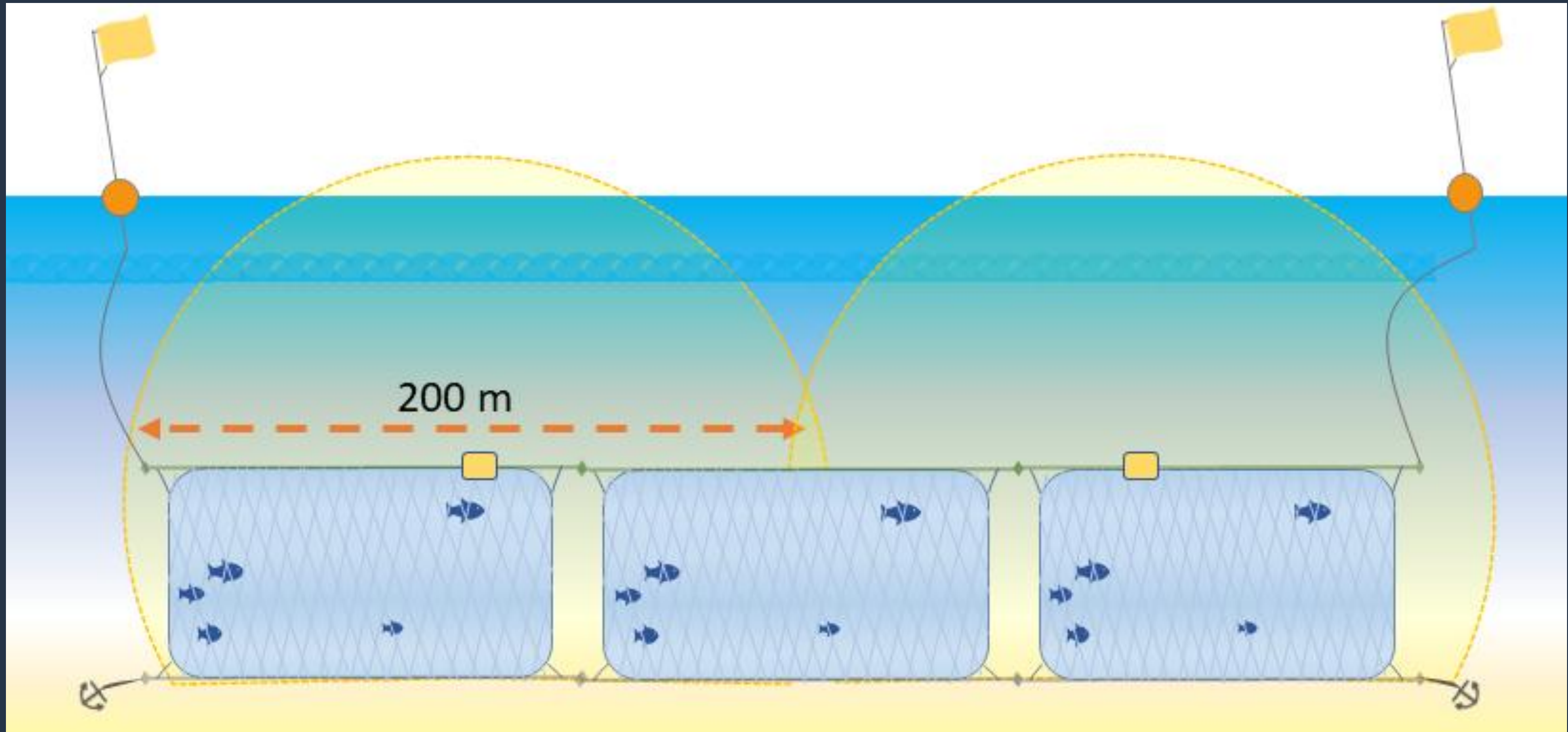


Four studies performed a power analysis a priori



Experimental design

» Paired nets



REM and mobile app

Clean Catch Pinger Trial Paper Log

VESSEL NAME: _____ PARTICIPANT NAME: _____

GEAR: _____

[illegible]

Current progress

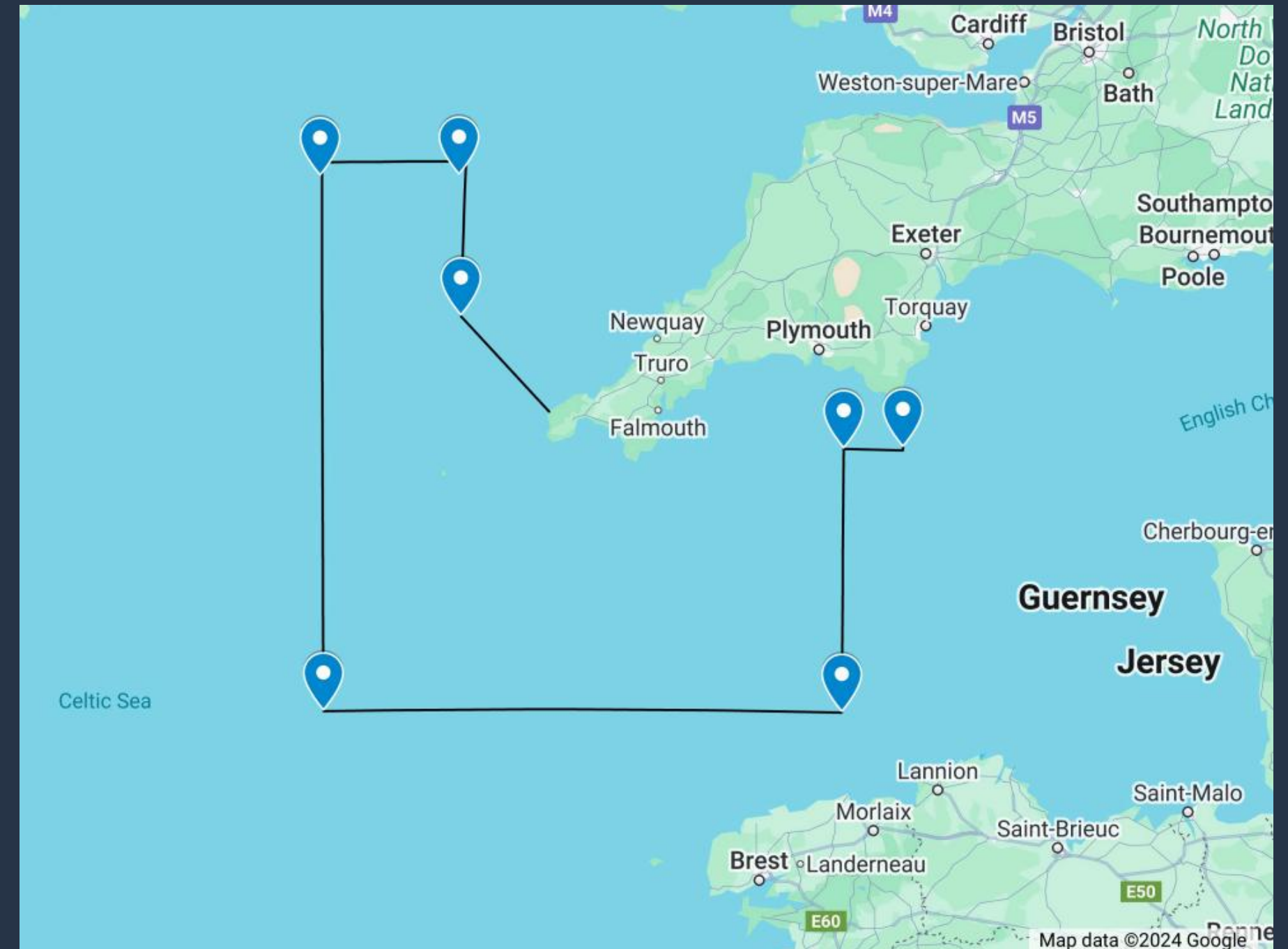
» 11 vessels

» App and REM data:

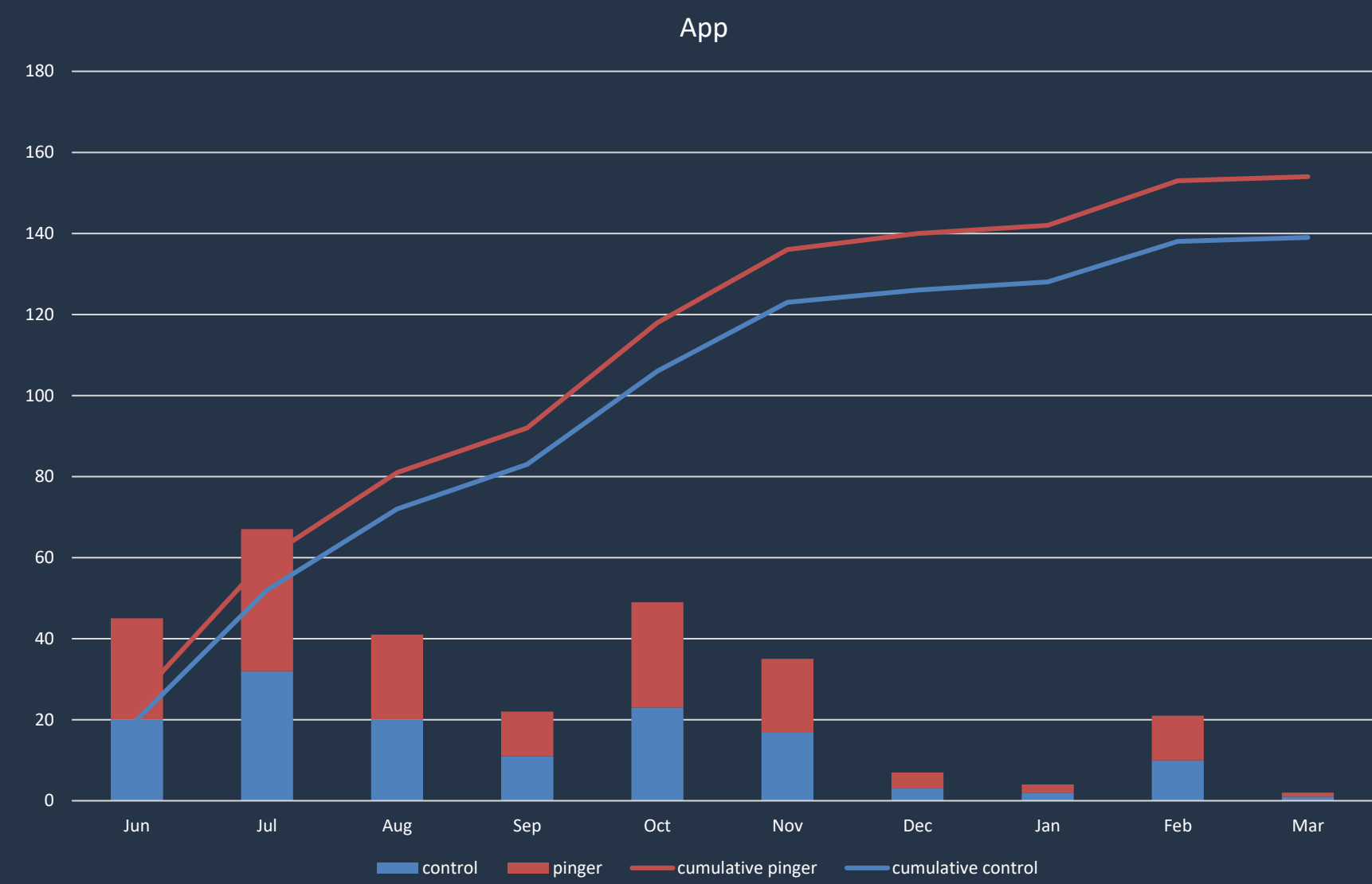
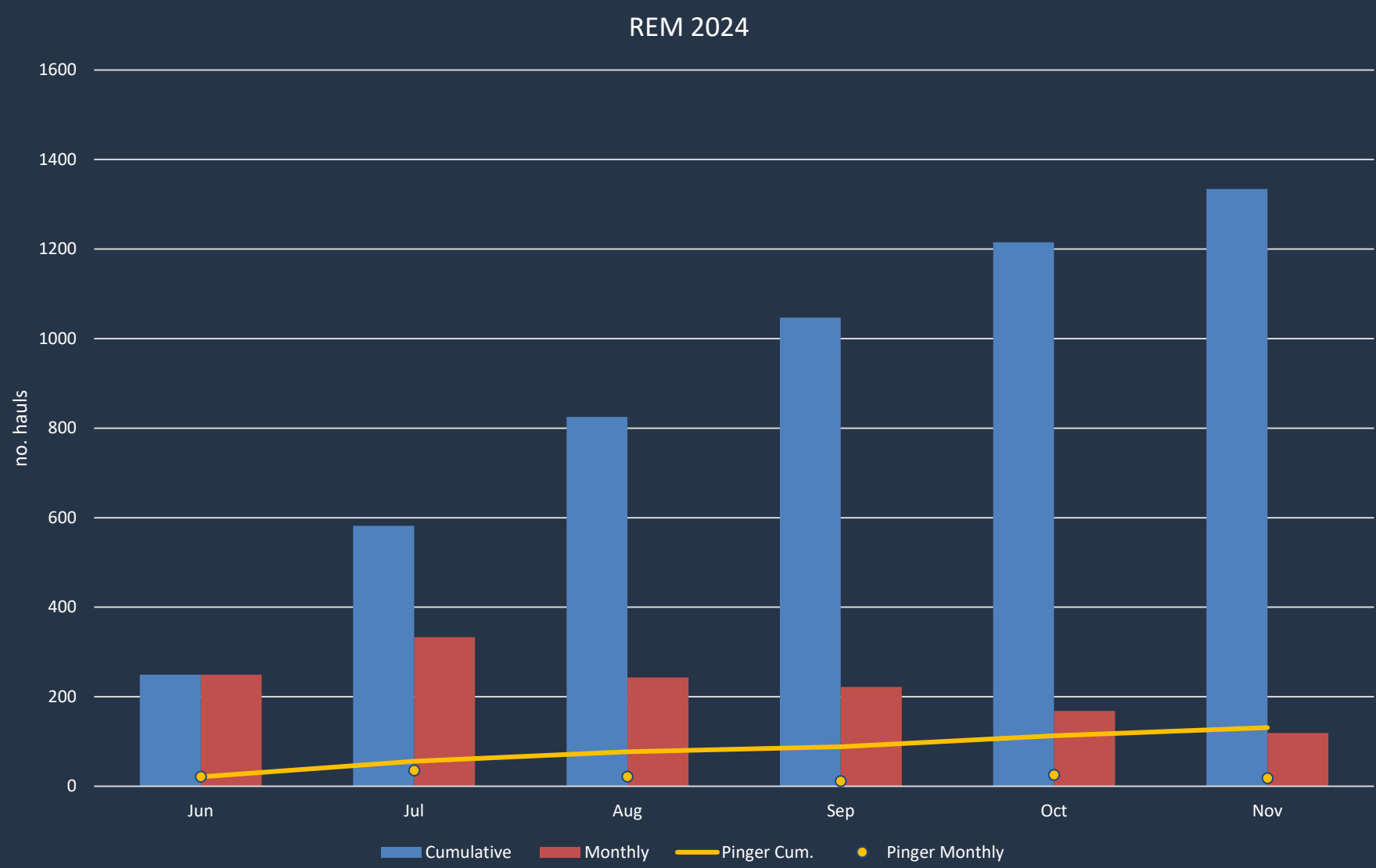
- 3 vessels

» REM:

- 10 vessels
- Not all active



Current progress



Power analysis – common dolphin only

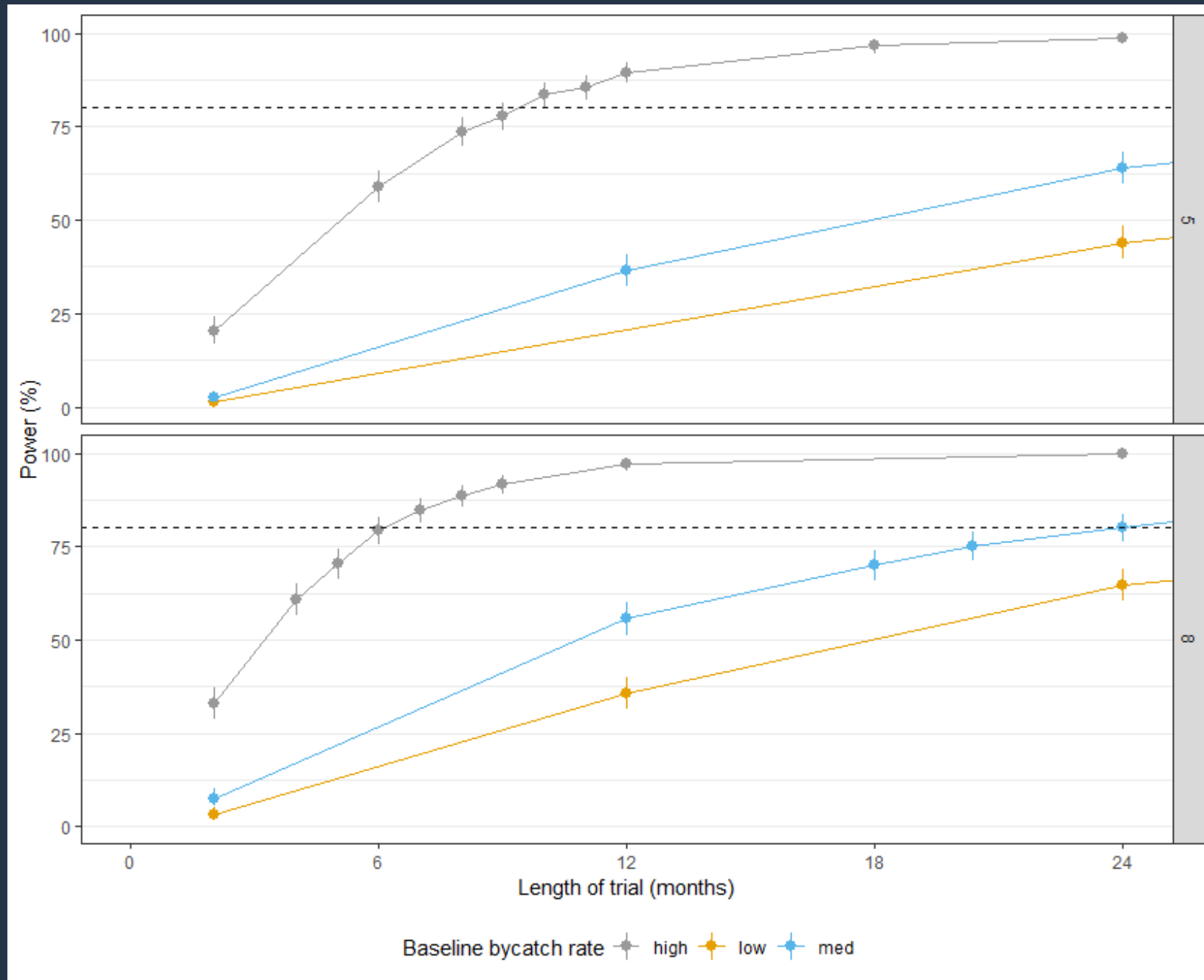


Figure 1. Power curves obtained for various baseline bycatch rates (see parameters section for values). Upper facet shows three scenarios with 5 vessels and lower facet shows three scenarios with 8 vessels. Whiskers show 95% confidence intervals and the dashed lines mark the target 80% power level. With high baseline bycatch rates (grey curves) 80% power is achieved within 1 year. Extending to 2 years, one further scenario achieves 80% i.e. the medium baseline (blue curve) with 8 vessels.

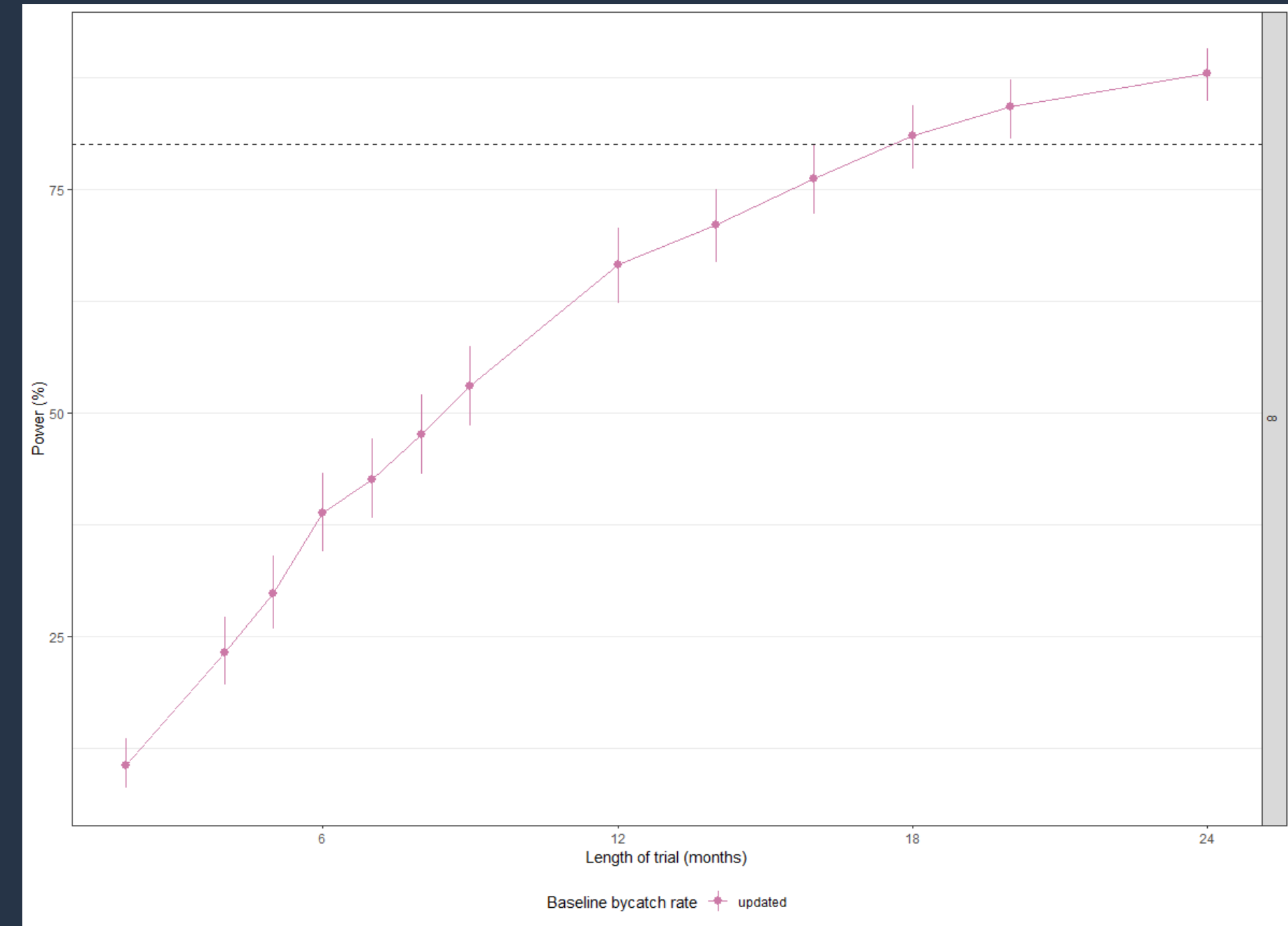


Figure 2. Power curve obtained with updated baseline bycatch rates (see updated scenario parameters section for values). Scenario is based in 8 vessels. Whiskers show 95% confidence intervals, and the dashed line marks the target 80% power level. With the updated baseline bycatch rates 80% power is achieved with ~ 2300 hauls or 18 months at moderate fishing effort.

Figures: Wayne Rostant

Power analysis

- Baseline bycatch rates for common dolphin from app and REM:
 - Gill: 0.0096 events per haul;
 - Tangle: 0.0044 events per haul,
- 80% power is achieved in 2300 hauls or ~18 months.
- This is about three times the high bycatch rate scenario, but less than medium and low scenarios.
- Caveats:
 - Sensitive to assumptions.
 - Only 3 vessels currently.

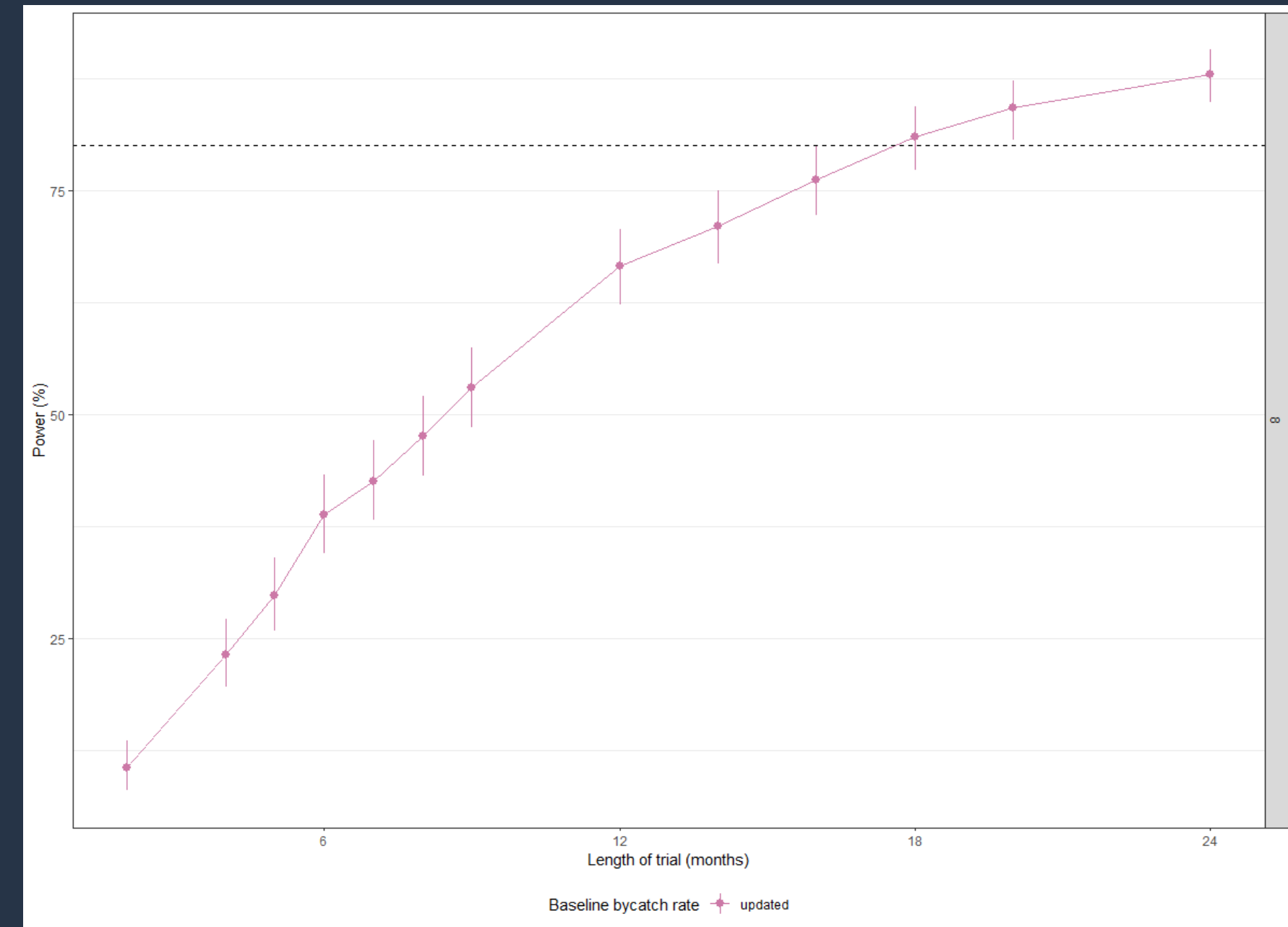


Figure 2. Power curve obtained with updated baseline bycatch rates (see updated scenario parameters section for values). Scenario is based in 8 vessels. Whiskers show 95% confidence intervals, and the dashed line marks the target 80% power level. With the updated baseline bycatch rates 80% power is achieved with ~ 2300 hauls or 18 months at moderate fishing effort.

Challenges



Attaching pingers.



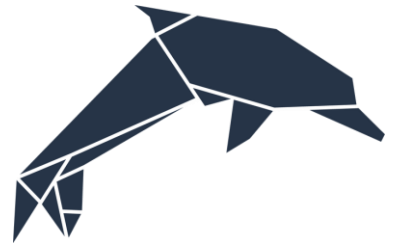
Licencing.



Low bycatch.



Wider context.



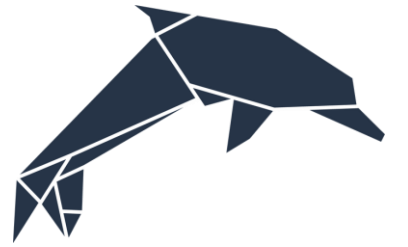
Next steps



Cross validating REM/App data



Modelling.



Thank You.

Alessandra.Bielli@cefas.gov.uk



Clean
Catch



EEFPO NORTH SEA TRIAL

 Dale Rodmell (EEFPO), Emily Roebuck (Cefas),
Aadil Siddiqi (ZSL)

Clean Catch: Trial 2

» ESTABLISHING A NEW FISHERY PARTNER

- To date: Southwest focus, collecting data on static gear types and cetaceans.
- Expanding the scope of Clean Catch.
- New benefits and opportunities ahead, and the chance of working with a different perspective.

» PROGRESS WITH TRIAL 2

- Establishing a partnership, site visit and introductory chats.
- Local Fisher Liaison Officer recruited.
- Drafting a vision for the trial.



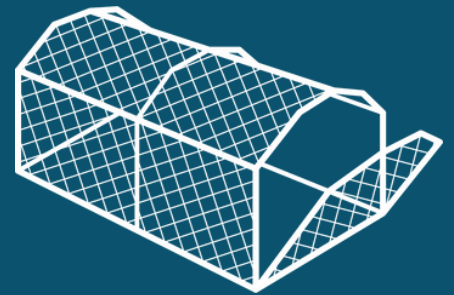
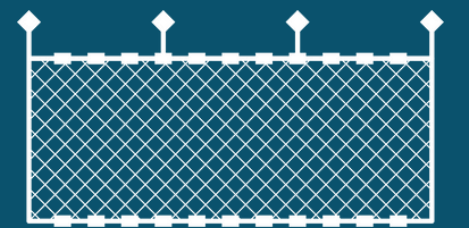
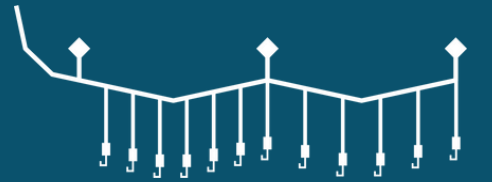
EEFPO – New Fishery Partner

» SEARCH FOR A NEW FISHERY PARTNER

- Call coincided with EEFPO members ongoing efforts
- Successful trials of scarecrow lines with long-liners
- Transferability and recognition of global work

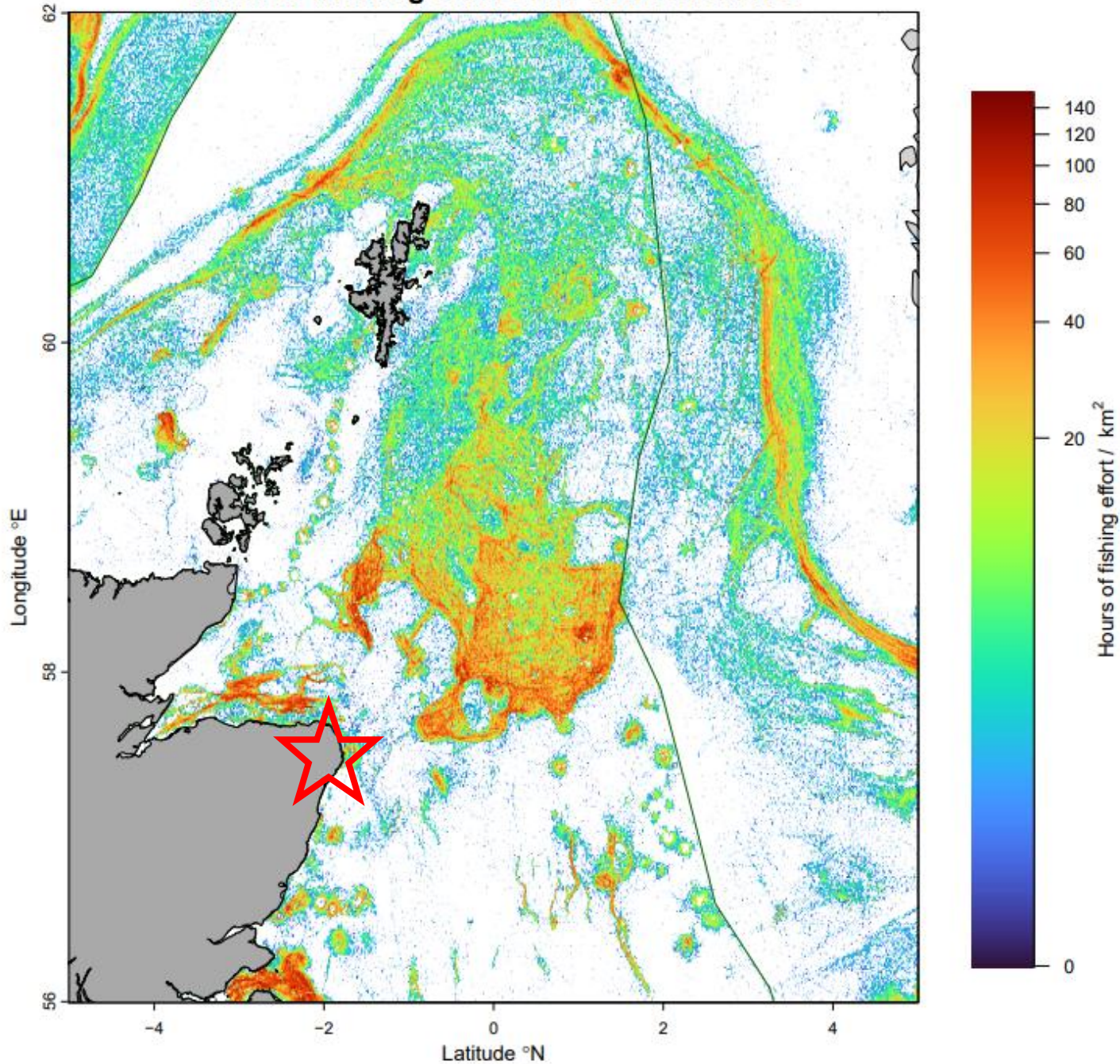
» EEFPO APPLICATION

- On behalf of members – P & J Johnstone and Lockers Trawlers
- Develop the seabird bycatch evidence base
- Warp strikes, diving gannets and gulls
- Apply science to scarecrow line mitigation trials



North Sea Whitefish Fishery

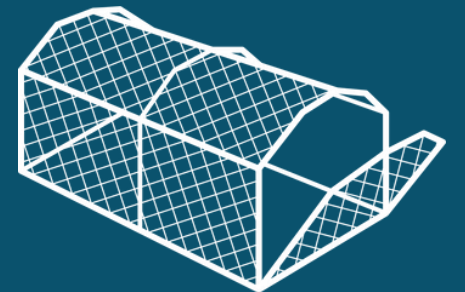
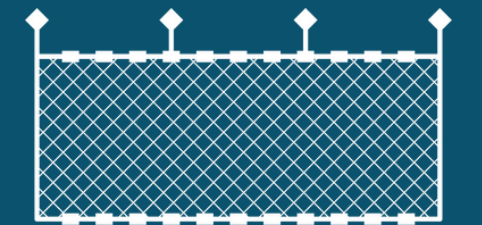
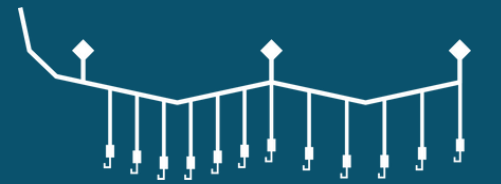
All GFW trawling effort 2021–2024 inclusive



» OPERATING OUT
OF PETERHEAD

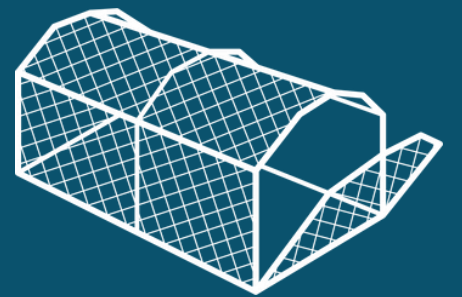
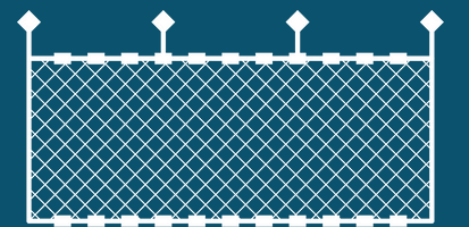
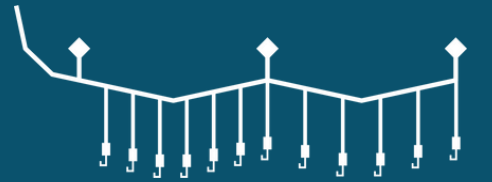


» TRAWL & PAIR
TRAWL VESSELS



Trial Vision

- To demonstrate low seabird bycatch and the success of the trialled mitigation and/or monitoring tool.
- To highlight a collaborative approach as a key outcome of the trial, demonstrating that co-design can work successfully in this location.



PETERHEAD SITE VISIT (Apr '25)

» AIMS

1. Understand how fishermen and the fishery work.
2. Understand type, patterns, extent of seabird bycatch.
3. Gather thoughts related to inclusive co-design.
4. Determine how fishermen want to **communicate** with Clean Catch.
5. Identify what fishermen need for **informed** consent to participate in an inclusive, scientifically sound trial.
6. Introduce Fisher Liaison Officer to the project and fishery partner.



INTRODUCTIONS TO FISHERMEN

» CONVERSATIONAL INTERVIEWS

- Assess **whether fishermen will consider the project.**
- Obtain input from fishermen on a trial vision.
- Communications, reporting options.



» INFORMING NEXT STEPS

Based on what fishermen say, Clean Catch needs to:

1. Execute a **process for inclusive engagement.**
2. **Exchange information** required to develop the trial.
3. **Align with the fishery on the terms and design** of the trial.



HIGH-LEVEL FINDINGS

» WILDLIFE BYCATCH

Gannets and Northern Fulmar.

- Low numbers (0–2 gannets/trip). Both species have high survival rates (>90% reported anecdotally).
- Fishermen feel **strongly connected** to seabirds.

» BIRD SCARING LINES AND CAMERAS

Interest in trying monitoring/mitigation tools, with caveats:

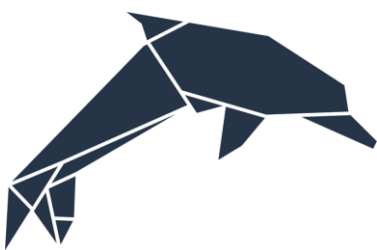
- Scaring lines: crew safety, vessel damage, insurance policy coverage, **seabird welfare**.
- REM: enforcement, surveillance, camera direction.



QUESTIONNAIRE RESULTS



Purpose: identify motivations, attitudes, perceptions related to sensitive species bycatch.



Relatively Strong Agreement	General Agreement	Some Uncertainty
Sense of connection to the sea and to wildlife (particular relationship with seabirds).	Important to use fishermen as a knowledge base for project development.	Experience of trying different ways to fish that reduce wildlife bycatch. Doing so with support from others.
Value of sharing expertise through co-design.	Mitigation and/or monitoring bycatch is important .	Value of science-industry collaboration .
Helps identify how skippers envision their role on a trial.	Fishermen should play a leading role in these efforts.	Both points here likely relate to limited experience working on bycatch trials.



TRIAL CO-DESIGN

» Fully and regularly informing the fishery

» Clarity on the science and practical aspects of trial design: pros & cons

» Revisiting shared vision to prevent mission drift and drops in motivation



TRIAL DEVELOPMENT

2025	Spring	Introductions with fishery	☒
		Fishery and skipper comms established	☒
	Summer	BMP observer trips	☒
	Autumn – Winter	Trial monitoring phase, baseline estimates of seabird bycatch and interactions	
2026	Spring	Trial measure(s) implemented	

» Bringing together related bycatch initiatives with other regional Producer Organisations

» Discussions around support from Marine Scotland



TRIAL DEVELOPMENT



Introductory conversations highlighted areas for further research:

'Safety' 'Seabirds in net' 'Warp strikes' 'Offal feeding'

Focused monitoring

**BMP
observer
trips**

**REM
monitoring**

**Information
exchange and
co-design with
fishery**

**Trial co-
design,
feasibility**



OBSERVER TRIPS

Gear Operation Durations	Shoot, tow, haul, offal discharge
Seabird Abundance	Number and species of seabird present during gear operations
Seabird Interactions & Behaviour	Interactions with the net, warps, offal discharge (e.g. diving, flying, sitting on the surface)
Mitigation Device	Changes in seabird behaviour and proximity to gear
Seabird Distance from Vessel	Distance range of seabird interactions from the vessel, the warps and the net, for monitoring considerations e.g. REM/observer
Sensitive Species Bycatch	Where and when does it occur, and what are the outcomes

CODEND IN THE WATER WITH NET STILL AT SURFACE				GOPRO FOOTAGE? (yes/no):			
IS THERE CATCH PROCESSING TAKING PLACE? (yes/no):							
INTERACTION START TIME:				INTERACTION DISTANCE FROM WARPS:			
SPECIES	BEHAVIOUR & NUMBER			PROXIMITY TO NET (over/ under 3m)			DISTANCE RANGE FROM VESSEL
	DIVING	FLYING	SITTING	DIVING	FLYING	SITTING	



BYCATCH MITIGATION BEST PRACTICE GUIDES



Chantal Lyons
Mindfully Wired

Origin

» Recommendation from the Hauling Up Solutions 2 workshop (2022)

- Emphasis on co-development of the guides.
- To be tailored to specific fisheries and their contexts.
- To include “any actions” capable of monitoring and reducing bycatch.



Scope and content



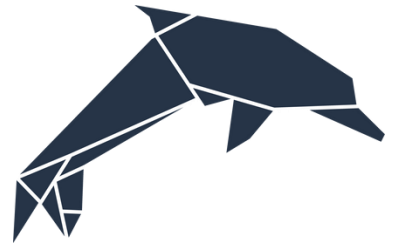
Aiming to select fisheries to focus on based on the results of research into bycatch hotspots and conversations with the industry.



“Measures” could include practices, gear modifications, and alternative gears.



Guides will cover “ready and easy to implement” measures as well as ones that are less so (e.g. pricier, need more refinement, need a license from the MMO to use, etc.).



Development process



Identify fisheries to focus on.



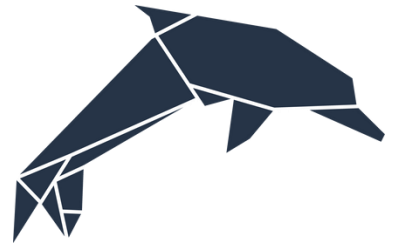
Early-stage research & scoping sessions with fishermen.



Draw on firsthand insights from fishermen, scientific literature, and grey literature to develop the guides.



Light-touch review rounds by fisherman task force.



Fishermen's views on existing resources



Some guides are never used (nature and format of a 'useful' bycatch guide depends heavily on the species).



Praise for the Shark Trust's elasmobranch species guides:

- Helps them tell apart similar-looking species.
- Visuals are excellent and extremely helpful.
- Many species covered have quota – identifies which are ETP bycatch and which can be retained.



MMO Catch App: Species names in app do not reflect common names used by fishermen, making it hard to find and make the right selections for catch.



Fishermen's suggestions



Keen for an app / bycatch guide giving access to live data or regular updates on remaining quota available – to prevent incidences of too much catch and enable better planning.



Bycatch guide designed for new industry entrants?

- Covering: what bycatch is; species it affects; range of methods to prevent it.
- Something to hand to young fishermen during apprenticeship or other training courses.
- But probably wouldn't be repeatedly used and may form more of a 'reputation tool' for industry to show its engagement with the issue.



Fishermen's suggestions



On local tailoring of bycatch guides, the importance of local knowledge and language was emphasised.



Format for bycatch guides was discussed, but lack of certainty on what might drive usage by the industry.



Again, fishermen thought the guides could be more of a 'reputation tool' that might sit within local POs, more so than day to day use by skippers.



Discussion in response to fishermen's feedback



Reflections from their feedback?



Your own experiences in developing similar resources (past or ongoing)?





CLOSING REMARKS



Vicki Castro-Spokes
Defra



Closing remarks



Summary of key points, decisions and any actions



Next NAB meeting: late 2025/early 2026 (in-person)

- Suggestions for agenda items welcomed



AOB

