



Clean Catch

Joint Action on Sensitive Species Bvcatch

National Advisory Board meeting

Online | 11th March 2026

Meeting will begin at 12:00





WELCOME & INTRODUCTIONS



Rob Whiteley
Defra, NAB Chair

Agenda

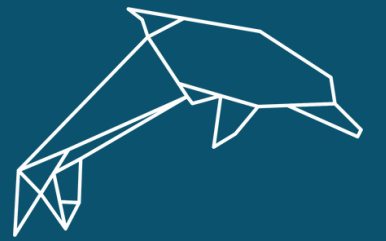
- 12.00: Welcome and introductions
- 12.10: REM policy landscape overview
- 12:25: What is REM and how can we use it?
- 13:05: EEFPO Whitefish Trial – updates & discussion
- 13:35: AOB and closing remarks



Meeting aims

» Aims

- Remote Electronic Monitoring (REM) – updates and discussion
- EEFPPO North Sea Whitefish Trial: REM update, approach and challenges
- Obtain advice and insights from the NAB on the current approach to seabird interaction & bycatch data analysis





Thoughts on REM – Wordcloud poll



Rob Whiteley

Defra, NAB Chair



What are your views on REM?



Department
for Environment,
Food & Rural Affairs

Remote Electronic Monitoring: Policy landscape overview

Elinor Brett

Defra, REM policy lead

Global REM policy landscape



UK legislative framework

Fisheries Act 2020 - provides the framework to manage UK fisheries as an independent coastal state, outside of the EU Common Fisheries Policy.

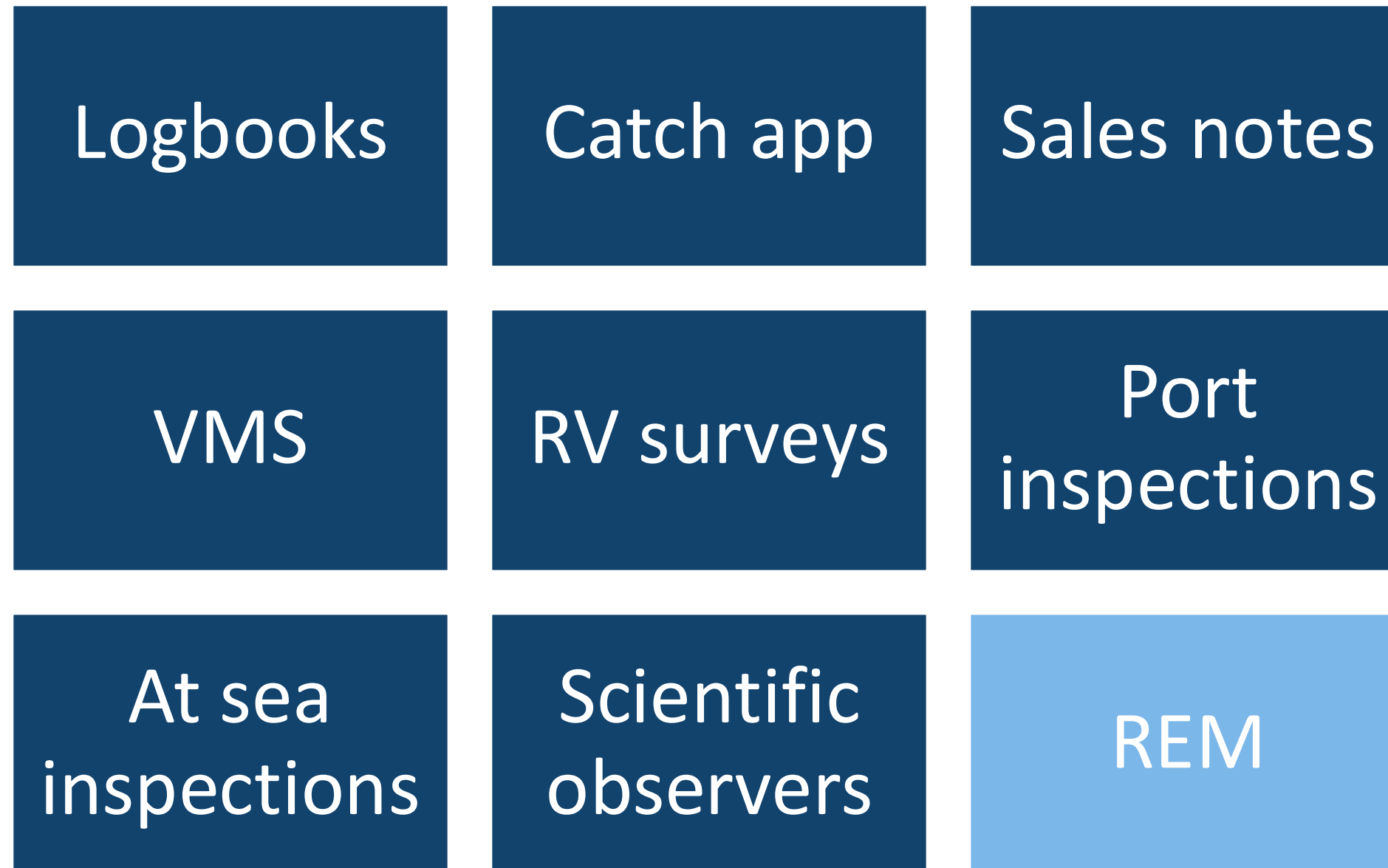
Joint Fisheries Statement - commits the UK fisheries policy authorities to working with the fishing industry and interested organisations to develop and implement fisheries management.

Fisheries Management Plans - set out the plans and policies to secure the long-term sustainability of UK fish stocks.

Devolution - enforcement of fisheries management measures and scientific monitoring of fish stocks are devolved policies. It is therefore for each UK administration to decide their approach, but we work closely with Scotland, Wales and NI to share information.



Wider fisheries monitoring context



REM complements rather than replaces existing fisheries monitoring

However REM fills a key data gap about fishing activity at sea – what happens when an observer or marine officer is NOT on board a vessel?

Defra policy landscape



Over a decade of REM projects and research

2021: Focus on policy development for long-term use of REM for fisheries management, moving from pilots to fishery-wide implementation

2023 consultation: Proposed a phased roll out to five priority fisheries, and an approach that is:

- Targeted:
 - Tailoring data collection to the monitoring needs of different fisheries
- Phased and staged
 - Starting with priority fisheries and introducing further fisheries over time
 - Working with early adopters to start with, moving to mandatory phases later for all vessels in the fishery

Priority fisheries

Identified through a wide-ranging evidence review looking at:

- data needs
- suitability of REM as a tool to meet these needs
- how achievable setting up REM in the fishery is likely to be



The five fisheries include approximately 160 English vessels and 400 non English vessels.

The priority fisheries are intended as a starting point, with REM likely to be implemented in further fisheries later.

Note that the review assessed vessels under 10m in length, but excluded them from the final selection. This reflected the need for the expansion of REM to be risk-based, proportionate and pragmatic.

An iceberg floating in the ocean. The tip of the iceberg is visible above the water surface, while the much larger, submerged part is visible below. The sky is blue with some clouds, and the water is a deep blue. The iceberg is white and has some texture on its surface.

REM equipment

Objective setting

Data analysis

Data storage

Data sharing

Funding

Legal agreements

International agreements

Consequences for management



Realities of REM



Rebecca Lamb
Senior Scientist – Cefas

What is Remote Electronic Monitoring?

» REM is a data collection tool

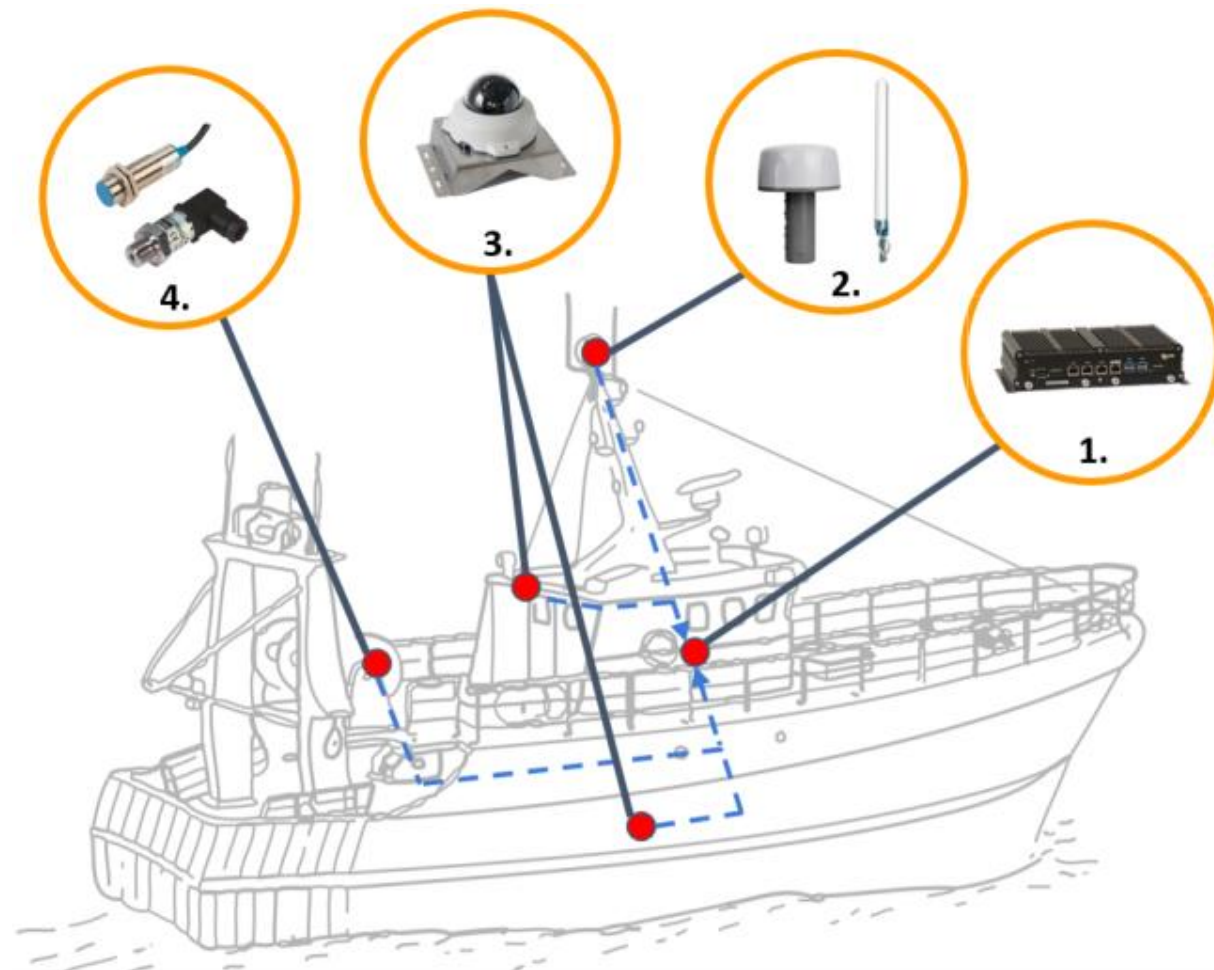
- Installed on fishing vessels to collect data
- Each installation can look different

» A REM system can include:

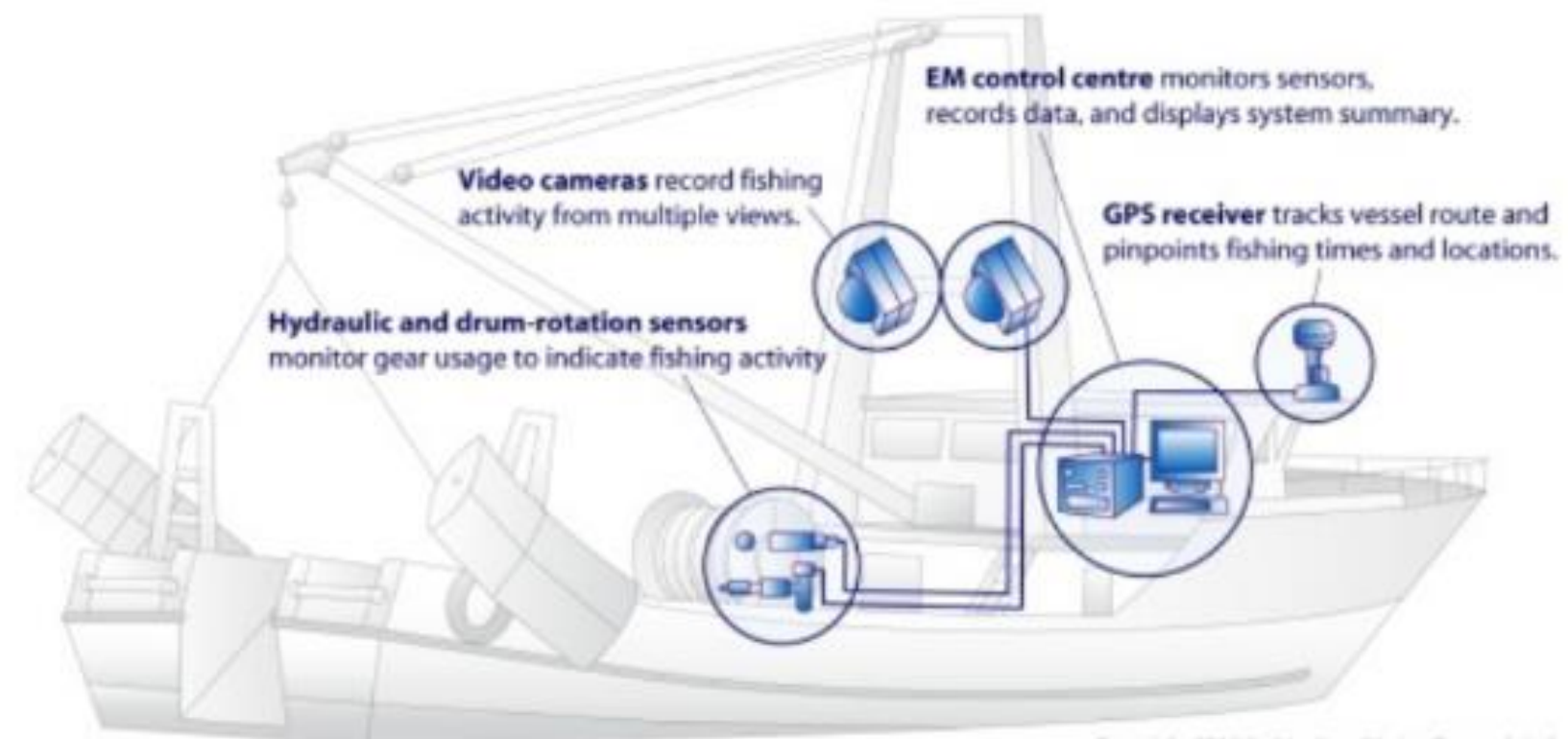
- Central computer
- Digital camera(s)
- GPS sensors
- Gear sensor (s)



What is Remote Electronic Monitoring?



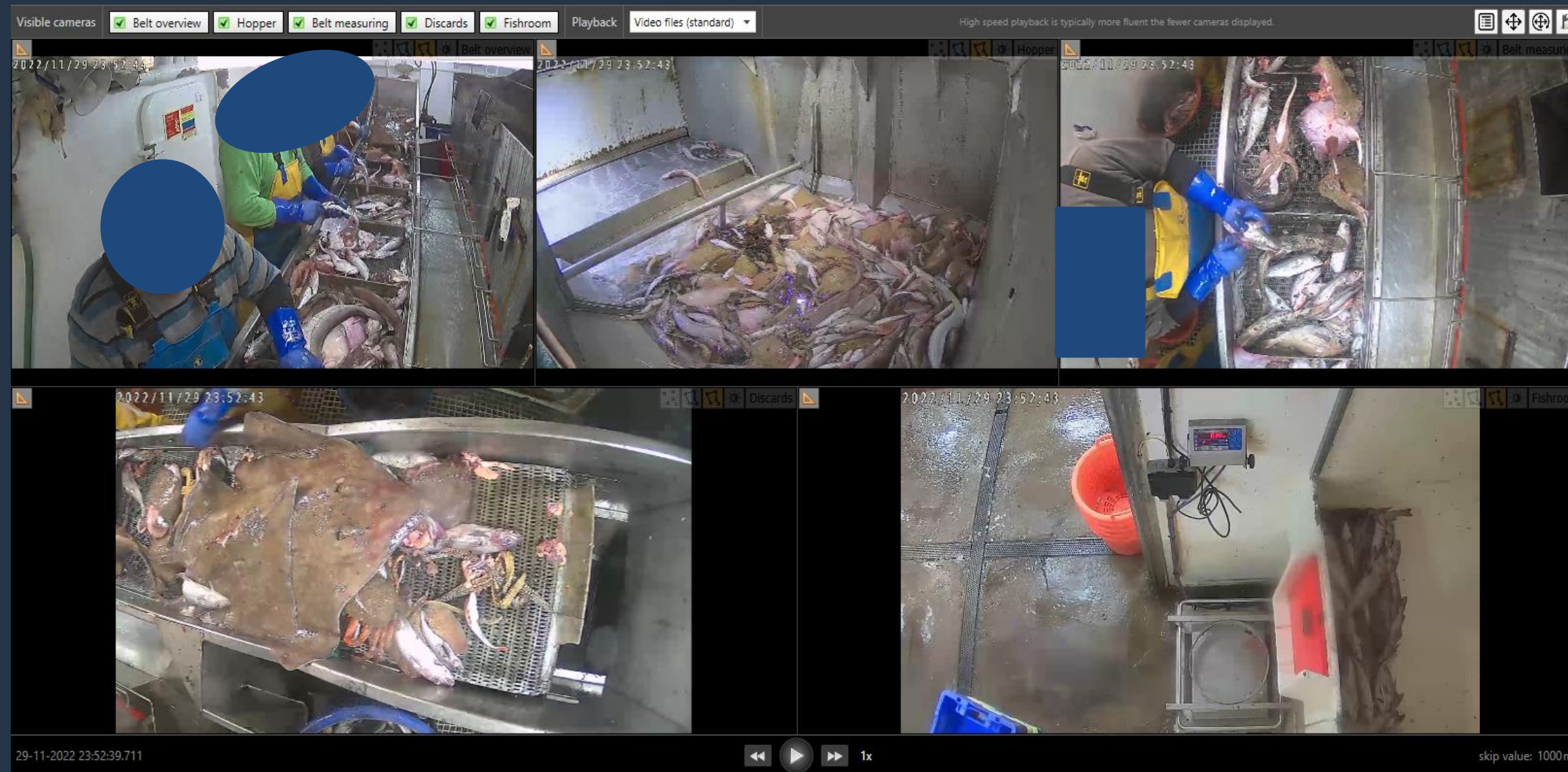
1. **Black Box Video control unit** with built-in GPS & wireless communication modules, that captures & stores sensor and video data.
2. **Antenna** enabling the wireless communication of data from the vessel & remote connectivity to the vessel to monitor & manage the system.
3. **Digital IP cameras** for capturing the handling and processing of the catch.
4. **Sensors** (analog & digital) supported to capture fishing activity and effort.





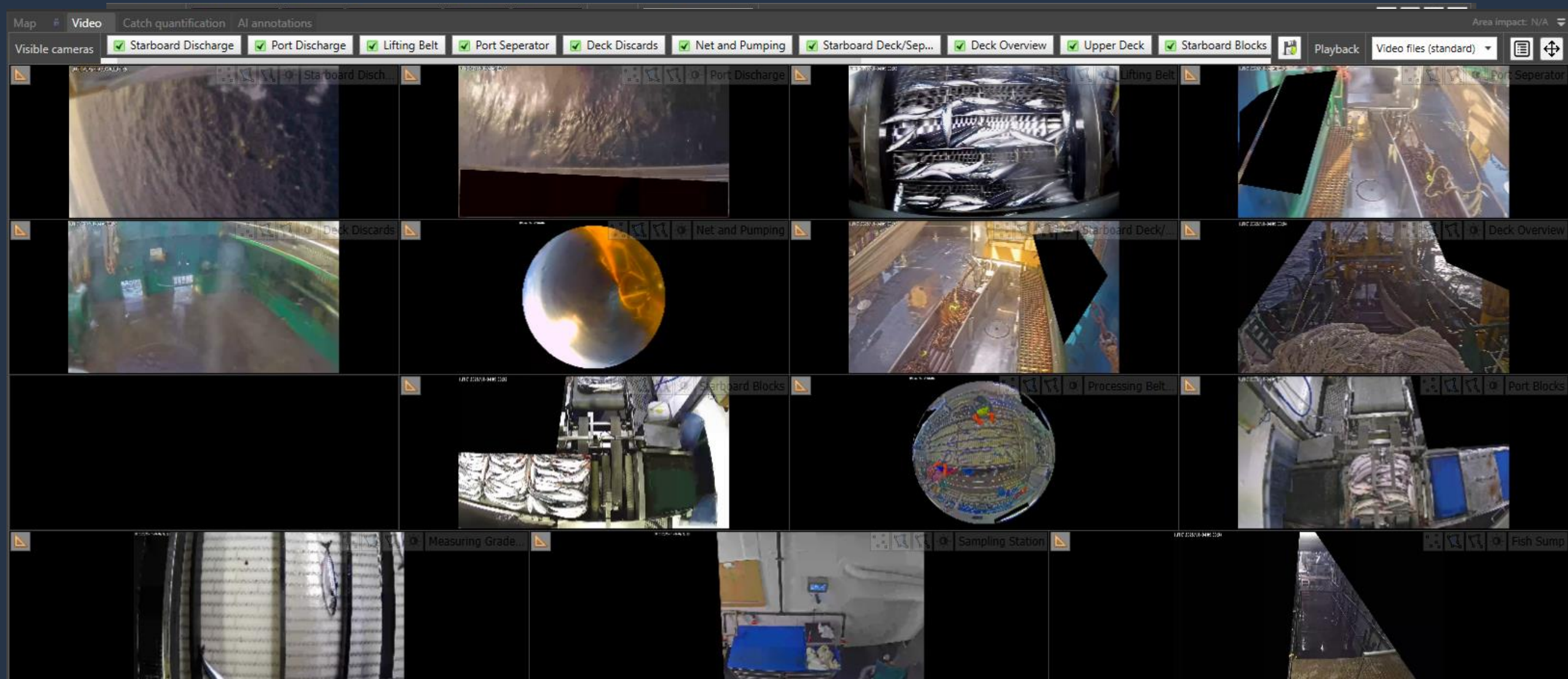
Aim: Collect length information on Spurdog

Number of cameras: 1



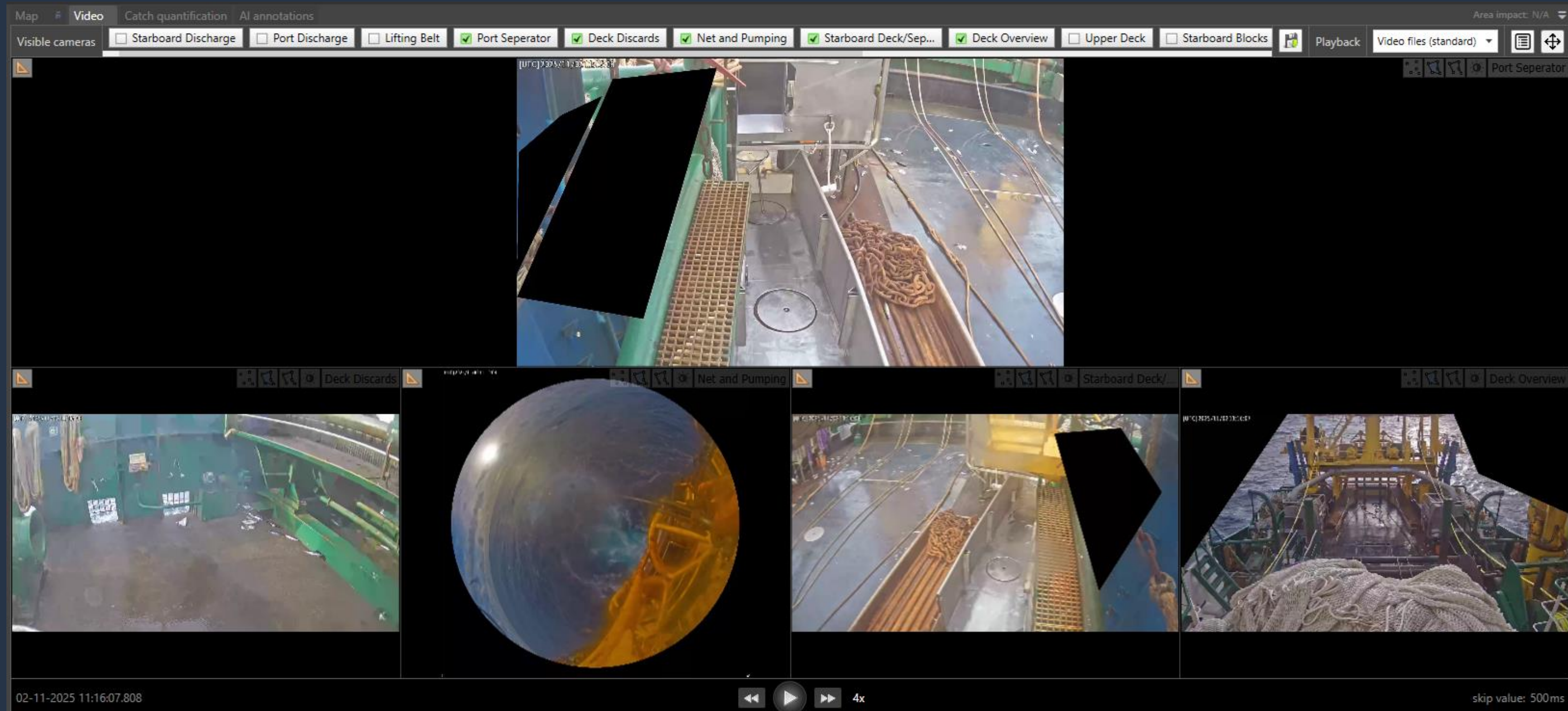
Aim: Continuous monitoring, generating data on catch composition and lengths of key species.

Number of cameras: 4-6



Aim: Meet five monitoring objectives for early adopter project.

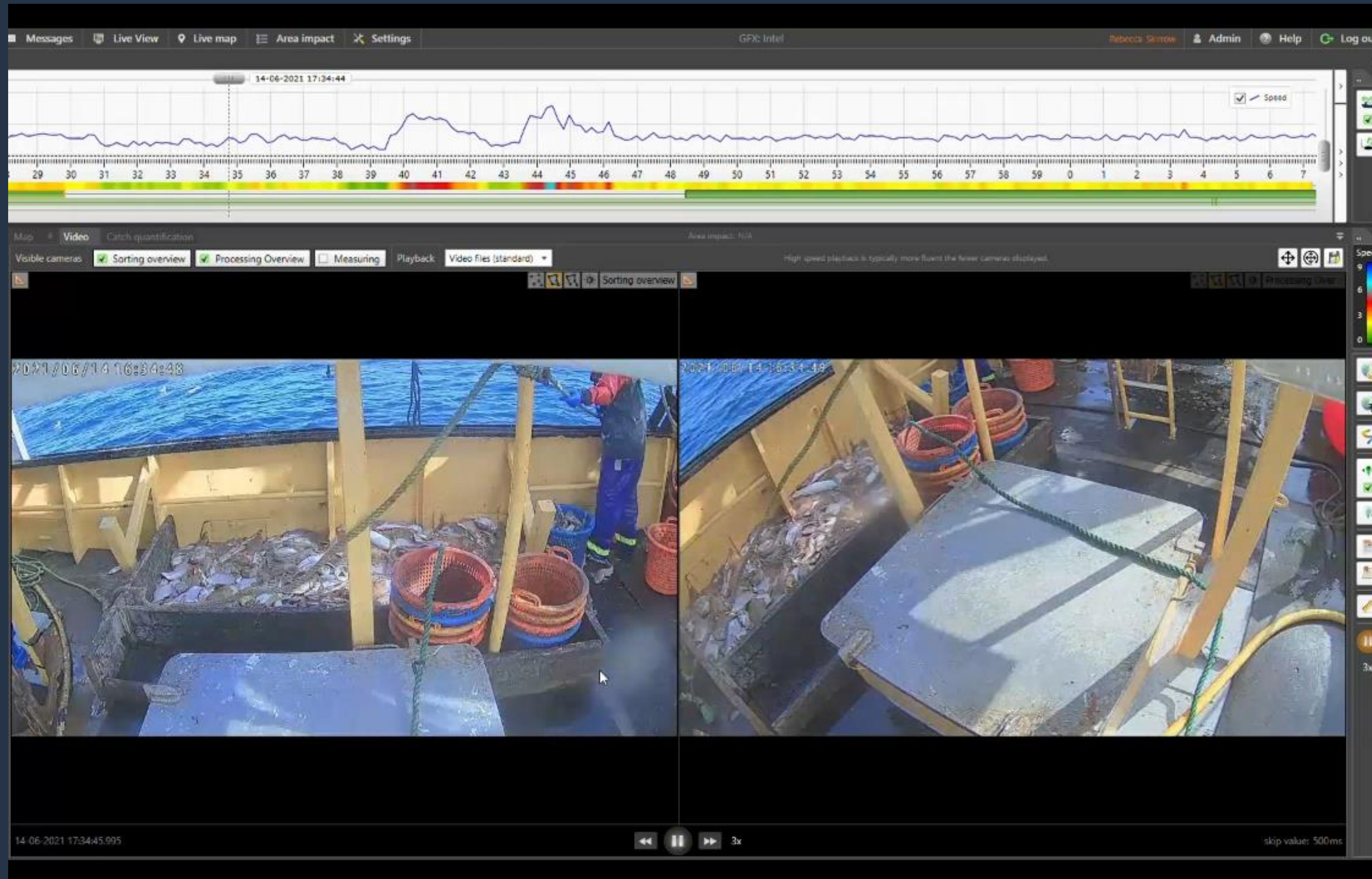
Number of cameras: 14



Aim: Meet five monitoring objectives for early adopter project.

Number of cameras: 14

What does this look like?



What data can REM generate?

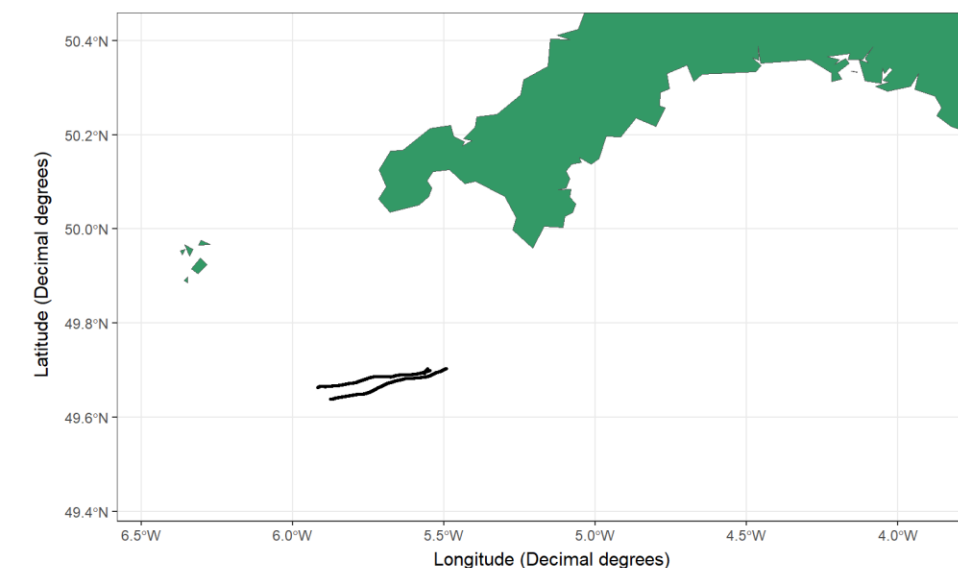
» High resolution spatial data

- When
- Where
- For how long

» Data on catches

- What was caught and what happened to it
- Where was it caught
- How much/many

Fishing Activity: 2024-09-01



Case Study: Southwest Pinger Trial

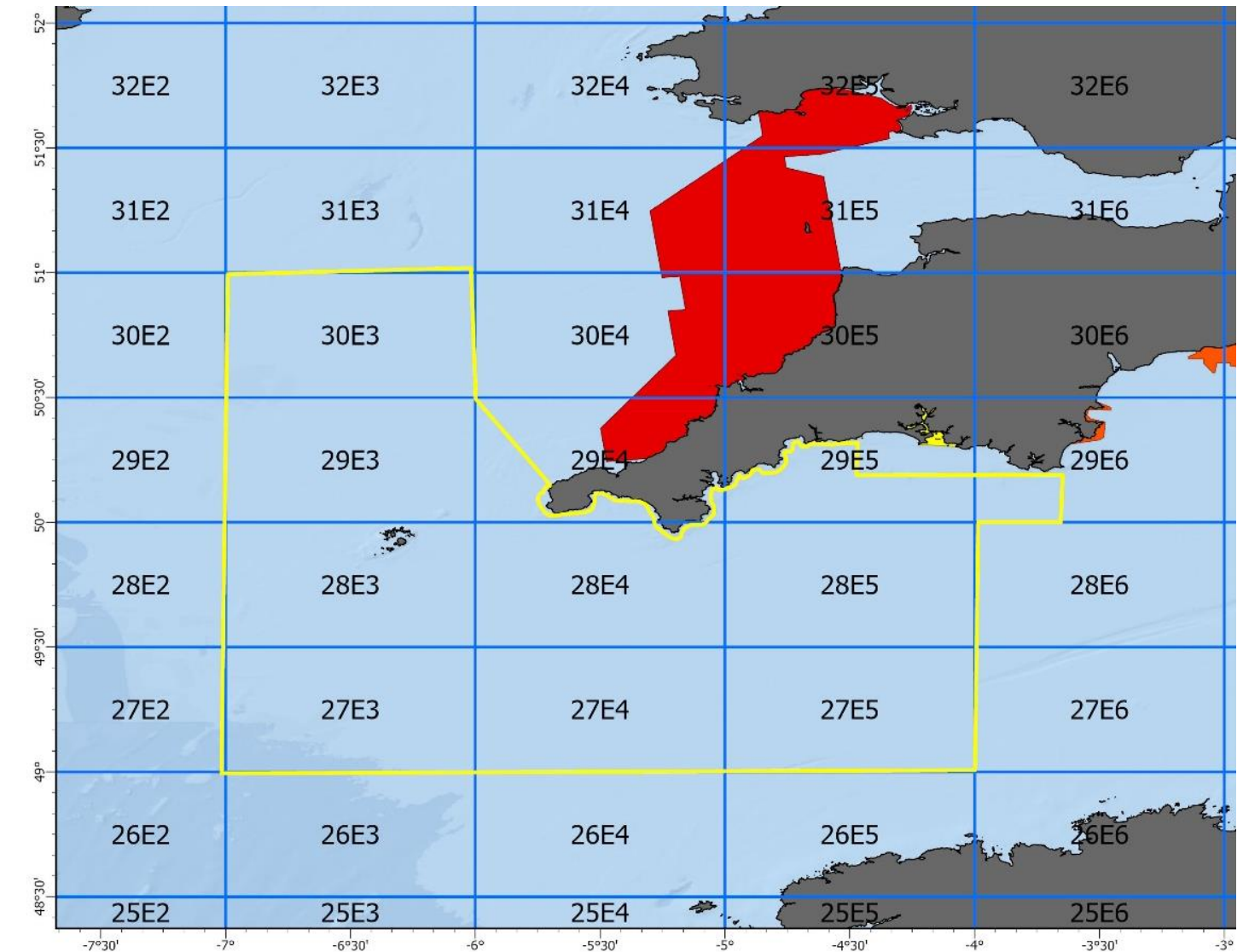
» Evaluate if Banana pingers reduce common dolphin bycatch

» 10 participating vessels

- All vessels have REM systems installed
- Skippers also self-report via mobile application

» REM setup

- 1 camera per vessel



Data collection

» Footage from all hauling events reviewed

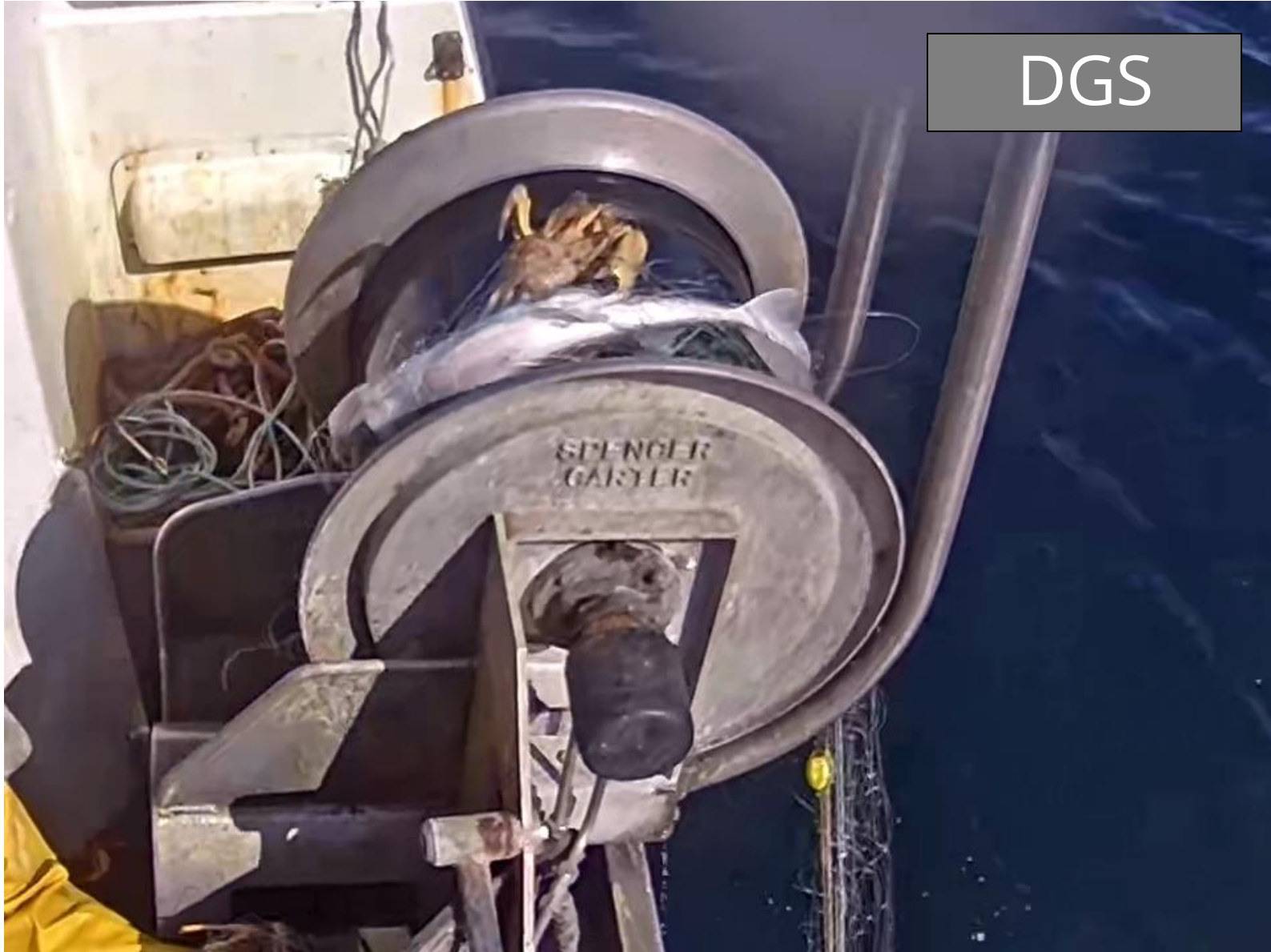
- Bycatch of sensitive species
- Presence / Absence of pingers

» Species list

- Cetaceans
- Seals
- Seabirds
- Sharks
- Skates and rays



Data collection



Data application and use



Evaluate the effectiveness of banana pingers in reducing common dolphin bycatch



ICES data call for bycatch assessment



Learning how to use REM affectively



AI training image library



Artificial Intelligence and REM



AI has the potential to reduce the review burden of REM



This is particularly important where 100% review coverage is needed



AI is not “plug and play” it requires training and development



Challenges and Approaches

» Sensitive species bycatch is a challenge

- Rare events
- Condition of caught species hinders ID further
- Sensitive information – image sharing

» Potential approaches

- Direct bycatch ID
 - Collaboration needed
- Anomaly detection
 - Final step requires manual input



Summary



Data collection with REM is a multi-step approach.



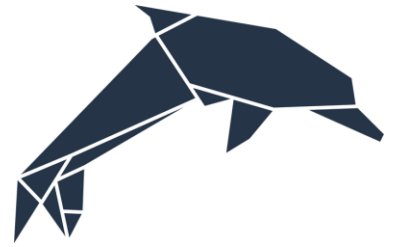
Input, acceptance and compromise is needed for industry and data collectors/scientist.



Flexibilities REM offers, and its data outputs could be really valuable.




AI has the potential to help, but still needs developing.





Use of REM in the EEFPPO Whitefish Trial



Joanna Murray
Cefas

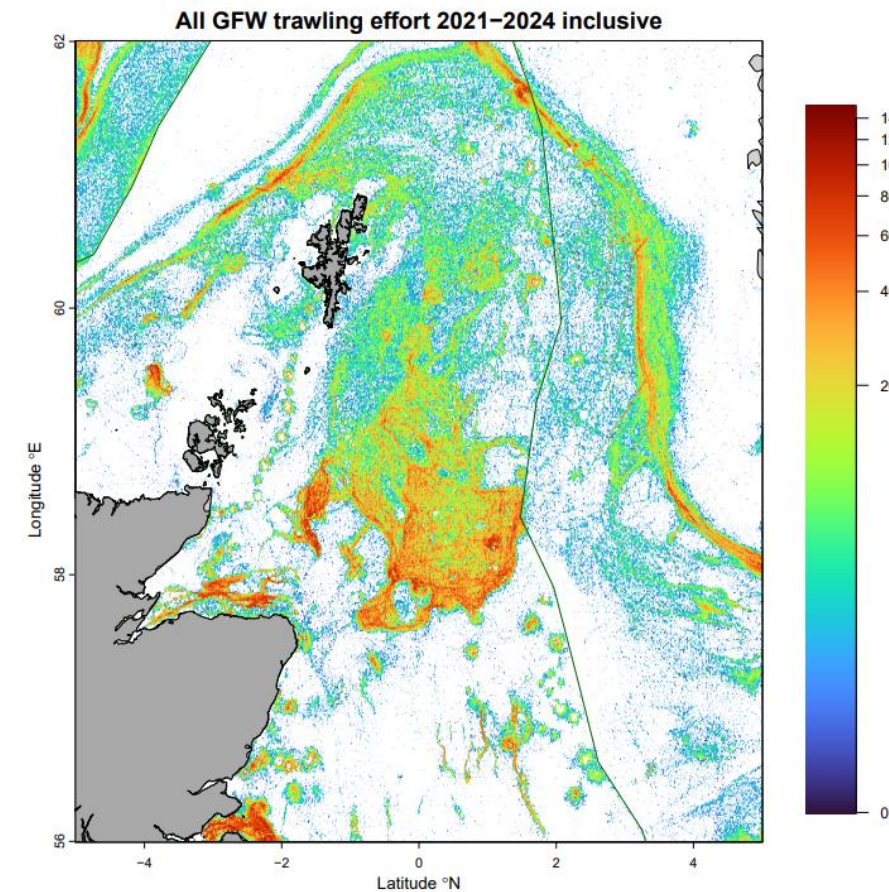
Whitefish trial reminder

» Partnering with EEFPPO and two member fishing companies

- P&J Johnstone and Lockers Trawlers operating out of Peterhead
- 1 trawl vessel and 8 pair trawl vessels within the mixed whitefish fishery: fishing for cod, haddock, saithe etc.

» Seabird bycatch and interactions

- Developing the seabird bycatch evidence base for this fishery
- Monitoring interactions with trawl warps and bycatch in the cod end



Donal O'Driscoll

Remote Electronic Monitoring

» Systems

- Anchor Lab – Black Box Lite system
- Cameras installed on 8 vessels (4 pairs)
- **Camera X 3:** 1 viewing the warps, one viewing stern of vessel to view shooting/hauling, 3rd of the net where birds removed.
- Belt sensors installed to indicate when fish processing is taking place.
- Systems begin recording when vessels are powered on.
- Data transferred when in phone signal.



SKIPPER SELF REPORTING

	D	E	F	G	H	I	J	K	L
1	- 1 line per bycatch species - Record all hauls - both with and without sensitive species bycatch				Validity scale				
2					Good:		alive, active and strong, survival on release likely		
3					Poor:		alive but sluggish, weak or injured, survival uncertain		
4					Dead:		no movement or signs of life		
5									
6									
7									
8	Haul End Time	Start Depth (m)	End Depth (m)	Tow speed (knots)	Bycatch Species	Count Good	Count Poor	Count Dead	Notes
19									
20									
21									
22									

- Self-reporting: data all pairs, single
- Skipper self reporting helps us match bycatch events to REM for validation.



DATA COLLECTION: PROTOCOLS

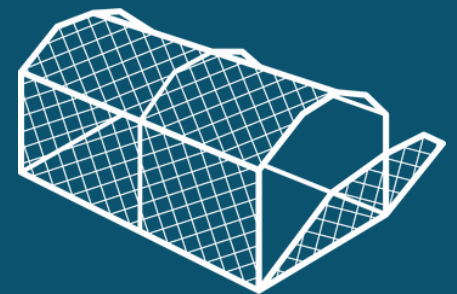
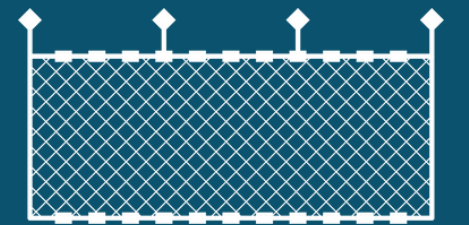
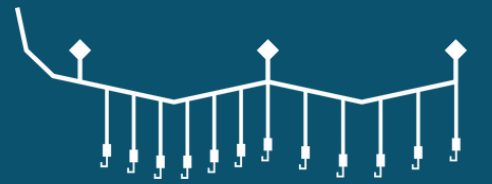
» REM

- Keep cameras clean
- Report any technical issues to the FLO as soon as possible



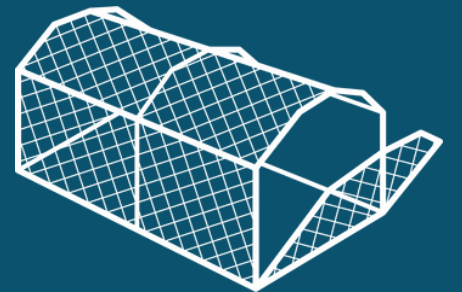
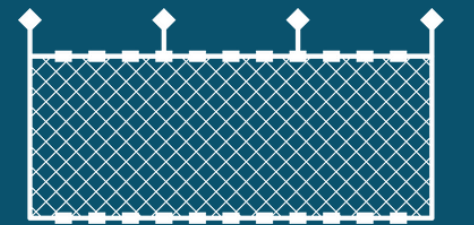
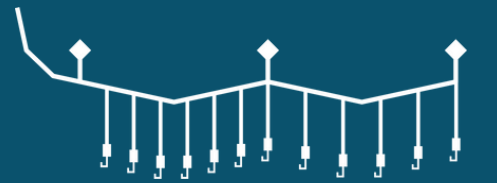
» SKIPPER SELF-REPORTING

- Submit paper/electronic record sheets to the FLO after each fishing trip or as soon as possible
- Report any issues to the FLO



DATA CAPTURED

- » **Monitoring seabird bycatch in the cod end = relatively simple**
- » **Monitoring interactions with the warps = harder**
- » **Considerations for resource (& budget), what's currently possible within operational challenges e.g., species ID, and how we will use the data.**



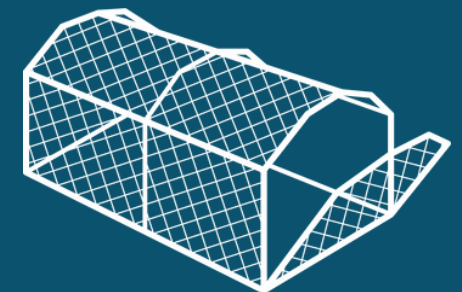
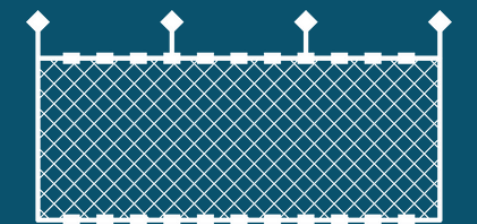
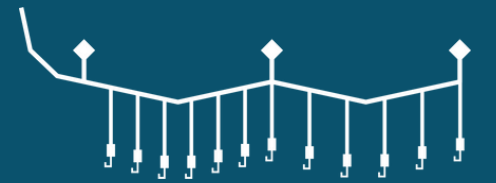
DATA CAPTURED

» METADATA

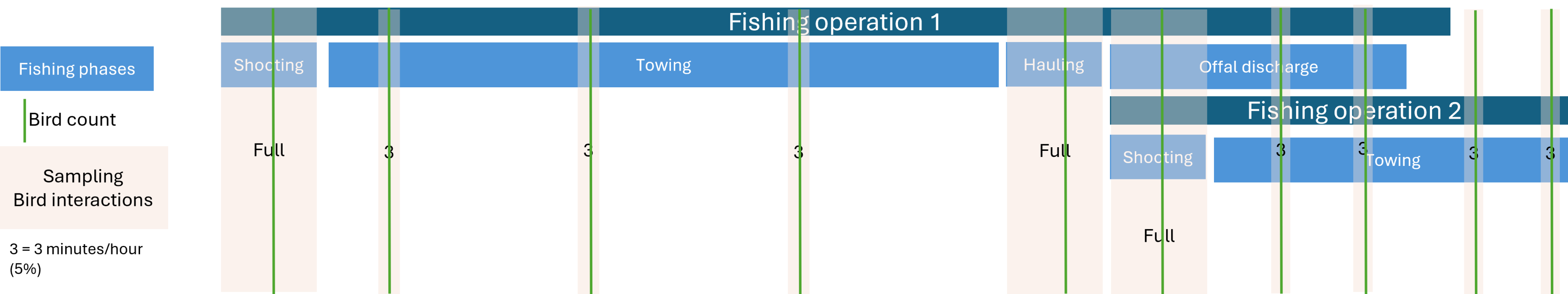
	DESCRIPTION
Vessel_ID	Unique vessel identifier
Trip_ID	Unique Trip identifier
FishingActivity_ID	A common identifier for associated Shooting, Towing and Hauling operations
TripStart	DateTime start Trip
TripEnd	DateTime end Trip
Fishing_operation	Types of operations (Shooting, Towing, Hauling)
Start_Activity	DateTime start of operation
End_Activity	DateTime end of operation
Start.latitude	
Start.longitude	
End.latitude	
End.longitude	
Sea_state	WMO sea state code
DayNight	Day/Night
Offal_Discharge	During Offal Discharge phase (Yes/No)

» SEABIRD BYCATCH

	DESCRIPTION
Vessel_ID	Unique vessel identifier
Trip_ID	Unique Trip identifier
FishingActivity_ID	A common identifier for associated Shooting, Towing and Hauling operations
CatchDateTime	DateTime of catch
Species	
Age_class	
Vitality	State of catch
Outcome	E.G. released from capture
Notes	Comment related to the catch
Catch_ID	Unique catch identifier (Species + CatchDateTime + Vessel_ID + FishingActivity_ID)



FISHING OPERATION: WARP INTERACTIONS



Approx. time for shooting = 12.5 mins

Approx time for towing = 3hrs 48 mins

Approx time for hauling = 30 mins

* Based on pair trawls observed by BMP, will be variable.

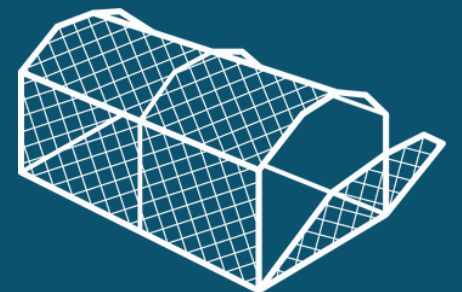
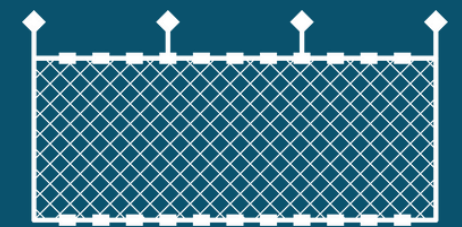
DATA CAPTURED

» WARP INTERACTIONS

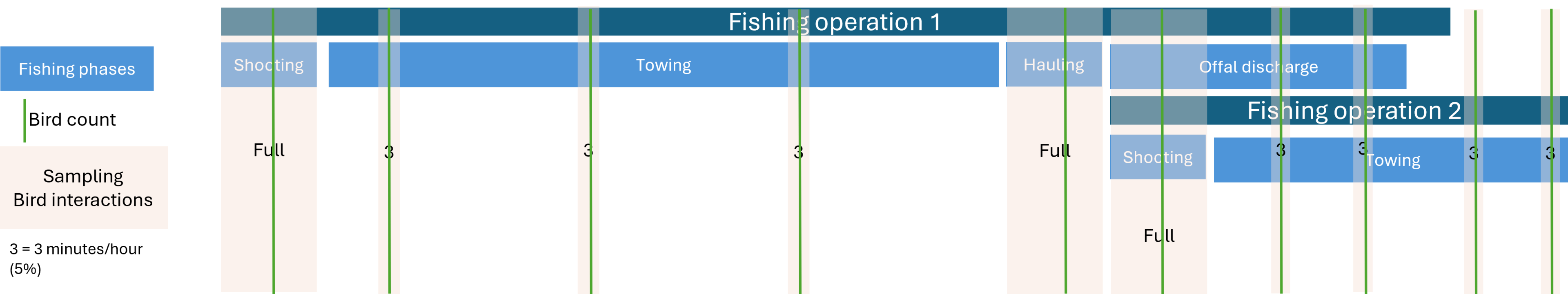
	DESCRIPTION
Vessel_ID	Unique vessel identifier
Trip_ID	Unique Trip identifier
FishingActivity_ID	A common identifier for associated Shooting, Towing and Hauling operations
Interaction_ID	Unique Interaction identifier (FishingActivity_ID + DateTime + Vessel_ID)
Fishing_operation	Types of operations (Shooting, Towing, Hauling)
DateTime	DateTime of warp interaction
Species	
Age_class	
Interaction_type	Types of interaction
Contact_point_outcome	State of catch after interaction
Severity	Severity of interaction
Offal_Discharge	During a Offal Discharge phase (Yes/No)

» TOW SAMPLES

	DESCRIPTION
Vessel_ID	Unique vessel identifier
Trip_ID	Unique Trip identifier
FishingActivity_ID	A common identifier for associated Shooting, Towing and Hauling operations
Tow_Sample_ID	Unique Sample identifier (FishingActivity_ID + S + number of sample)
Tow_Sample_Start_Time	DateTime start sample
Tow_Sample_End_Time	DateTime end sample
Offal_Discharge	During Offal Discharge phase (Yes/No)



FISHING OPERATION: WARP INTERACTIONS



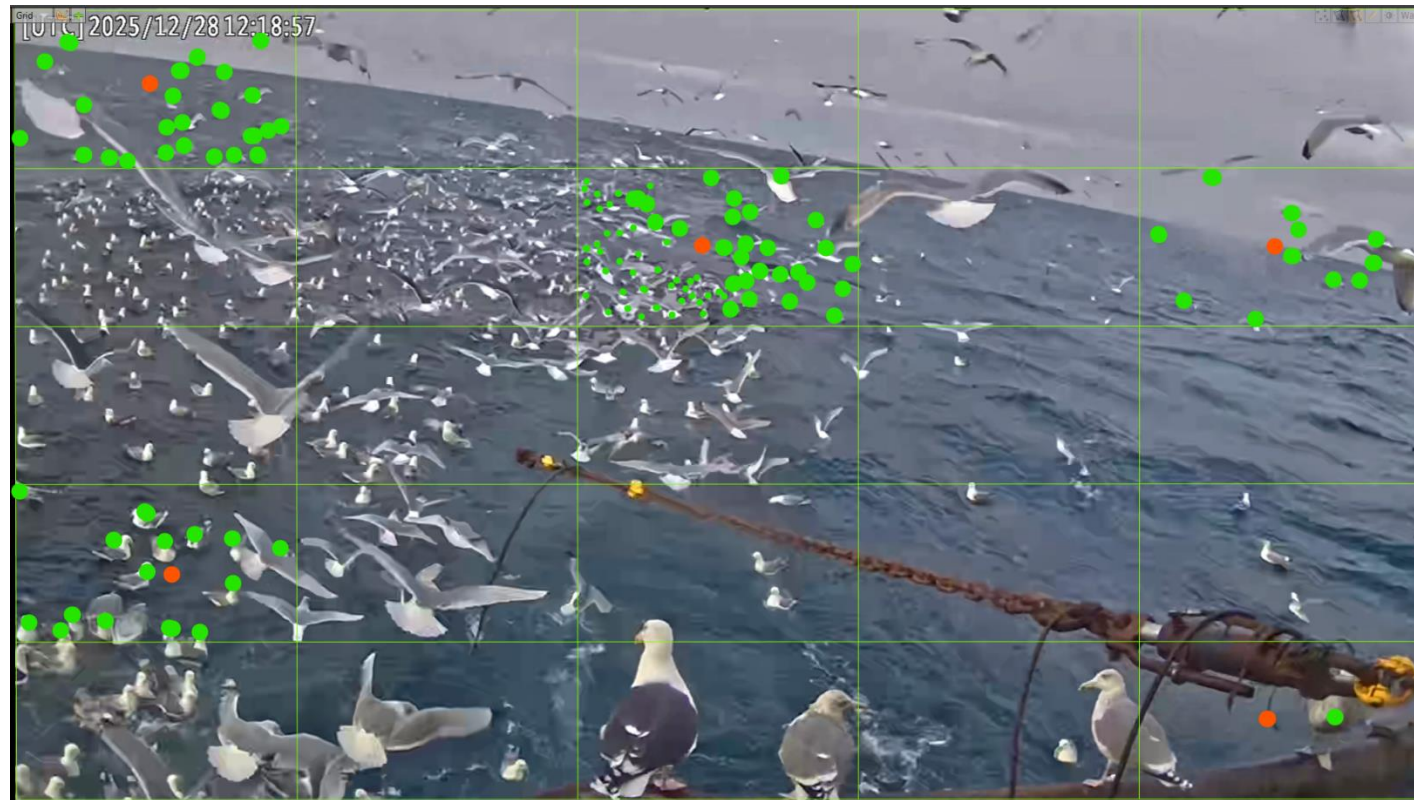
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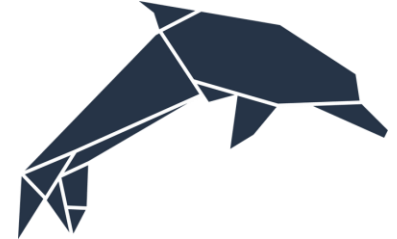
DATA CAPTURED: POPULATION ESTIMATE



- Grid sampling is applied only when there is over 100 individuals in the freeze-frame.
- If under 100, the reviewer will count all birds in the frame.
- Conduct bird counts in the middle of shooting and hauling operations.
- Conduct total bird count only on freeze frames and record presence/ absence of different species.

* 5 squares selected at random

MONITORING DATA COLLECTION



FEEDBACK


» Are we missing anything?

» Does our approach make sense?





AOB & Closing Remarks



Rob Whiteley
Defra, NAB Chair

» AOB & closing remarks

- Suggestions for future NAB meetings:
 - Format & style - has today's format been useful?
 - Topics
- Email us with any further thoughts/questions on today's discussion items

