



Scottish Government
Riaghaltas na h-Alba

Marine Directorate

Solway Lobster Derogation Project

Interim Measures Review Stakeholder Event

Edinburgh

05th March 2025

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Solway_purple - Haul 3

Sampling of lobster landings

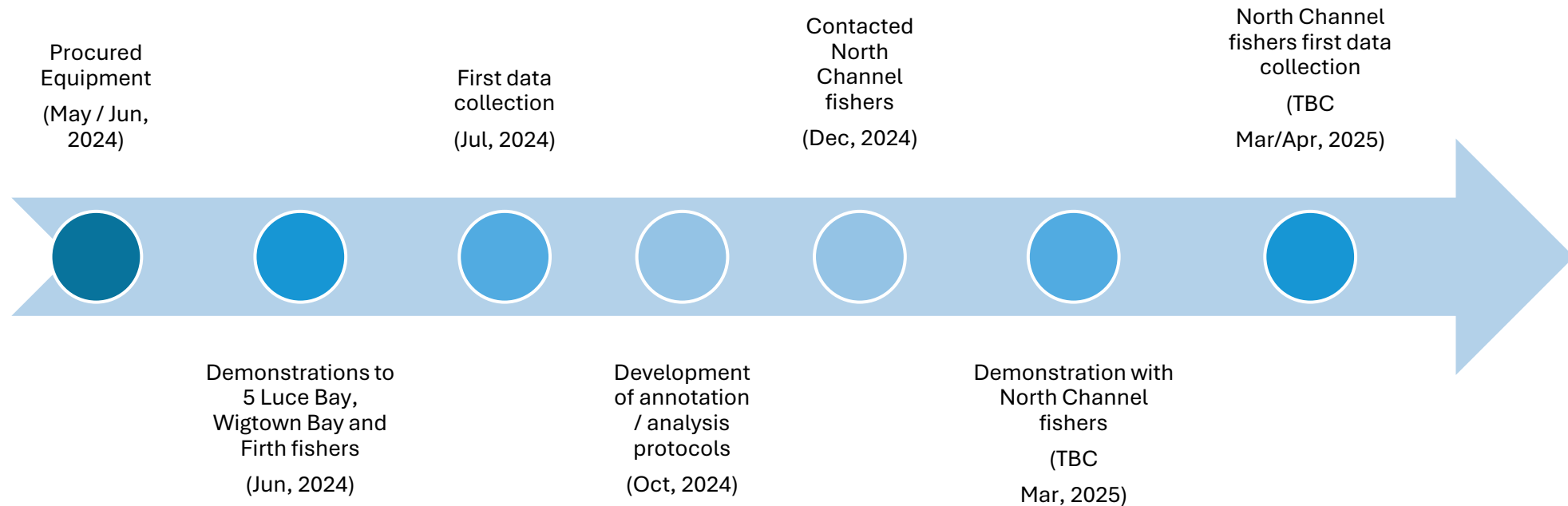
- Quarterly sampling by Marine Directorate scientific staff
- Complemented by monthly sampling by WCRIFG chair



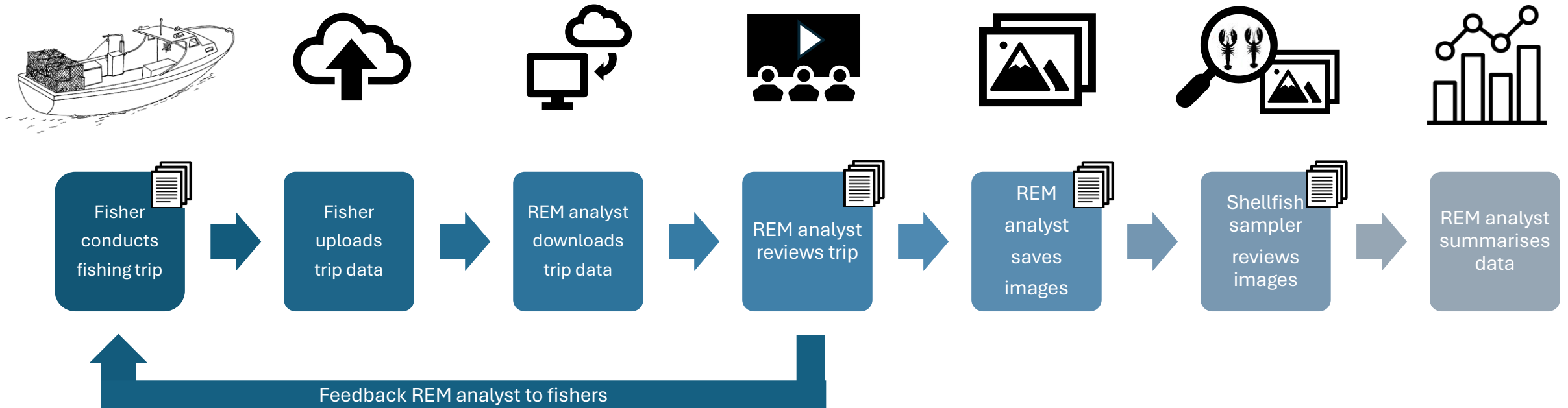
Rota Trip ID		Sampling Scheme	SHELLFISH		Sampling Stratum	
Visit Date	00/01/1900	Visit Start Time	00:00:00	Site		FMD ID
Vessel	0	PLN		Gear	F P O	Mesh
Species	Lobster	L	O	B	Cat	
PortLanded				Area		StSq
Target	C	R	U			


Category						Category						Category								
Wt Landed (Kg)						Wt Landed (Kg)						Wt Landed (Kg)								
Wt Sampled (Kg)						Wt Sampled (Kg)						Wt Sampled (Kg)								
	Male	Tot	Female	Tot	Ovlg	Tot		Male	Tot	Female	Tot	Ovlg	Tot		Male	Tot	Female	Tot	Ovlg	Tot
	mass		mass		mass			mass		mass		mass			mass		mass		mass	
70							110							150						
71							111							151						
72							112							152						
73							113							153						
74							114							154						
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85							125							165						
86							126							166						
87							127							167						
88							128							168						
89							129							169						
90							130							170						
91							131							171						
...												

Project timeline – REM data collection



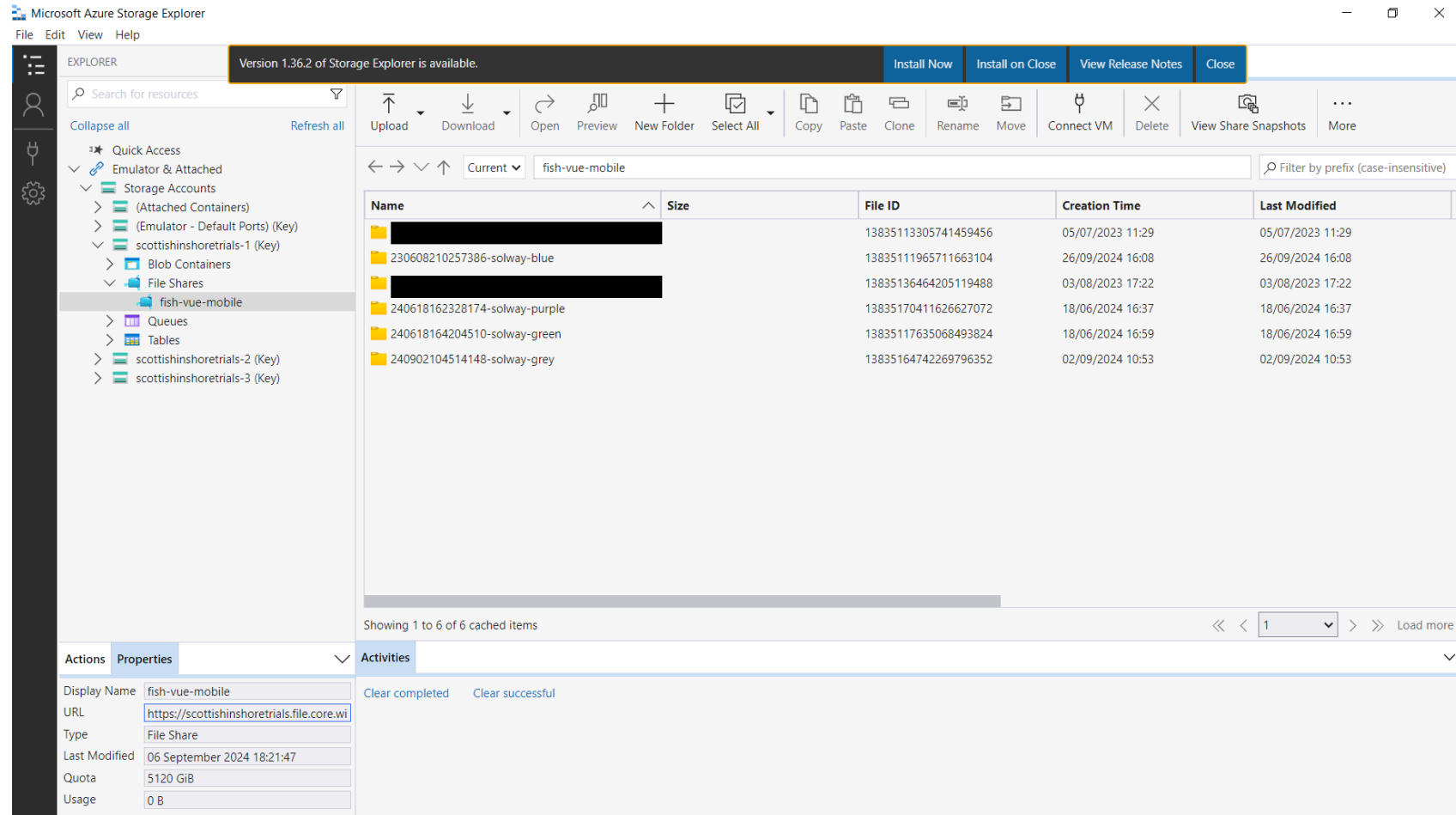
Project workflow – REM data collection



 Supported by project specific documentation; trip requirements, analysis protocols, **vessel monitoring plans**, data protection and privacy notices

Azure Cloud Storage

- Fishers upload their sensor and video data from their tablet to the Azure storage cloud
- REM analyst downloads the data and transfers to FishVue for annotation
- Trips – video and sensor deleted from the cloud weekly



The screenshot displays the Microsoft Azure Storage Explorer interface. The left sidebar shows a tree view of storage accounts, with 'fish-vue-mobile' selected under the 'File Shares' section. The main pane shows a list of files with columns for Name, Size, File ID, Creation Time, and Last Modified. The files are listed as follows:

Name	Size	File ID	Creation Time	Last Modified
[REDACTED]	[REDACTED]	13835113305741459456	05/07/2023 11:29	05/07/2023 11:29
230608210257386-solway-blue	[REDACTED]	13835111965711663104	26/09/2024 16:08	26/09/2024 16:08
[REDACTED]	[REDACTED]	13835136464205119488	03/08/2023 17:22	03/08/2023 17:22
240618162328174-solway-purple	[REDACTED]	13835170411626627072	18/06/2024 16:37	18/06/2024 16:37
240618164204510-solway-green	[REDACTED]	13835117635068493824	18/06/2024 16:59	18/06/2024 16:59
240902104514148-solway-grey	[REDACTED]	13835164742269796352	02/09/2024 10:53	02/09/2024 10:53

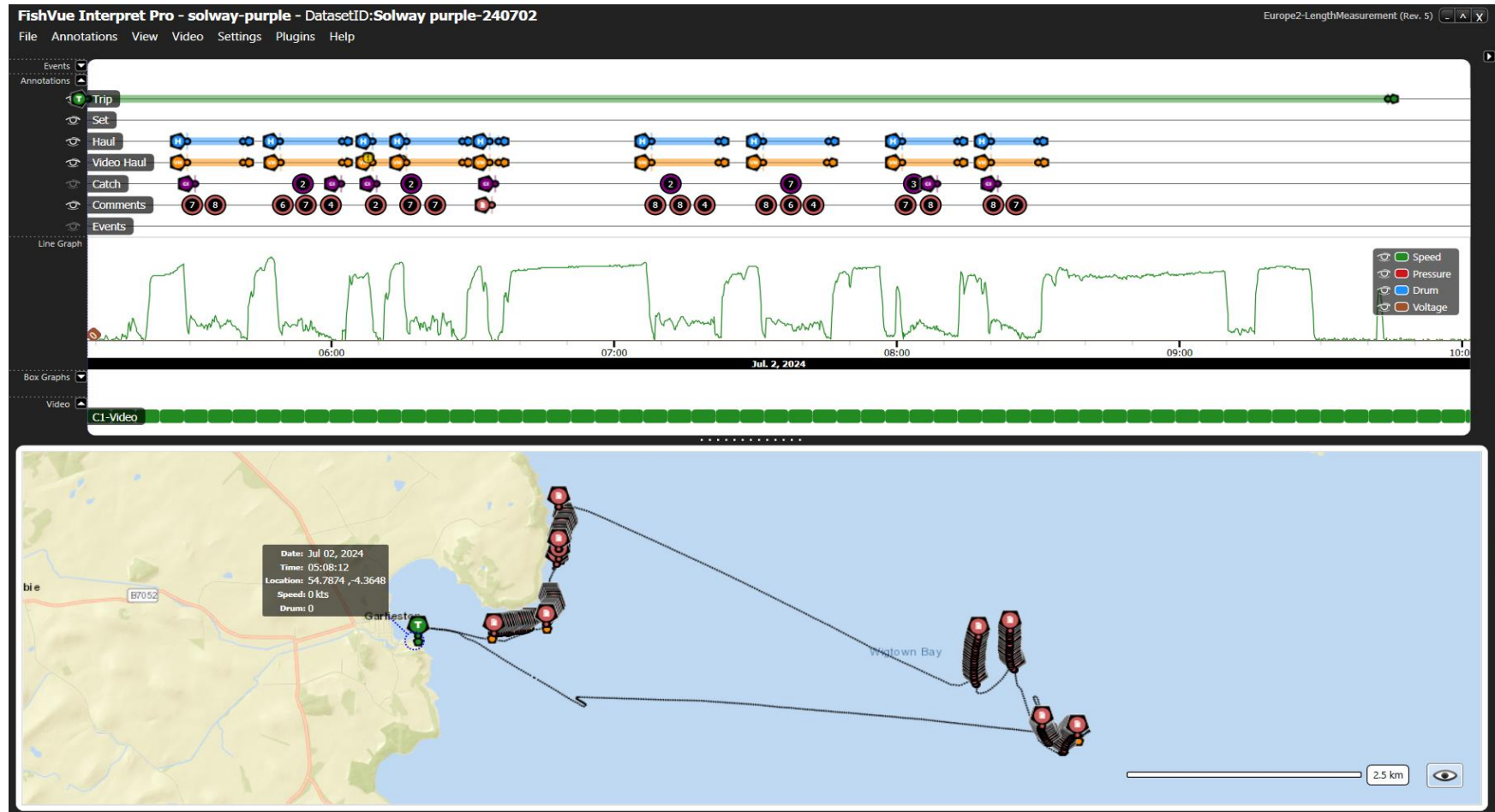
Below the file list, the 'Properties' tab is active, showing details for the selected file share:

- Display Name: fish-vue-mobile
- URL: <https://scottishinshoretrials.file.core.wi>
- Type: File Share
- Last Modified: 06 September 2024 18:21:47
- Quota: 5120 GiB
- Usage: 0 B

The 'Activities' pane at the bottom shows 'Clear completed' and 'Clear successful'.

FishVue Interpret Pro– Annotation tool

- Annotations – Trip, Hauls within the trip, video of fishing activity within a haul
- Within each ‘video haul’ we can record the ‘Catch’, when a lobster is kept/retained
- We can also record when a creel pot is hauled. This gives us the number of creels brought aboard within that haul
- A GPS map of the fishing track and positions



Field of View

- Variety of views
- Preference to see creels come aboard
- Requirement for lobsters to be in view from removal from creel to presentation to camera

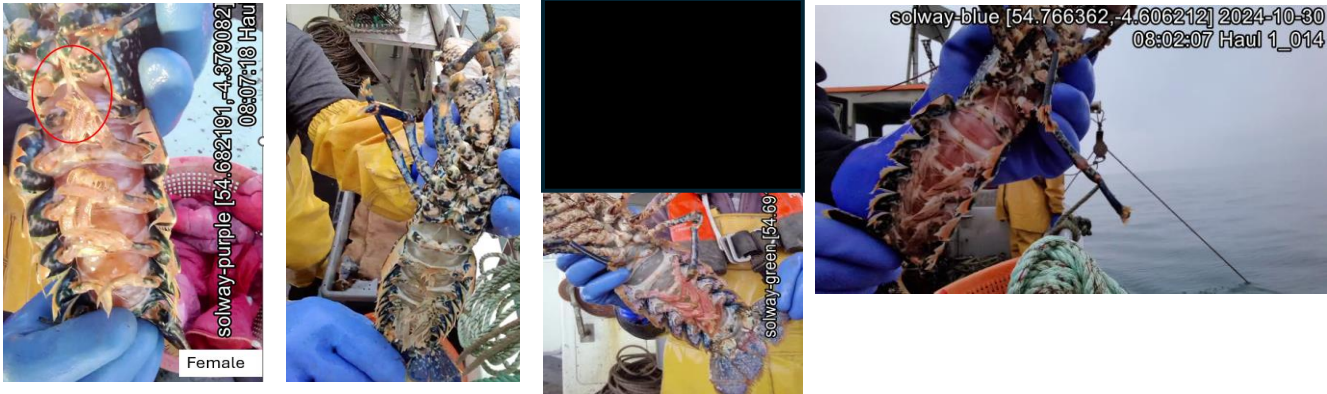


Lobsters – Male, Female and Berried example images

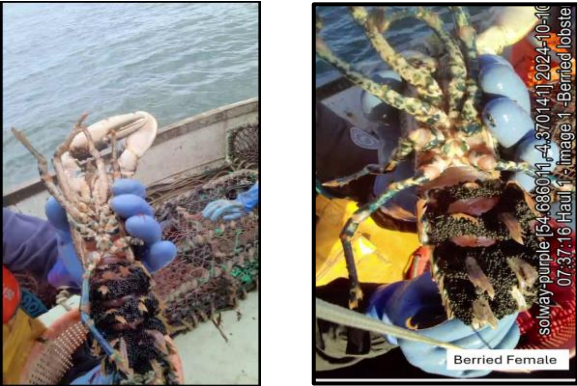
Males



Females



Berried



Poor quality image examples

Camera obscured



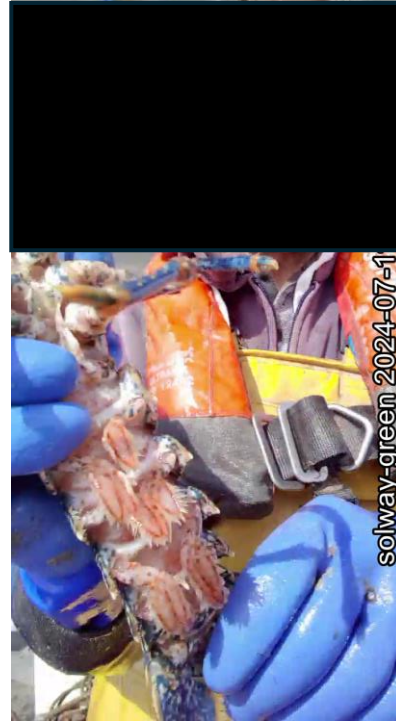
Lighting too dark



Hands over appendages



Only partially presented

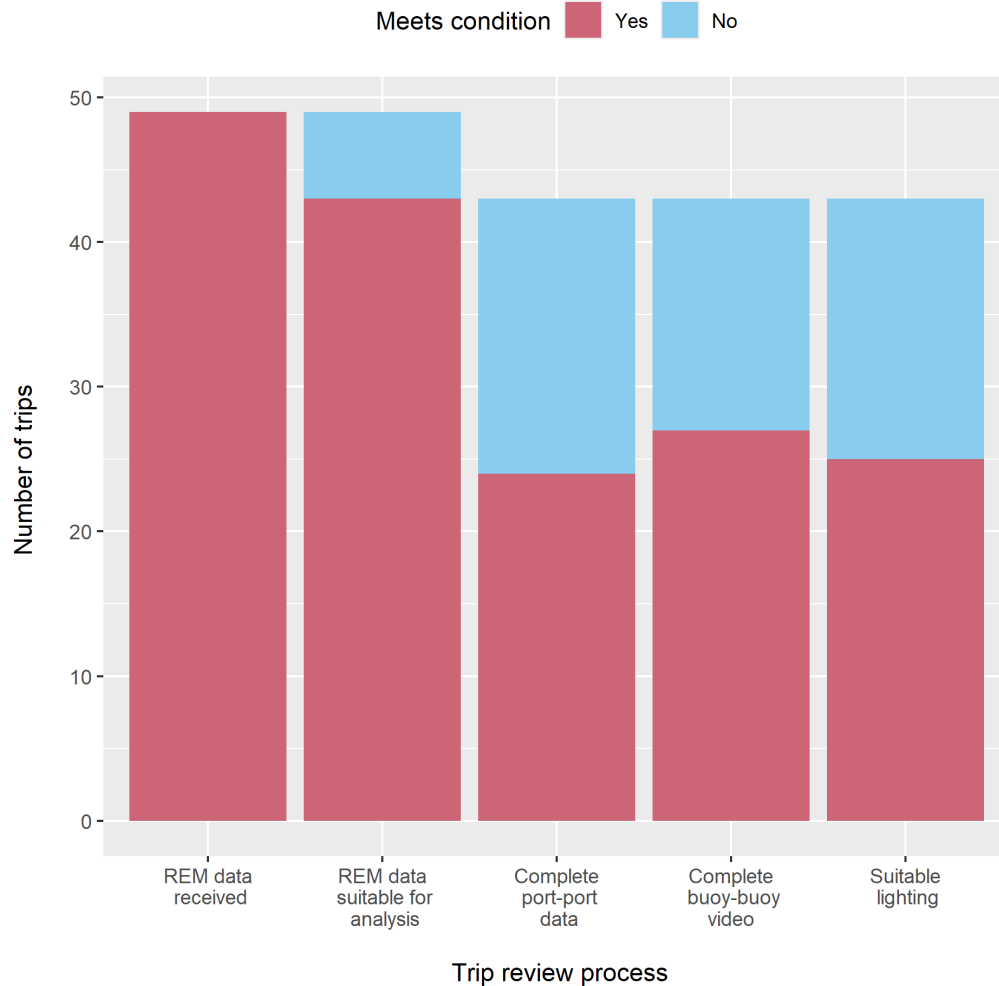


Not presented as required



***[Recommending greater adherence with requirements]
[New requirements: clearer handling of returned lobsters]***

REM data received so far in trial



49 trips for which REM data received

43 suitable REM data to enable analysis (i.e. sensor + video)
 - Equipment failure, Analyst Error

19 trips not recorded Port-Port
[Recommending greater adherence with requirements]

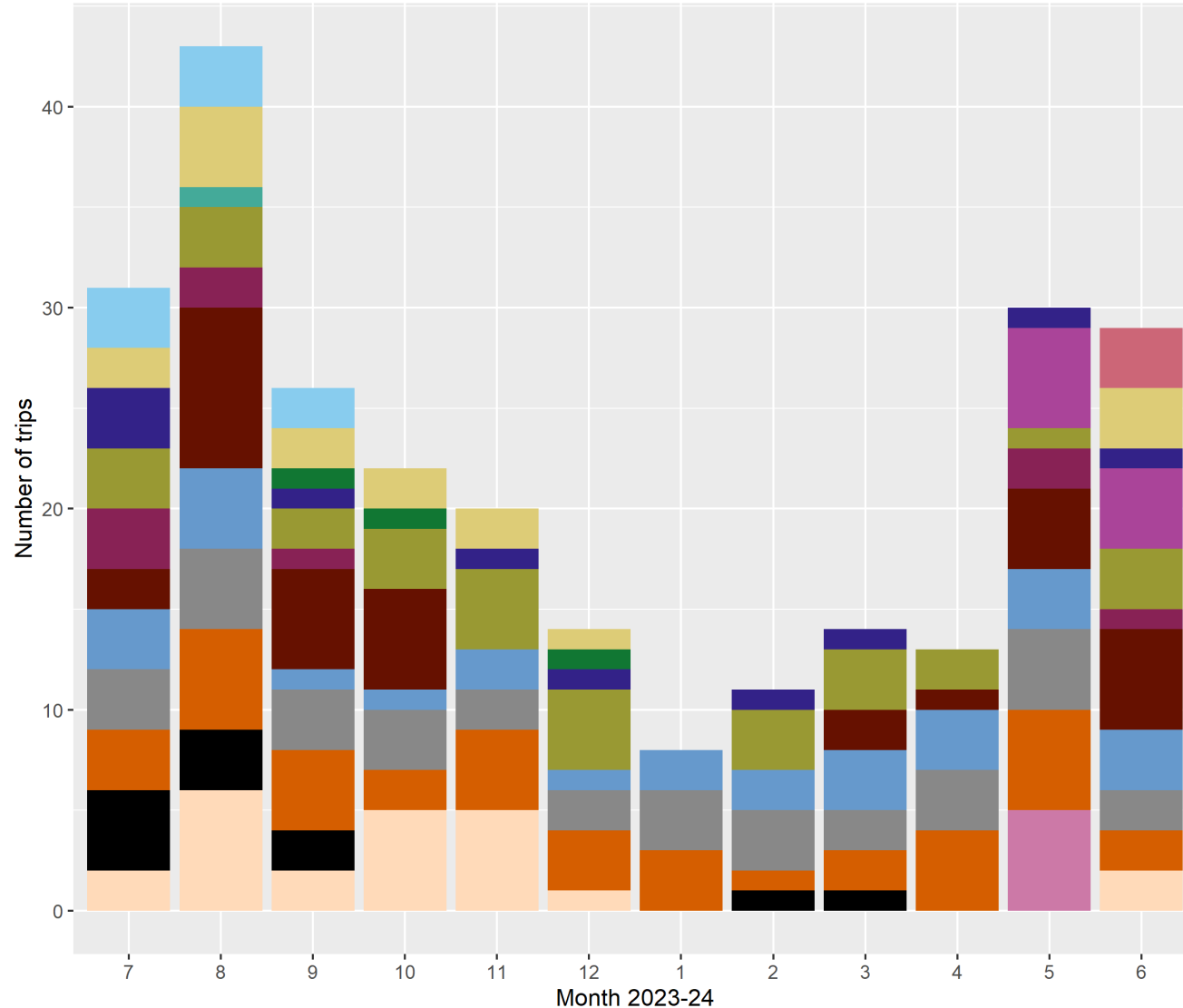
16 trips not recorded buoy-buoy for all hauls
[Recommending greater adherence with requirements]

18 trips with at least one haul in darkness

Of approx. 421 hauls
 - 19 hauls not buoy-buoy
 - 18 hauls affected by darkness
[Considering recommendations]

Potential number of trips – baseline data

This is the number of trips by month for all derogated vessels in the 12 months prior to the first REM data collection (Jul, 2024) as an indicator of the number of possible trips



Average 3 trips per month per vessel

With 4 tablets...
Max 12 trips per month

Vessel

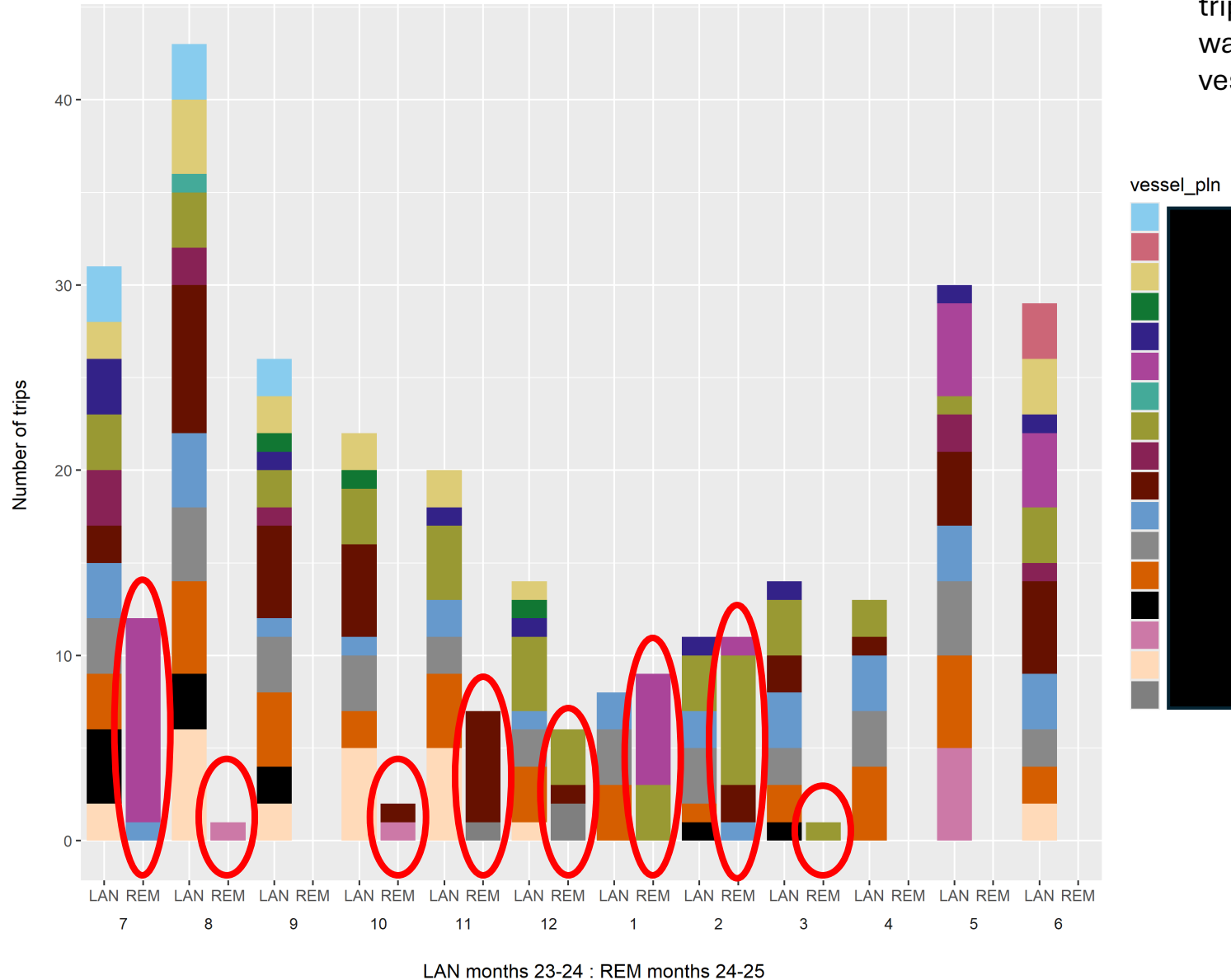


Realised number of REM trips – compared to baseline

This is the same figure as the previous slide with the addition of the number of trips by month that REM data was collected for derogated vessels

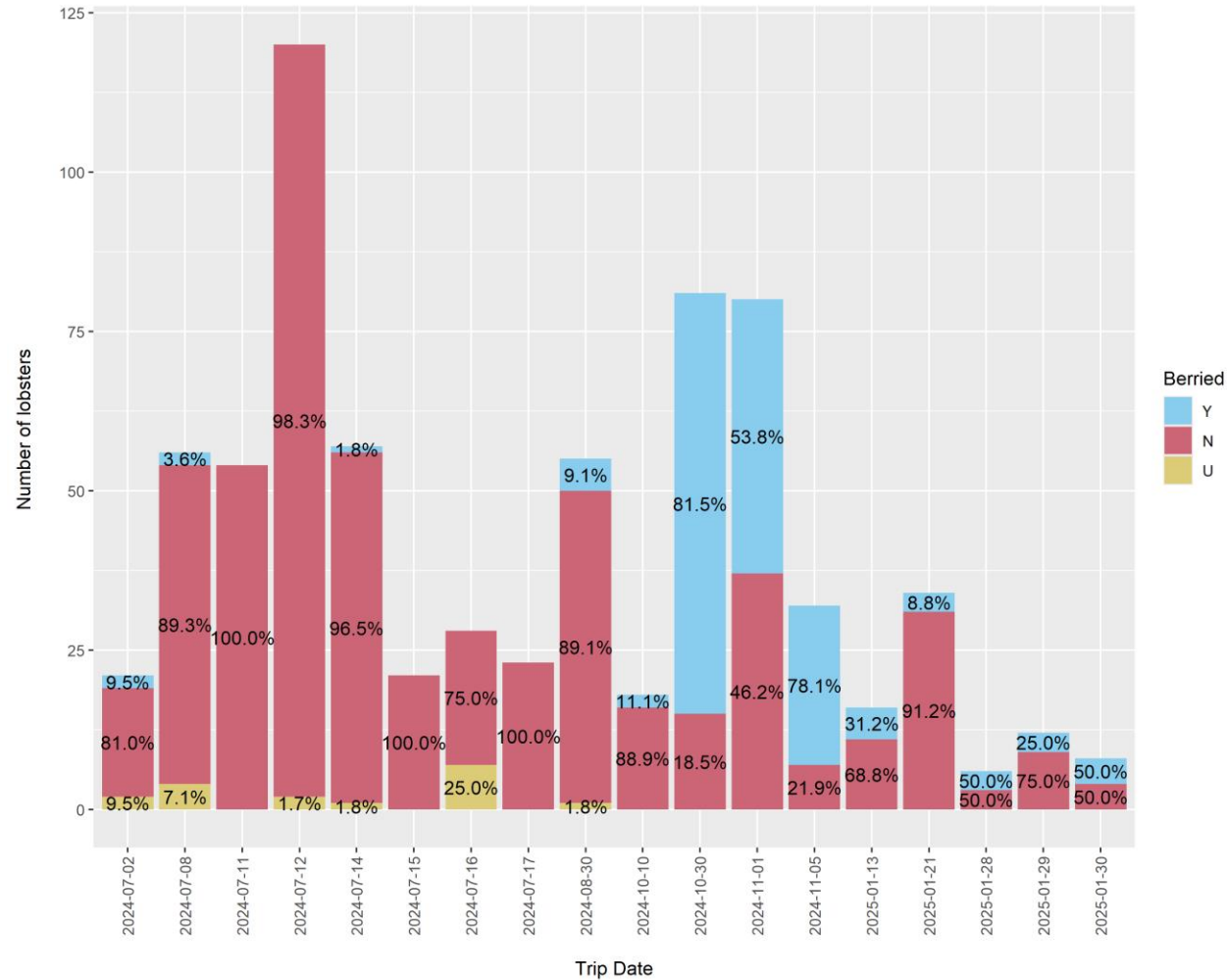
Using last year's data as a baseline the achieved sampling coverage is:
 Jul: 39%
Aug: 2%
Sep: 0%
 Oct: 9%
 Nov: 35%
 Dec: 43%
 Jan: 125%
 Feb: 100%

This data will inform discussions around whether to extend the trial



LAN months 23-24 : REM months 24-25

Preliminary results – proportions berried



Data is **provisional** and represents ~35% of available trips

Increase in berried lobsters from August

“U” unknown due to lobsters not being shown to cameras correctly or out of field of view, blurred image or in darkness

Recent overlap (11-13th February) in data collection between REM tablets and shoreside sampling programme, generated comparable berried proportions 27% and 56% for REM ~30-50% shoreside

Supports REM being a reliable tool to meet needs of trial

Equipment / costs - hardware

Category	Item	Quantity	Unit Price (£)		Being utilised (£)
Tablets	Tablets (Samsung Galaxy Tab Active 3)	4	350-420		1,540
	Tablets (Samsung Galaxy Tab Active 5)	1	510		-
Mounting accessories	Rail ball base	12	25-31		225
	Double arm sockets Short (with round ball plate)	2	36		72
	Double arm sockets Medium (with round ball plate)	6	39		234
	Double arm socket (without ball)	3	22-26		22
	Holder	4	34		136
	<i>Round plate with ball</i>	5	16		-
	<i>Backing plate</i>	3	10		-
Care accessories	Port plugs (USB-C, earphone)	~	15		15
	Security pen	2	3		-
	Tablet cases (soft)	4	9		36
Data accessories	USB Flash drive 256GB	1	22		-
	USB Flash drive 512GB	2	38		76
Totals					2,356

Costs of Archipelago FishVue Hardware to support ad-hoc research **are low**, as demonstrated by inventory costs and project costs

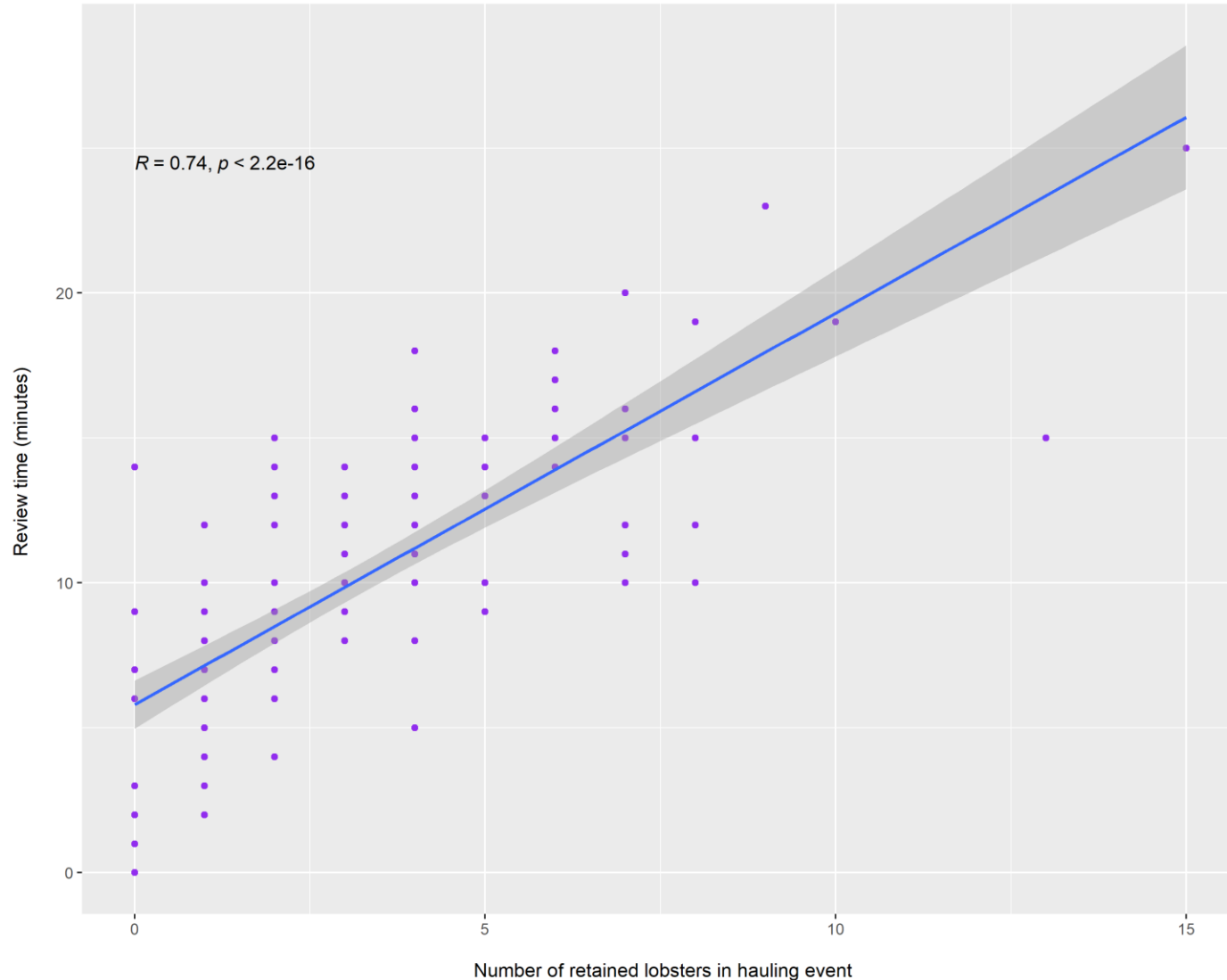
Equipment / costs – licenses and data transmission

Category	Item	Quantity	Unit Price (£)	
Licenses	FishVue Interpret License (Analysis Software)	1		
	FishVue Mobile License Annual (Data collection / transmission) NEW COST	3		
	FishVue Mobile License Monthly (Data collection / transmission) NEW COST	1		
Totals				

Software costs are higher than hardware **but still low** relative to other data collection methods

Total project **equipment costs** projected to be <£10,000 of which ½ equipment which will be retained by MD

Video analysis review time



Review time most correlated with the number of retained lobsters, closely followed by number of creels

Up to 25 minutes per haul, average 10 minutes

2-24 hauls per trip, average 10 hauls

Estimate 2-3 hours to 'annotate' per trip

Additional time to download, check and delete REM data from the cloud and populate spreadsheets with trip information and individual lobster information

Take away messages

- REM well suited to meet this project objectives
 - Visual verification of berried status relatively easy
- Fishers' experiences, technological aptitude and adherence to catch handlings is variable
 - Requires willing and communication
- REM offers clear benefits comparable to shoreside sampling in terms of coverage
- However, resource intensive for project administration and video review

Next steps

- Continued data processing and analysis
- Project update and catch handling requirements refresher with fishers
- Onboarding of north channel fishers

