Evaluation of Behaviour Change from Natural England's ReMEDIES Project

The LIFE Recreation ReMEDIES: 'Reducing and Mitigating Erosion and Disturbance Impacts affecting the Seabed' project

March 2025

Natural England Commissioned Report NECR611

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Catalogue code: NECR611

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Keywords

Special Areas of Conservation, SAC, Essex Estuaries, Solent Maritime, Plymouth Sound and estuaries, Falmouth & Helford, Isles of Scilly, seagrass, seabed, recreational boaters, anchoring, mooring, interpretation panels, Voluntary No Anchor Zone, VNAZ, Advanced Mooring Systems, AMS, eco moorings

Acknowledgements

Ocean Conservation Trust, Marine Conservation Society, Royal Yachting Association and Plymouth City Council/TECF

Citation

Boot, M.J., Montgomery, L., Durkacz, S., Szinay, D. 2024. Evaluation of Behaviour Change from Natural England's ReMEDIES Project. *Natural England Commissioned Report* NECR611. Natural England.

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Foreword

As part of the LIFE Recreation ReMEDIES project (LIFE 18 NAT/UK/000039), Natural England commissioned an evaluation to try to measure the behaviour change outcomes of the project. This report is a key deliverable of the ReMEDIES project.

It is difficult to measure behaviour change in practice and attribute any change to specific interventions (there is limited information or control over external factors influencing change in addition to project actions). It is also very difficult to distinguish between reported or intended behaviour change and actual change in practice on the ground. Although there were some significant limitations with data collection due to resource and capacity within the ReMEDIES project team, results do suggest the ReMEDIES project helped to increase the capability, opportunity and motivation of at least some recreational boaters to protect the seabed. However, as outlined in the conclusions, it is not possible to attribute all the reported positive changes in awareness, attitudes and reported behaviour to the ReMEDIES project.

This report will be of interest to any projects engaged in similar work on behaviour change and measuring the impact of interventions. It provides useful examples on the methodology and evaluation approach.

A separate Technical Information Note '*Lessons from evaluating behaviour change interventions -A case study of the LIFE Recreation ReMEDIES project'* has also been produced by Natural England staff which explores in more detail the challenges of measuring behaviour change in real life settings and provides useful discussion to help support future projects.

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Working in Partnership with:

ReMEDIES

Executive summary

The EU LIFE ReMEDIES 'Reducing and Mitigating Erosion and Disturbance Impacts affecting the Seabed' (LIFE 18 NAT/UK/000039) project took place from 2019 – 2024. It aimed to change the behaviour of recreational boaters and reduce recreational pressures on seagrass habitats in five Special Areas of Conservation: Essex Estuaries; Solent Maritime; Plymouth Sound and Estuaries; Falmouth & Helford; Isles of Scilly. Natural England was the lead partner, they worked closely with project partners including the Ocean Conservation Trust (OCT), Marine Conservation Society (MCS), Royal Yachting Association (RYA) and Plymouth City Council/Tamar Estuaries Consultative Forum (TECF) to deliver ReMEDIES.

Powellite Impact Ltd was commissioned by Natural England in October 2023 to undertake an evaluation to understand the extent to which the ReMEDIES project led to behaviour change.

We completed desk research into monitoring data collected by Natural England and project partners and conducted 32 interviews with project partners, local team members, boaters and volunteers across the five ReMEDIES sites. We conducted a survey for recreational boaters which was completed by 221 boaters across the UK; 82% of survey respondents reported they had been boating in one or more of the five ReMEDIES areas.

We explored the behaviour change related effects of the ReMEDIES activities and mapped the findings against the three essential components of the COM-B behavioural change model: Capability, Opportunity and Motivation - Behaviour (**Figure 1**).

Capability: Have ReMEDIES interventions helped to raise awareness and knowledge relating to protection of the seabed?

ReMEDIES interventions ranged from interpretation panels, boating and school workshops and training on anchoring practices to national messaging. The RYA delivered 28 webinars and informal training sessions, directly engaging with around 1,700 people.

82% of boaters (150 out of 183) who attended training and completed the feedback form, reported increased awareness of anchoring best practice. In the 2021 survey, 38% (56 out of 147) respondents said they had never looked to see if there was seagrass where they planned to anchor and 54% (80 out of 147) reported they looked to see if there was seagrass where they planned to anchor, whilst in the 2024 survey only 16% (29 out of 182) of respondents said they never looked up information to find out about the location of seagrass and 84% (153 out of 182) respondents reported using a range of sources for locating seagrass. This evaluation indicates an increase in the awareness and understanding of the importance of protecting and avoiding ecologically sensitive seagrass

habitats in some of a variety of audiences. ReMEDIES interventions are likely to have contributed to an increase in public awareness.

Opportunity: Have ReMEDIES interventions resulted in a social and physical environment to support behaviour change and enable boaters to avoid anchoring in seagrass?

The installation of three Voluntary No Anchor Zones (VNAZs) and 20 Advanced Mooring Systems (AMS) created physical opportunities in the environment for boaters and coastal users in the ReMEDIES areas to avoid anchoring in seagrass.

The 2021 survey suggested 38% of boaters who responded to that survey had been boating in areas with a VNAZ as opposed to 65% of those who responded to a survey in 2024. More than half of respondents (62%) who had been boating on the south coast of England reported having AMS in their boating area in 2024. In 2021, none of the respondents reported having access to AMS. This suggests an increase in the availability of the physical tools to enable boaters to change their behaviour towards anchoring and mooring, and/or awareness of them.

Motivation: Have ReMEDIES interventions resulted in increased belief or intention to protect the seabed?

A number of webinars and training workshops were delivered in partnership with the RYA.

This training was reported to increase the knowledge of boaters' on how to protect the seabed: 92% of boaters who attended training and completed the feedback form agreed they intended to look up seagrass before anchoring and 81% agreed they intended to use an AMS, if available. 71% (118 out of 166) of the respondents to the 2024 survey agreed that 'not protecting the seabed will have long-term negative consequences for marine diversity in my boating area'. There is therefore evidence of intention to take action to protect the seabed among a majority of those boaters who attended training associated with ReMEDIES and gave feedback, as well as evidence that the majority of the 166 boaters who responded to this question in the 2024 survey understand the consequences if they do not.

Behaviour: Have boaters and other coastal users changed their behaviour and avoided damaging the seagrass beds?

The percentage of boaters who filled in the survey who reported using AMS was 5% in the 2021 survey and 22% in the 2024 survey. The percentage of boaters reporting they 'never

anchored in seagrass' was also different: 17% in 2021 and 41% in 2024. This is self-reported behaviour in surveys where it is not possible to know how representative the respondents are of the wider boating community.

However, preliminary data from observational studies suggest a positive impact of the installation of the VNAZ at Osborne Bay in early 2024: the percentage of boaters anchoring in seagrass reduced from 43% (117 out of 270 boats) in 2023 to 21% (12 out of 56 boats) from a snapshot of three days of data during the summer of 2024 (though again the sample may not be directly comparable).

An overview of the findings on behaviour change is shown in the infographic (**Figure 1**).

Can this evidence of behaviour change be attributed to the ReMEDIES project?

This evaluation has shown that the ReMEDIES project has been successful in effectively engaging with a range of boaters and people in local communities, providing tools to help them protect seagrass and raising public awareness through a range of activities. However, it is uncertain to what extent the changes observed in awareness of reported behaviour can be attributed directly to the ReMEDIES project.

The partnerships and stakeholder community developed through ReMEDIES are expected to continue beyond the project, providing ongoing support for reducing the impact of recreational boating on seagrass habitats.

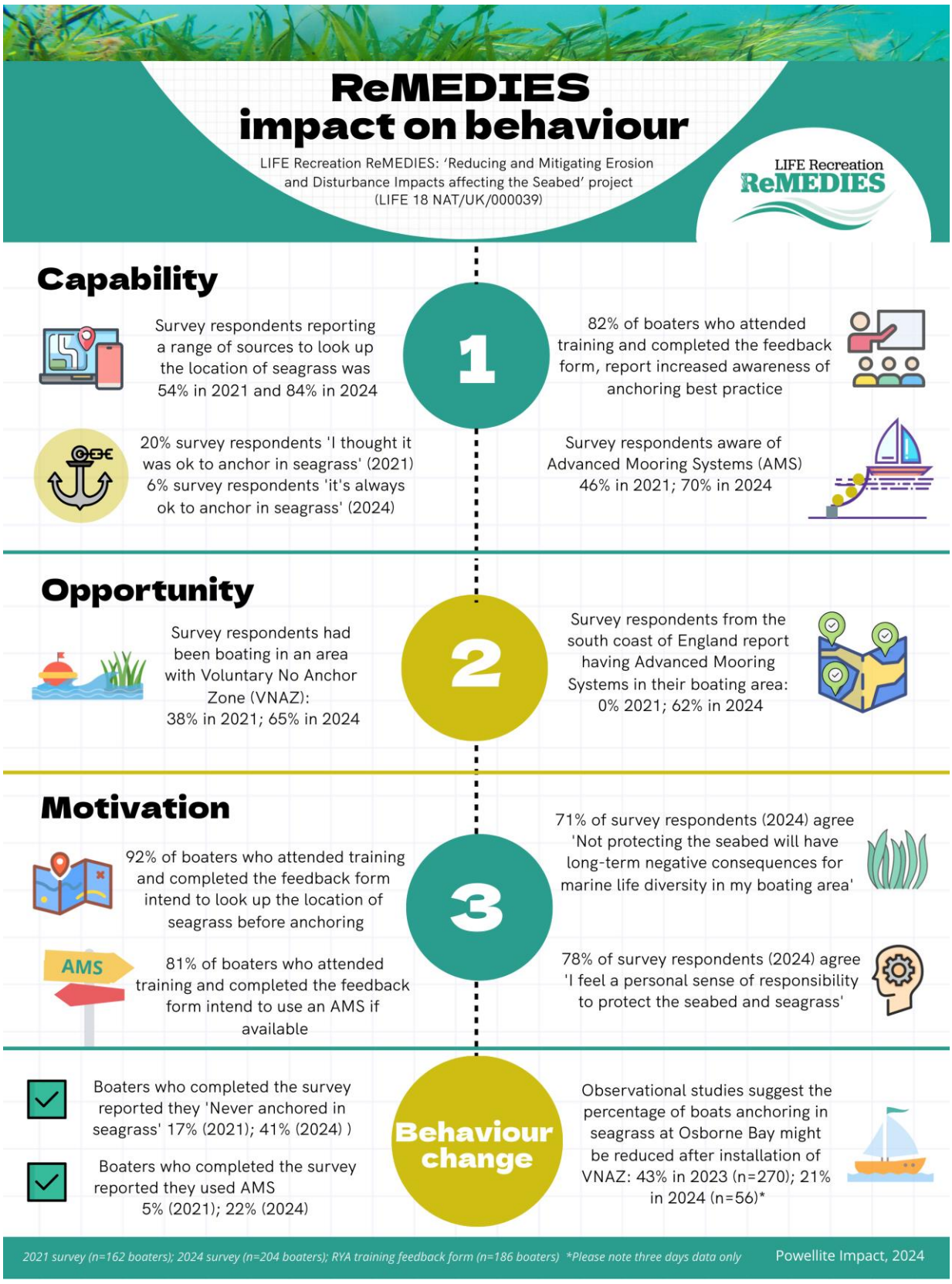

Figure 1. Visual representation of the findings of the report mapped against the three components of the COM-B behavioural change model: Capability, Opportunity and Motivation

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List of Abbreviations

AMS - Advanced Mooring System

Fal & Helford - Falmouth and Helford

NE - Natural England

OCT - Ocean Conservation Trust

Powellite - Powellite Impact Ltd

MCS - Marine Conservation Society

ReMEDIES - Reducing and Mitigating Erosion and Disturbance Impacts affecting the Seabed

RYA - Royal Yachting Association

SACs - Special Areas of Conservation

TECF - Tamar Estuaries Consultative Forum

VNAZ - Voluntary No Anchor Zone

Introduction

Background to ReMEDIES

The LIFE Recreation ReMEDIES 'Reducing and Mitigating Erosion and Disturbance Impacts affecting the Seabed' (LIFE 18 NAT/UK/000039) project started in July 2019 and completed in October 2024. The ReMEDIES project aimed to move intertidal/subtidal habitats in five key Special Areas of Conservation (SACs) from unfavourable towards favourable condition by addressing disturbance to these areas from the high intensity of recreational activity.

ReMEDIES was delivered in the following five SACs: Essex Estuaries; Solent Maritime; Plymouth Sound and Estuaries; Fal & Helford; Isles of Scilly (**Figure 2**).

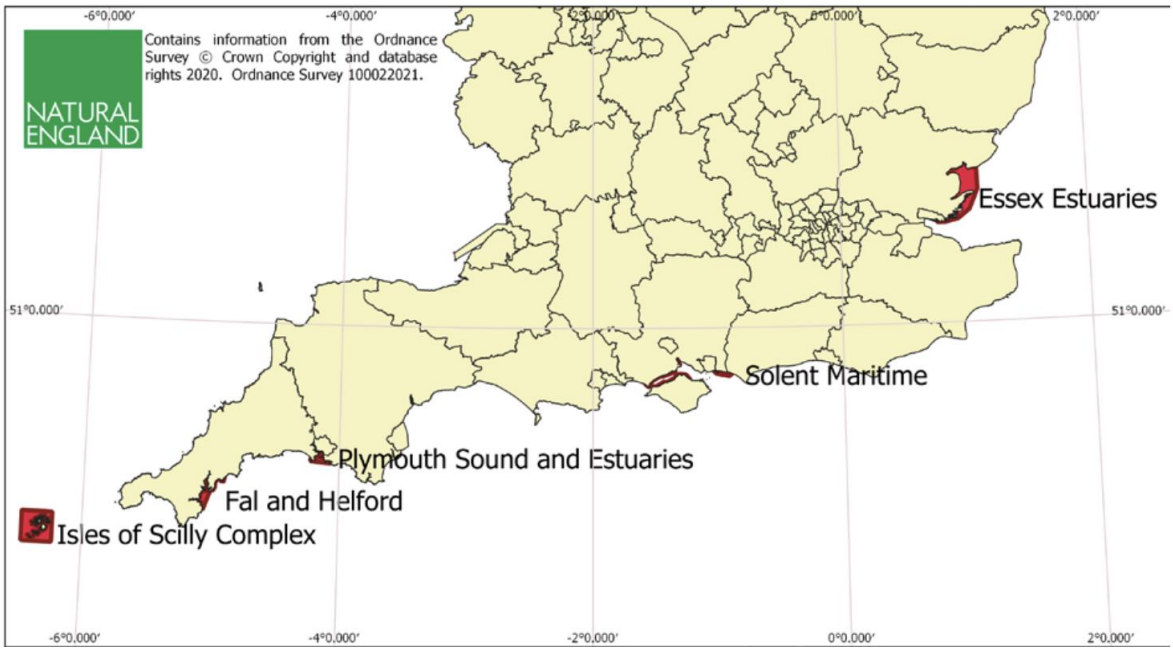

Figure 2. The five Special Areas of Conservation involved in the ReMEDIES project (provided by Natural England).

One component of the project was to protect seagrass habitats by reducing recreational pressures through changing the behaviour of recreational boaters. A range of activities have been delivered to promote awareness, share information and provide the tools to recreational boaters to prevent damage to seagrass beds.

Activities included:

- Design and installation of interpretation panels
- Creation of project website and leaflets
- Workshops and training for recreational boaters and school pupils

- Installation of Voluntary No Anchor Zones (VNAZ) and Advanced Mooring Systems (AMS)
- Observational studies of boaters and seagrass mapping

Natural England was the lead partner and worked closely with partners including the Ocean Conservation Trust (OCT), Marine Conservation Society, Royal Yachting Association (RYA) and Plymouth City Council/TECF. The project received LIFE funding from the European Commission.

Evaluation

In 2021, Natural England commissioned Collingwood Environmental Planning[1] to conduct a baseline survey, in-depth interviews and to complete a literature review to gain insights into the behaviours of recreational boaters and to develop a behaviour change monitoring approach.

The purpose of the evaluation in 2024, and the subject of this report, was to understand the extent to which the ReMEDIES project led to behaviour change. Three deliverables were requested as part of the evaluation work:

- Revised evaluation plan and set of indicators to evidence changes in behaviour during the ReMEDIES project
- Slide deck of emerging findings
- Final report

This evaluation was completed between October 2023-October 2024 by the independent evaluation contractor Powellite Impact Ltd, as commissioned by Natural England.

The main evaluation question was '**Have boaters and other coastal users changed their behaviour and avoided damaging the seagrass beds?**

[1] Natural England Research Report NECR371 Twigger-Ross and others, 2021. LIFE Recreation ReMEDIES Behaviour Change Project: Understanding the behavioural context - NECR371

Methods

Research activities

The research activities completed by Powellite included in-depth semi-structured interviews, a recreational boaters survey, a workshop and the analysis of secondary data provided by Natural England and the project partners.

Ethics permission was obtained from Natural England before the research activities were conducted. Research participants were provided with an information sheet and privacy notice before they were asked to take part in the research.

Research activities completed by Powellite:

- Desk research of 45 documents provided by NE
- Development of indicator framework with 18 indicators to capture behaviour change
- 10 project familiarisation interviews of up to one hour with project partners and local project teams
- 22 impact interviews of up to one hour (7 Plymouth; 4 Essex; 3 Solent; 5 Fal & Helford; 3 Isles of Scilly). Questions used as a discussion guide for semi-structured interviews are detailed in Appendices 1 and 2.
- 2024 survey completed by 221 boaters after being shared by RYA, Natural England and other stakeholders for 2 months between 8th May and 7th July 2024. Descriptive statistics were used for groups with a size of 30 or more[2]. Appendix 3 outlines the 2024 boater survey questions which was hosted online using the Alchemer Survey Platform.
- Validation of findings and feedback workshop with project partners and local project teams

Secondary data analysis of data sets provided by Natural England and project partners:

- QR data interpretation panels (NE, 2024)
- QR data leaflets (NE, 2024)
- ReMEDIES website usage (NE, 2024)
- Facebook activity (NE, 2024)
- ReMEDIES activities log (NE, 2023)
- Survey data (Collingwood, 2021)

[2] A sample size of 30 or more is recommended for statistics as smaller sample sizes can result in a misrepresentation of the results. *M. Islaqm, Sample size and its role in Central Limit Theorem (CTL), Computational and Applied Mathematics Journal, 2018 (4): 107*

- School workshop Monitoring & Evaluation data (OCT, 2023)
- Boaters workshop Monitoring &Evaluation data (RYA, 2023)
- Observational studies: Fal & Helford 2020; Plymouth 2020; Solent 2021; Solent 2022; Solent 2023; Helford VNAZ 2021; Helford VNAZ 2022; Helford VNAZ 2023; Osborne Bay VNAZ 2024

COM-B Behaviour change model

The evaluation approach developed by Powellite was based on the COM-B model, the widely used framework for understanding and influencing behaviour change (**Figure 3**). The COM-B model was developed by Susan Michie and colleagues in 2011 and is based on the principle that the following three essential components must be present for any behaviour change to occur:

- **Capability (C)**: Includes the psychological and physical ability to participate. This includes knowledge, skills, and physical strength.
- **Opportunity (O)**: Includes the social and physical opportunity to make a behaviour possible, such as the physical environment, social context, and access to resources.
- **Motivation (M)**: Includes reflective motivation (planning and evaluation) and automatic motivation (emotional and habitual processes) and looks at internal processes that influence decision-making and behaviour.

The interaction between these components forms a dynamic system with positive and negative feedback loops. The COM-B model suggests that behaviour change interventions must modify at least one of these components to be effective.

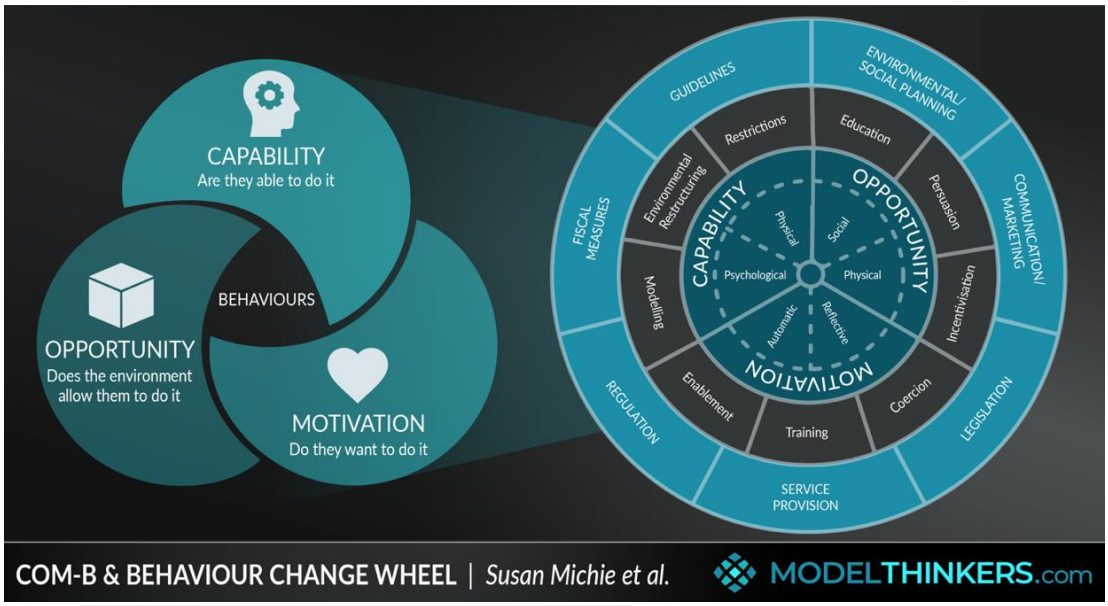

Figure 3. COM-B model and behaviour change wheel by Susan Mitchie et al.; image credit ModelThinkers.com

The COM-B model was used to structure the data collection, analysis and reporting. The ReMEDIES activities, the interventions, were mapped to the COM-B model according to their main mode of influence (**Figure 4**). However, it is important to recognise that each of the activities also influenced other components of the COM-B model at the same time. For example, the boaters training sessions increased capability, but also influenced opportunity and motivation.

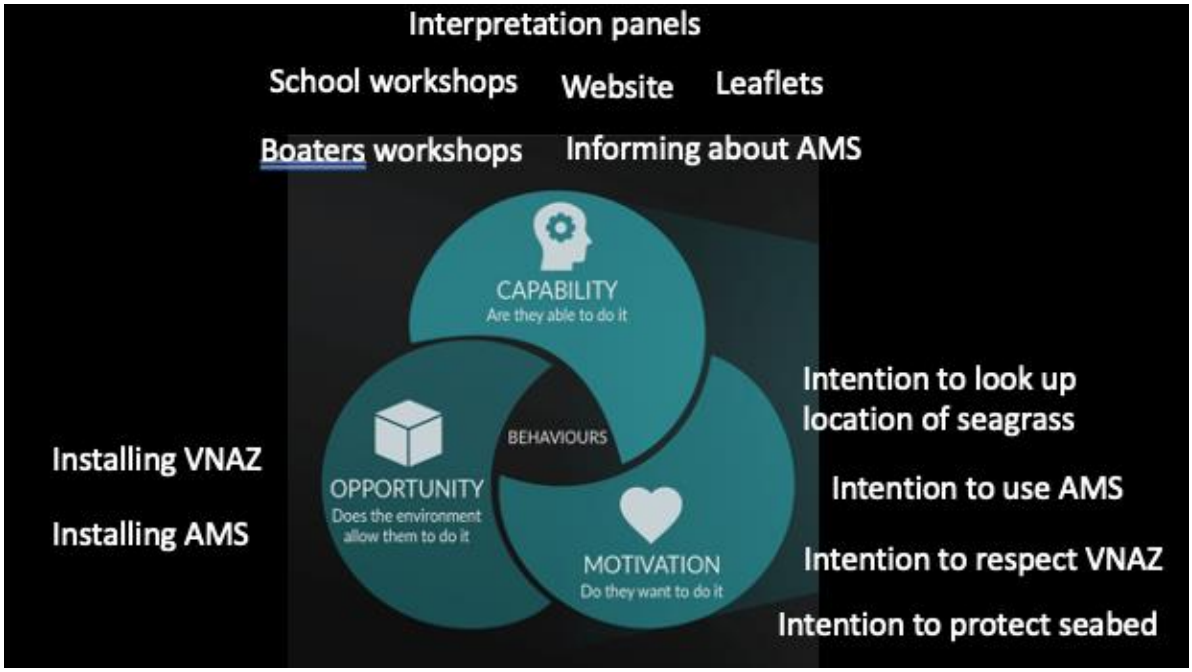

Figure 4. ReMEDIES activities mapped to the COM-B model to highlight their main mode of influencing behaviour (adapted from Susan Mitchie et al. on ModelThinkers.com)

An evaluation plan with six sub-research questions and 18 indicators (labelled as **P1-P18**) (**Table 1**) was developed in collaboration with Natural England to measure changes relating to each of the COM-B components and behaviour change overall. An overview of the findings against the indicators is shown in Table 6 in the results section.

Table 1. Six sub-research questions and associated indicators

Question	Evaluation indicators
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P1 Behaviour change reported by surveyed volunteers involved in mapping seagrass and surveying of boats

Question	Evaluation indicators
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P2 Level of awareness of the importance of seagrass habitats reported as a result of the interpretation panels
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P3 Number of boaters who report a change of awareness that anchoring and moorings can have an impact on seabed habitats after workshop
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P4 Evidence of boaters who think it is ok to anchor in seagrass
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P5 Evidence of school pupils reporting a change of understanding of seagrass habitats
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P6 Understanding of possible damage to seagrass by anchoring among school pupils
1.2 Do boaters and other coastal users have information on the location of seagrass? (Capability and Opportunity)	P7 Awareness levels on the location of seagrass reported as a result of the interpretation panels
1.2 Do boaters and other coastal users have information on the location of seagrass? (Capability and Opportunity)	P8 Evidence of boaters and other coastal users reporting they have sufficient information about the location of seagrass

Question	Evaluation indicators
1.2 Do boaters and other coastal users have information on the location of seagrass? (Capability and Opportunity)	P9 Evidence of boaters who report the workshop helped them to understand where to find information to help locate seagrass
1.3 Do boaters and other coastal users have information on how they can reduce their impact on seagrass beds? (Capability and Opportunity)	P10 Evidence of boaters who report the workshop resulted in a change of understanding of anchoring best practice
1.3 Do boaters and other coastal users have information on how they can reduce their impact on seagrass beds? (Capability and Opportunity)	P11 Evidence of boaters who report the workshop resulted in a change of awareness of how AMS can help minimise impacts on seabed habitats
1.4 Do coastal users aim to reduce their impact on seagrass habitats? **(Capability and Motivation)**	P12 Number of boats and other coastal users moving through seagrass areas at the time of the observation survey
1.4 Do coastal users aim to reduce their impact on seagrass habitats? **(Capability and Motivation)**	P13 Number of boats anchoring or mooring in seagrass at the time of the observation survey
1.5 Do boaters observe best practice e.g. use minimum amount of chain? **(Motivation)**	P14 Number of boaters reporting they use Advanced Mooring Systems when available
1.5 Do boaters observe best practice e.g. use minimum amount of chain? **(Motivation)**	P15 Evidence of boaters reporting they adopt anchoring best practice e.g. use minimum amount of chain

Question	Evaluation indicators
1.6 What is the attitude of boaters towards Voluntary No Anchor Zones and Advanced Mooring Systems? (Capability, Opportunity, Motivation)	P16 Level of awareness of VNAZ and attitude towards VNAZ
1.6 What is the attitude of boaters towards Voluntary No Anchor Zones and Advanced Mooring Systems? (Capability, Opportunity, Motivation)	P17 Level of engagement with boaters, boating clubs, mooring owners and harbour masters on AMS
1.6 What is the attitude of boaters towards Voluntary No Anchor Zones and Advanced Mooring Systems? (Capability, Opportunity, Motivation)	P18 Interest by harbour masters and mooring holders in installing AMSs

The quantitative and qualitative data from different data sets was analysed and triangulated for each of the activities. The baseline data from the 2021 survey completed by Collingwood Environmental Planning was compared to the recent survey data collected by Powellite Impact in 2024. Thematic analysis of the interviews was completed. The findings helped to identify themes, and verbatim quotes from the interviews were included in the report and in three case studies.

In addition, the analysis captured insights into lessons learned covering both project delivery and partnership working.

Demographics of research participants

More than three quarters of respondents are aged 55 and over (77%, 198 out of 256). 81% (171 out of 210) responded their gender is male. 90% (180 out of 201) of respondents selected ‘White British’ as ethnicity, 3% (6 out of 201) ‘White other’, 6% ‘prefer not to say’ (12 out of 201) and 1.5% (3 out of 201) selected ‘other ethnic group’. 82% of survey respondents reported they had been boating in one or more of the five ReMEDIES areas.

Evaluation limitations

Several limitations were identified during the analysis and reporting of the evaluation findings:

Limited number of interviews and survey respondents – The number of interviews (n=32) that could be done within the budget limited confidence in the findings. Many of the interviewees had been engaged in the ReMEDIES activities directly and it is unknown how representative this sample is of the wider community. Limited survey response numbers also prevent segmentation by age or ethnicity. With 77% (198 out of 256) of respondents in the 55 and over age group, the other groups were too small to do any segmentation analysis by age. With only 1.5% from a different ethnic background and the remaining respondents from a white background or 'prefer not to say', no analysis of responses by ethnicity could be completed.

Lack of data collection – No monitoring had taken place for some of the interventions, for example, no monitoring of the VNAZ in Jennycliff, Plymouth Sound and Estuaries SAC. A range of monitoring activities which were proposed to take place during the delivery of ReMEDIES had not been completed due to COVID-19 disruptions and limited staff capacity. Scanning rates for QR codes on interpretation panels and leaflets were collected in a software programme which only retained information for up to three months. Awareness of this was raised in 2024, so there was no data on the use of QR codes available from the period before March 2024.

Relatively limited behaviour change focused baseline data available – Limited baseline data was collected through a survey by Collingwood in 2021. The 2021 survey did not identify respondents, making it impossible to go back to the same group of respondents to capture if they had changed their behaviour as a direct result of the ReMEDIES project. Therefore, we don't know how many, if any, of the respondents who took the 2021 survey also took the 2024 survey. We also do not know how representative either sample is of the wider boating community of the time. This means that though we do compare the results of the two surveys where the same (or similar) questions were used, it is not possible to say how meaningful any differences found are, and the findings should be treated as indicative rather than conclusive.

Potential priming of responses in baseline survey – The baseline data was collected in 2021 through a survey which contained information that may have signalled to respondents what the desired response was. They were told about the importance of seagrass in improving water quality, removing carbon from the air and as a habitat for marine wildlife before being asked if they had anchored in seagrass. To allow for indicative comparison between the 2021 survey results and the 2024 survey results, in the recent survey respondents were asked for their views and offered the options 'it is always/sometimes/never ok to anchor in seagrass'. To avoid influencing the answer of respondents, this question was asked at the start of the survey before providing any further information. However, without additional information about specific reasons when anchoring in seagrass is appropriate (e.g. for safety reasons), this question provided limited insights.

Bias for survey completion – The survey was distributed by RYA and other project partners, therefore it is likely there is a bias as the survey was completed by recreational boaters who are members of the RYA and/or recreational boaters who have engaged with

one or more of the project partners. Therefore, the results present the views of a specific group of boaters and cannot be assumed to present the views of all recreational boaters.

Interpretation panels inside and outside ReMEDIES areas – In the survey, feedback was requested on the interpretation panels placed as part of the ReMEDIES activities. Responses showed that some of the boaters responding to this question had not been in the ReMEDIES areas. It must therefore be assumed that this feedback related to all interpretation panels, not just the ReMEDIES interpretation panels.

Limited implementation of a behaviour change approach – The interventions/activities delivered as part of the ReMEDIES project were not designed through a typical behavioural science approach. There was a lack of a systematic design which would first identify the behaviours the project was targeting, then identify the actors involved in those behaviours and subsequently identify the barriers to changing behaviour. There was a concerted effort to try and create a more systematic monitoring and evaluation strategy after the project had started, retrofitted to the activities and the interventions that each site was implementing. However, due to staff capacity this work was never fully applied. The absence of a systematic approach with consistent monitoring and evaluation activities has resulted in a lack of data on behaviour changes which can be attributed to ReMEDIES and has prevented this evaluation from identifying the main barriers to changing boaters' behaviour in the five SACs.

Limited number of survey respondents had engaged in the ReMEDIES activities – In the 2024 survey, when recreational boaters were asked if they engaged in the ReMEDIES activities 100 out of the 233 responses to this question said 'no' (this includes none of the above (n=90), don't know (n=8), other 'do not know what ReMEDIES is' (n=2). The remaining 133 respondents reported that they had:

- Read a leaflet (n=59)
- Read interpretation panel (n=45)
- Visited the ReMEDIES website (n=18)
- Attended a training course, webinar or workshop for boaters (n=14)
- Participated in a RYA event (n=12)
- Participated in a local event (n=12)

Respondents were able to select multiple answers.

The number of people taking part in the individual activities was too small to analyse as an 'intervention group', which would have allowed comparison of response frequencies with those who had not engaged in ReMEDIES activities (the 'control group'). Therefore, it was not possible to complete contribution analysis and attribute any reported behaviour changes in the survey directly to ReMEDIES activities.

Unknown impact of external factors – Raising awareness of the importance of seagrass is something that is happening globally. In England, Project Seagrass and The Blue Planet by the BBC have also helped to raise awareness of seagrass habitats and marine issues

respectively. In March 2020 the BBC, ITV and The Guardian all covered the importance of seagrass and work by Project Seagrass. Google Trends show that over the last eight years, there was an increase in the number of searches for the word ‘seagrass’ in England from March 2020, while the number of searches for the word ‘seabed’ stayed similar (**Figure 5**). It is possible that such awareness raising by others about issues related to seagrass will have also influenced behaviours covered in this evaluation.

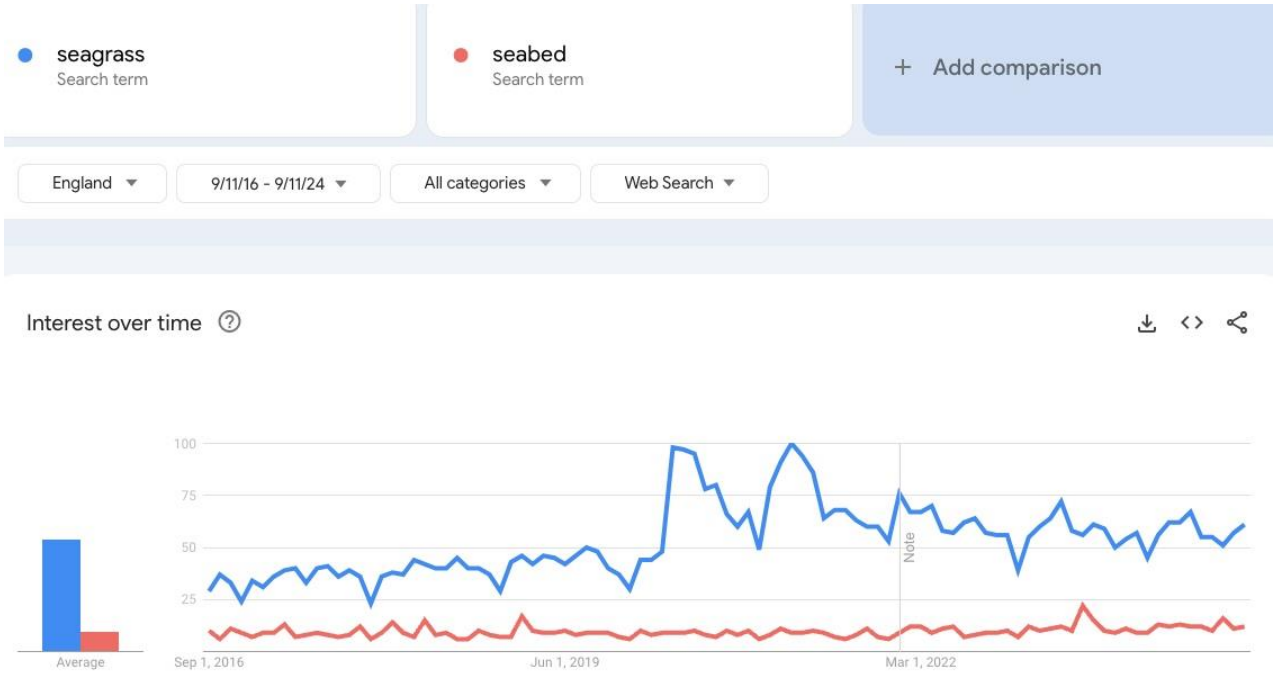

Figure 5. Google Trends search for the terms ‘seagrass’ and ‘seabed’ (11 September 2016 - 11 September 2024).

Results - Capability findings

Psychological capability findings

One of the ReMEDIES project objectives was described as “Promote awareness and inspire better care of the SACs habitats by recreational users and use networks of relevant stakeholders and public at a local, national and trans-national level to maximise the longevity and sustainability of the project actions.” For this evaluation, this has been interpreted as contributing to individuals’ psychological capability[3] that is seen as an important component of the COM-B model of behaviour change.

[3] Psychological capability is looking at the questions ‘Are they able to do it?’

The ReMEDIES awareness raising activities were aimed at the general public, communities, school children and recreational boaters in the five SACs. Activities included the installation of interpretation panels, development and sharing of leaflets, the ReMEDIES website, workshops in schools, workshops and webinars for boaters, volunteer activities and other events.

General awareness of seagrass

We compared two survey data sets to understand how boater awareness of seagrass might have changed: one data set was collected via the Collingwood survey of 2021, and one data set was collected using a different set of survey questions based on the indicator framework developed by Powellite in 2024.

The 2021 data set showed that 96% (150 out of 156) of recreational boaters who completed the survey were aware of seagrass. In the 2024 survey this rate was very similar: 97% (214 out of 221) of respondents in the 2024 survey indicated they were aware of seagrass. When asked in the 2024 survey how they became aware of seagrass, more than half of respondents said they had heard about seagrass through the RYA (55%) or media (50%). 11% specifically mentioned ReMEDIES as the source of their awareness of seagrass. Other sources which were mentioned included work, magazines, friends and family.

Interpretation panels

To inform recreational boaters and other coastal users about seagrass and sensitive marine habitats, the ReMEDIES project designed and installed interpretation panels. By July 2024, three panels had been installed in Solent and three in Fal & Helford (**Figure 6**). At the time of writing, work was ongoing on the installation of two interpretation panels in the Isles of Scilly.

Figure 6. ReMEDIES interpretation board located at Durgan (Helford)

However, installation of the ReMEDIES interpretation panels was delayed, and software issues related to the QR codes included on the panels occurred (mentioned earlier). Therefore, limited data was available about how many people had used the QR codes to access further information for inclusion in this evaluation. The limited data that was available showed that between 18th of Feb 2024 and 30th of June 2024, the QR code was used 11 times to visit the ReMEDIES website. No QR codes were scanned to visit the specific page 'Mooring – save the seabed'.

In the 2024 survey respondents were asked if they had engaged in any ReMEDIES activities and 23% (45 out of 196) responded they had read interpretation panels/information boards in coastal areas. The responses showed that four of these 45 respondents had not been boating in England and five respondents had not been boating in the ReMEDIES areas in the last three years. It is therefore likely that not all responses to this question are related to the ReMEDIES interpretation panels. 20% (9 out of the 45) respondents that read interpretation panels/information board indicated that they acquired new knowledge.

16% (7 out of 45) of survey respondents who engaged with the panels reported having a better understanding of seagrass habitats and their importance as a result of reading the interpretation panels (I now have a better understanding of seagrass and its importance, n=7)**,** 16% (7 out of 45) of survey respondents reported that the panels helped them find information about the location of seagrass (I now know where to find information about the

location of seagrass, n=7) and 16% of survey respondents reported that they now have a better understanding of how to reduce damage to the seabed (I now understand how to reduce damage to the seabed, n=7)**.**

One of the interviewees described why the interpretation panels have been so helpful to provide them a better understanding of how to identify seagrass:

> "I think the boards have been really useful because the seagrass is so close to the shore that if you're entering the water in any capacity, you have impact on the seagrass. So having the boards there has been good for a better understanding of why it's important that we're not trampling on it or kayaking over it or anchoring in it. They all have maps on them that are really clear to identify seagrass on." – Volunteer and water user, Fal & Helford

The interviewee also highlighted the strong design and good location for these panels to increase knowledge:

> "The new board is really eye-catching, professional and informative. I've seen on multiple occasions groups stopping as they're at the beach. I've noticed they're in good spots, you have to pass them." – Volunteer and water user, Fal & Helford

ReMEDIES website, Facebook page and leaflets

The ReMEDIES website received more than 58,000 views between 14 June 2021 and 14 June 2024 and the following number of users and views per year:

- 4.2k users and 20k views (June 2021-June 2022)
- 4.1k users and 16k views (June 2022-June 2023)
- 3.9k users and 14k views (June 2023-June 2024)

When survey respondents to the 2024 survey were asked about the ReMEDIES website, 18 out of 233 respondents indicated they had visited the ReMEDIES website and six of these respondents said they had acquired new knowledge about the importance of seagrass from it.

Natural England reported the following activity on the ReMEDIES Facebook account for the last 12 months:

- Impressions: 8,685
- Reach: 7,817
- Reactions, comments, and shares: 305

59 survey respondents from 2024 reported reading the ReMEDIES leaflets (**Figure 7**), with seven responding they now had a better understanding of how to reduce the damage to the seabed and six respondents saying it had helped them to know where to find information about the location of seagrass.

Figure 7. ReMEDIES leaflet

The leaflets, which also contained QR codes, were shared at events and local fairs. The QR codes were monitored between 18th of Feb 2024 and 30th of June 2024, showing they had been scanned to see the following pages:

- Green Guide to Anchoring and Moorings (thegreenblue.org.uk): 3 visits
- ReMEDIES teachers' page: 11 visits
- Seagrass Spotter (seagrassspotter.org): 44 visits

The perceived value of the leaflets was highlighted by a conservation manager:

> "All the key messages being in one place in the leaflet was needed and that's what this project helped to do. This project, ReMEDIES, the team and the funding, have been the catalyst to make the leaflet with the map and all the information. We need to preserve what we've got. That key message really came out as part of this project." – Conservation manager, Isles of Scilly

Activities with schools, boaters and the general public

Between May 2020 and December 2023, all partners had delivered a large number of activities to raise awareness of the seabed among boaters and members of local communities to increase their knowledge and understanding of the importance of protecting the seabed in Cornwall, Essex Estuaries, Essex and Thames, Fal & Helford, Isles of Scilly, Plymouth, Reading and Solent:

- Natural England led on 58 activities, which included workshops, forum meetings, stakeholder meetings and public events, directly engaging with just over 1,200 people.
- The Ocean Conservation Trust (OCT) led 159 engagement activities: workshops involved 1,662 school pupils/home educators and 8,991 other people and other ReMEDIES outreach activities engaged with 4,881 school pupils/home educators and 14,455 other people.
- The Marine Conservation Society led 156 activities, directly engaging with nearly 7,000 people at public events, informal training, workshops and school activities.
- Plymouth City Council led 13 activities, including forum meetings, events and a conference, directly engaging more than 3,600 people.
- The Royal Yachting Association delivered 28 webinars and informal training sessions, directly engaging with around 1,700 people.

One volunteer described the uniform messaging in the ReMEDIES project regarding awareness:

> "They seem to have really tied in awareness and education with conservation within the community, the public and the boating sector. I think having that uniform message across and connecting the three has been really cool to see." – Volunteer and water user, Fal & Helford

Another interviewee described the effective engagement style of the ReMEDIES project:

> "Scilly people can feel like 'who are these people coming in telling me about what I know already'. Whatever ReMEDIES are doing, they're doing it right. They're having positive conversations, engaging with the boating communities, so they're now asking me [to be involved]." – Conservation Manager, Isles of Scilly

> "A lot of the locals are coming to the idea that seagrass is important and that we've got plenty of it here. I noticed that a few of the locals who'd come out to listen to Jules and Esther give the talks on board my boat and we were drifting over the seagrass and there was a few of the locals that I overheard say, 'oh, I had no idea that was here.' It's almost like new knowledge for a lot of them." – Glass bottom boat tours, Isles of Scilly

School workshops

School workshops were completed by OCT to inform school pupils about sensitive marine habitats and thereby build awareness and knowledge by influencing parents via their children, educating future generations in the next generation of recreational boaters to protect the seagrass in their coastal areas.

One interviewee described the school workshops on children's knowledge about seagrass:

> "A big benefit has been the education of the school kids, it's made a big difference because they all seem to know about it, local kids and visiting kids." – Glass bottom boat tours, Isles of Scilly

One of the teachers thought the workshop for their class might have a ripple effect on the adults around them:

> "Esther from OCT was extremely informative, resourceful and knowledgeable. The children had a wonderful time and were all very engaged and enthusiastic. Days after her visit, the children still discussed the practical task and felt very passionate about the seagrass in our oceans. A few months later pupils told me 'I remember the anchors from the boats are destroying the seagrass and seagrass is home to many sea animals.' At the age of these children, I think they would be able to inform the adults of this when they were out on a boat." – Teacher of 7–8-year-olds, Plymouth

Feedback information from up to 978 participants in the school workshops was captured:

- 90% (868 out of 968) of respondents reported 'I learnt things about seabed habitats'
- 91% (884 out of 969) of respondents reported 'I understand that seabed habitats are important to me and the ocean'

The school workshops provided information on different approaches to anchoring and how this could help protect seabed habitats. The children were asked to draw what they learnt, and the drawings included information about the importance of seagrass and the possible impact of different anchoring systems (**Figure 8**).

Feature counts by OCT, showed that 19% (183 out of 978 drawings) of pupils' drawings showed an understanding of possible damage to the seabed by anchoring.

Figure 8. Drawings by school pupils involved in ReMEDIES school workshops

Webinars and workshops for boaters

Between September 2020 and June 2023, the RYA led on the delivery of 28 boaters' webinars and training courses. Attendees were asked to complete a feedback form. Attendees who completed the feedback form provided the following feedback on questions about the impact of these workshops on their awareness:

- 76% (141 out of 185) attendees reported their awareness of 'the importance of seagrass habitats like seagrass' increased a little or a lot.
- 77% (140 out of 183) attendees reported their awareness of 'the impact that anchoring and moorings can have on seabed habitats' increased a little or a lot.

Highlighting that seagrass meadows can store carbon in their sediment can help engagement as one interviewee described:

> "It's very difficult as a harbour authority to get to Net Zero but understanding the benefits of seagrass we realised 'OK this will assist us in our aim to become net zero' and how can we best protect what we've got in the harbour." – Harbour Authority, Isles of Scilly

Volunteers and divers supporting observational studies

As part of the ReMEDIES projects, volunteers were engaged in several different ways. Volunteers helped in:

- **Conducting recreational boating surveys**. Recorded the number of recreational boaters and other coastal users, the type of boats and where they anchored. Volunteers received training on the importance of seagrass and methods of recording.
- **Observational diving and snorkelling surveys.** Divers and snorkellers were taken to areas of seagrass and maerl to record these sensitive marine habitats and species and observe human impacts and monitor restoration. Training on monitoring methods, seagrass importance and human impacts were provided as part of the diving excursions.

A survey of 29 volunteers in Essex showed that only three rated their 'knowledge of threats seagrass beds face' as 'high' before the training. After the training and observation session was completed, 21 rated their knowledge as 'high'.

Interviewees describe how they were able to raise awareness and engage people:

> "A lot of people would attend our snorkelling session and once we told them about the importance of the seagrass and highlighted everything that was being done, they'd say 'how can we actually help', so there was maybe an immediate attitude change and educational awareness." – Coordinator, Fal & Helford

The value of including divers to map seagrass and increase awareness was highlighted by one of the interviewees:

> "A diver is a lot better at judging and recording the biodiversity of an area [than sonar mapping]. By the end of the project, all of the ones who have come on those dives know a lot more about Maerl and Seagrass than they would have known." – Conservation officer, Fal & Helford

Information on the location of seagrass

One of the aims of the interpretation panels, website, Facebook page, leaflets, public events, webinars and boaters' workshops was to inform recreational boaters and other coastal users about sources to find out where seagrass is located. The idea behind this is that if recreational boaters know where seagrass is located, they can make informed decisions about avoiding boating or anchoring in these areas.

In the 2021 survey, 38% (56 out of 147) said they had never looked to see if there was seagrass where they planned to anchor. Lack of information about the location of seagrass was given as one of the main barriers for avoiding anchoring in seagrass.

When boaters were asked in the 2024 survey, only 16% (29 out of 182) said they never looked up information to find out about the location of seagrass. 84% (153 out of 182) of respondents reported using a range of sources for locating seagrass (**Table 2**). Respondents were able to select multiple answers.

Table 2. Information sources used for locating seagrass in areas for boating (n=182)

Source used for locating seagrass	Percentage of respondents
Websites	42%
Information from RYA	42%
Paper or electronic charts	30%
Leaflets	26%
Interpretation panels/information boards in coastal areas	25%
Other boaters e.g. via social media or word of mouth	25%
Pilot guides	21%
Information at my local sailing club or marina	20%
Apps	6%
I have never looked for information	16%

Respondents used the following most frequently: websites (42%, 76 out of 182), information from the RYA (42%, 76 out of 182) and paper or electronic charts (30%, 55 out of 182). Only a small number of respondents mentioned using apps (6%, 11 out of 182). Interestingly, one survey respondent who boated in the ReMEDIES areas specifically mentioned how the marker buoys of the Voluntary No Anchor Zone helped them to know where the seagrass was. This suggests a possible increase of awareness of sources to look up information on the location of seagrass, although it is not known how representative either of the samples are of the wider boating community.

When recreational boaters were asked at the end of boaters' webinars and workshops if the event had impacted on their awareness of where they can find information to help locate seagrass areas, 91% (137 out of 150) attendees who completed the feedback form responded their awareness had increased a little or a lot.

Awareness about maps and apps to share the location of seagrass was also raised at events as described by this engagement officer:

> "We've also encouraged people to use Seagrass Spotter. It's an app. So, if they're in those areas and searching for it, if they find seagrass, you add it to the app. So, we know that's where it is as well." – Engagement officer, Essex

Awareness of possible damage by anchoring in seagrass

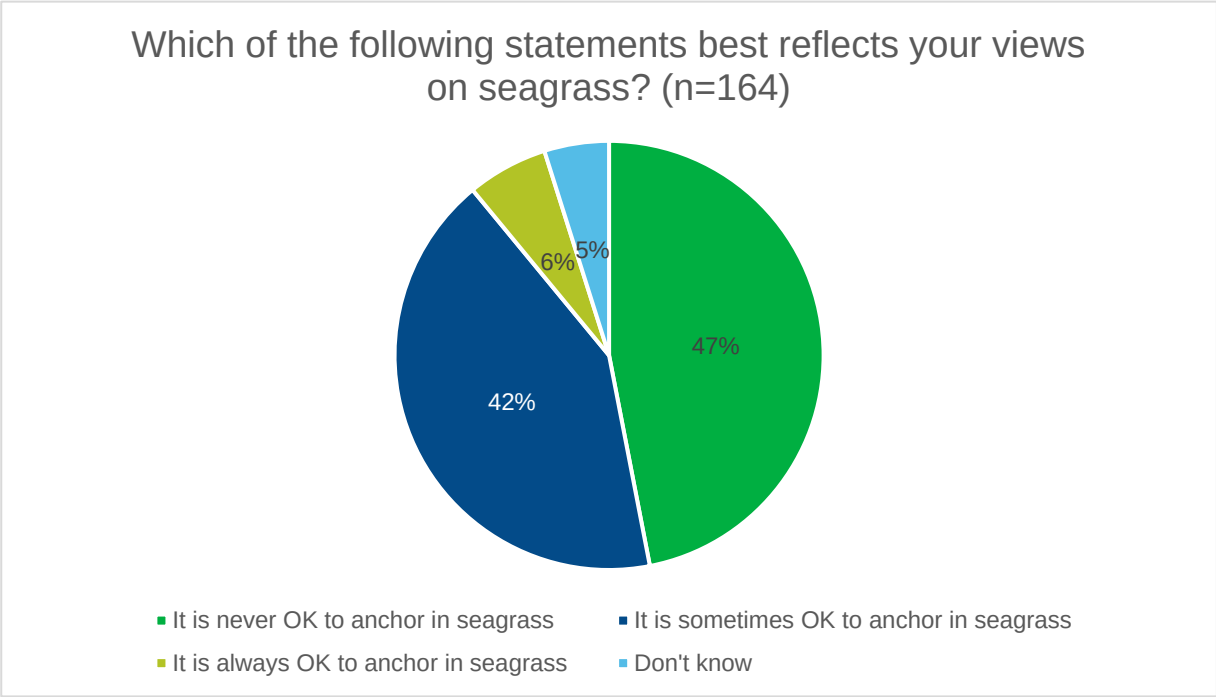

Figure 9. Surveyed recreational boaters' views on anchoring in seagrass

When looking at attitudes towards anchoring in seagrass, the results suggest a clear shift between 2021 and 2024, although it is important to note that we don't know how comparable the two samples are. The percentage reporting 'I thought it was ok to anchor in seagrass' was 20% (12 out of 61) in 2021. In 2024 only 6% (10 out of 164) of the surveyed recreational boaters selected the answer "it is always ok to anchor in seagrass"; 42% (69 out of 164) of all respondents reported it is sometimes ok to anchor in seagrass. Nearly half of respondents (47%, 77 out of 164) responded they think 'it is never ok to anchor in seagrass' (**Figure 9**).

In the small group of 10 respondents who selected the statement 'it is always ok to anchor in seagrass', one respondent suggested they did not believe that seagrass existed, and other respondents did not believe they would cause much damage.

In the 2021 survey the question about anchoring in seagrass was asked after introducing that seagrass is an important habitat for marine life, and that seagrass plays an important role in removing carbon from the air, which might have resulted in a bias against people selecting "I thought it was ok to anchor in seagrass". In the 2024 survey this question was asked at the start, before information about seagrass and damage by anchoring was introduced, with the aim of reducing the risk of influencing the answer.

It is important to note the question in 2024 was asked in a different format and different options were presented compared to the 2021 survey, and this needs to be taken into account when the comparison is made between the 2021 and 2024 results, as well as the question over how comparable the two samples are.

When looking at differences between the five ReMEDIES areas:

- The percentage survey respondents (2024) selecting ‘it’s never ok to anchor in seagrass’ was the highest in Plymouth Sound and Estuaries (50%, 30 out of 60) and much lower in Solent / Isle of Wight (28%, 21 out of 76). However, it is important to note that these sub-sample sizes are small and so these results need to be treated with caution.
- The percentage of respondents selecting ‘it’s sometimes ok to anchor in seagrass’ was higher in Solent/Isle of Wight (58%, 44 out of 76) compared to the overall responses (42%, 69 out of 164).

Awareness of Advanced Mooring Systems

Traditional swing moorings consisting of a concrete anchor block with a chain can damage the seabed. Advanced Mooring Systems (AMS), also known as eco-moorings or environmentally friendly moorings, have a helical screw or concrete anchor block with an elastic rode or a helical screw or concrete block with a floating chain (**Figure 10**).

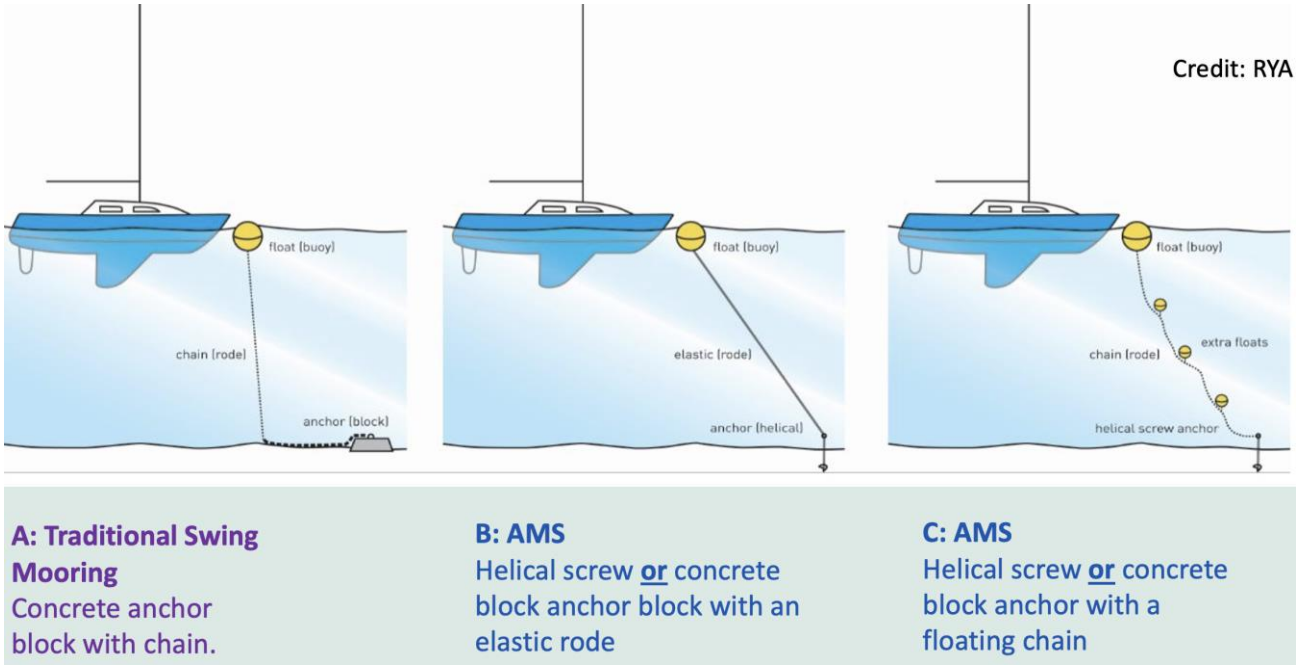

Figure 10. Advanced Mooring Systems (AMS) image by RYA

Project partners and Natural England staff aimed to raise awareness of AMS during the boaters’ workshops, at webinars, conferences and events. Feedback at boaters’ workshops and seminars led by RYA showed that 82% of attendees (149 out of 181) felt the training increased their understanding of AMS and how they can help to minimise impacts on seabed habitats.

In the 2021 survey, just under half (46%, 70 out of 162) of the boaters who completed the survey were aware of AMS. In the 2024 survey, more than two thirds of boaters who completed the survey (70%, 141 out of 201) were aware of AMS, suggesting a higher level of awareness about AMS, though it is not known how comparable these samples are.

Physical capability findings

The ReMEDIES project aimed to provide training opportunities for recreational boaters to increase their abilities to prevent damage to areas of seagrass and how to use best practice when anchoring.

Boaters' workshops on anchoring best practice

To gain insight into the content of training for boaters on anchoring, in both the 2021 survey and 2024 survey respondents were asked if they had taken part in anchoring training and if this anchoring training had included information on how to anchor to avoid damage to the seabed. In the 2021 survey, 61% (98 out of 160) of respondents said they had undertaken training on how to anchor and 25% (25 out of 100) who commented on the training, said the training covered preventing damage to the seabed.

In the 2024 survey, 59% (126 out of 214) of respondents said they had undertaken training on how to anchor, 22% (27 out of 121) who commented on the training, reported this covered how to prevent damage to the seabed when anchoring.

Notably, in the 2024 survey, 18% (39 out of 214) responded they did not have training on anchoring but would be interested in training. This might suggest that the provision of training on anchoring with information on preventing damage to the seabed (as provided by the RYA) is a helpful way to increase awareness of seagrass among boaters interested in training.

Boaters who attended the webinars and workshops led by RYA were informed about anchoring with care as described in the Green Blue's 'The Green Guide to Anchoring Moorings'. It encourages boaters to choose an anchorage away from sensitive habitats, consider using an existing mooring rather than anchoring within a seagrass bed, choose the correct anchor for type of seabed and use the correct amount of chain to minimise unnecessary chain abrasion on the seabed.

82% (150 out of 183) attendees of the RYA training who completed the feedback form reported their awareness of 'the anchoring best practice that can minimise impacts on seabed habitats e.g. using the correct amount of chain' increased a little or a lot.

Results - Opportunity findings

The ReMEDIES project helped to install three Voluntary No Anchor Zones (VNAZ) and 17 Advanced Mooring Systems (AMS).

Physical opportunity findings

This section on physical opportunity looks at how the context supports and enables specific behaviours.

VNAZ to mark areas of seagrass

Three VNAZs were installed, one in each of the following ReMEDIES areas: Fal & Helford (where ReMEDIES funded two additional markers to make the existing VNAZ more prominent), Solent and Plymouth. VNAZs were not installed through ReMEDIES in Essex or the Isles of Scilly. Installing VNAZs is an intervention employed by the ReMEDIES project to reduce seabed disturbance and protect sensitive marine habitats from anchoring of recreational boats. VNAZs are marine areas demarcated by visual markers with signs asking boaters to 'please keep off the seagrass' signifying boats should ideally not anchor in the area to protect marine habitats, for example seagrass.

As the name suggests, these are not regulatory measures but rather require boaters to choose voluntarily to comply with the suggestion not to anchor within these zones. This means there are no punitive or financial consequences for entering or anchoring within the zones.

Creating VNAZs provides boaters with a clear indication about where sensitive seabed habitats are located and an opportunity to avoid anchoring in seagrass. One interviewee commented on the clear marking with buoys:

> "I think any kind of water user has seen these buoys and ask questions or pass them and it's been really clear the messaging on them amazing, clear messaging amazing." – Volunteer and water user, Fal & Helford

However, when the water is very busy the VNAZ can sometimes be ignored:

> "Especially, if you get very, very hot weather and a bank holiday weekend, then it seems like, caution goes to the wind and anybody will go in there [the VNAZ], then you can get a number building up" Estuary Officer - Fal & Helford

One of the barriers to VNAZ raised by one of the interviewees was the cost of installing and maintaining the VNAZ:

> "We'd love to put 10 buoys in, but we can't afford it. Who's going to pay for it so that'll be the stumbling block." – Harbour Authority, Solent

In the 2021 survey, just over a third (38%, 54 out of 143) of recreational boaters who completed the survey had been boating in an area with a VNAZ. In the 2024 survey, nearly two thirds of respondents (65%, 140 out of 215) had been boating in an area with a VNAZ.

Installing of AMS

A total of 17 AMS systems were installed during the project. 4 of these are visitor moorings (any boater can use) and the rest are in private ownership/use by individuals. A couple of interviewees involved in ReMEDIES felt they and the project had done a good job in discussing and installing AMS:

> "AMS moorings is something that from the boating perspective has been a really big thing to try and convince people to do it and it has to be a lot of trust and relationship and I think ReMEDIES have done a really good job with all their partners as well in slowly working with the boating community."- Water user and volunteer, Fal & Helford

> "Targeted people and targeted groups have learned an awful lot about AMS, particularly engaging with the sailing clubs in the area. When you talk to the public, people are starting to understand what an advanced mooring system is and I would say that that's predominantly because of ReMEDIES." - Project Lead, Essex

In the 2021 survey, 0% of respondents (n=136) agreed to the statement 'there is often an AMS available for me when I go out boating', whereas, nearly half, (48%, 67 out of 139) of respondents in the 2024 survey responded there are AMS available in the area they go boating. A higher percentage of respondents who go boating on the south coast of England (62%) have AMS in their area. Two thirds of respondents in Fal & Helford (68%) and Solent/Isle of Wight (68%) reported having AMS in their area.

However, one of the interviewees emphasised more AMS are needed but not every harbour is interested to make this change:

> "One harbour, St Mawes where a lot of the moorings are in seagrass, and they really should be changed. There doesn't seem to be an appetite for change. I went there last year the massive areas where seagrass should be growing, there's a huge circular scar, probably 15 metres wide." – Marine conservation officer, Fal & Helford

Social opportunity findings

This section explores the social influences that the research identified as potentially influencing boaters' behaviour in terms of anchoring in seagrass.

Community engagement and collaborative efforts in promoting respect of VNAZ

In the 2024 survey, 44% (67 out of 151) of respondents agreed that "Local authorities, boating clubs and/or marinas in my area actively encourage boaters to observe Voluntary No Anchor Zones".

The ReMEDIES project supported the installation of VNAZs in Solent, Plymouth and Fal & Helford. The acceptance and respect paid to VNAZs described in the feedback across the

three areas appears to have been helped by the initial preparation, engagement and communications made by ReMEDIES.

This preliminary work involved communicating with the community, harbour authorities, local operators, local councils, boaters and landowners. It included collaborative efforts to raise awareness, educate on the science of the chosen designation area, the purpose of the VNAZs and the evidence to support the effectiveness of VNAZs in protecting sensitive marine ecosystems.

> “Because of all the work that we've been doing through LIFE ReMEDIES and locally it [the VNAZ installation] actually came as no surprise to anybody. And the yacht owners just accepted it.”- Marine group, Fal & Helford

One specific reason highlighted by interview respondents across all areas as leading to both the success of the VNAZs and the ease with which they were accepted by communities, was the national reach of the REMEDIES campaign in increasing public awareness. Two interviewees described this:

> “There was such a swell of positivity towards seagrass and its protection.” - Marine group, Fal & Helford

> “Yachting communities are generally responsible and respect the rules. RYA is changing behaviours though education rather than regulations. Boaters are absolutely more climate aware: seagrass gobbles up carbon.” – Yacht club, Solent

Results - Motivation findings

To explore the change in boaters’ beliefs about the impact of anchoring and mooring and their intentions to protect the seagrass, we compared the reported attitudes towards seagrass in the 2024 survey to the 2021 survey as well as boaters’ responses to the feedback form after RYA training sessions. It is however important to remember that we do not know how representative these responses are of the wider boating community or how comparable the responses in the two surveys and the RYA feedback form are.

Reflective motivation findings

Intentions to look up the location of seagrass

After the boaters’ webinars and training sessions led by the RYA, boaters were asked about their intentions to adopt what they had learnt during the training. Out of the attendees who competed the feedback form:

- 10% (18 out of 172) responded they already ‘look up the location of seagrass when choosing an anchorage or area to land and launch’.

- A further 82% (141 out of 172) responded it was likely/very likely they would adopt this learning from the training.

Therefore, a total of 92% (159 out of 172) of the boaters who attended the training and completed the feedback form reported that they either already did or intend to look up the location of seagrass when choosing an anchorage.

Beliefs about consequences of not protecting the seabed

In the 2024 survey, boaters were asked about the perceived consequences of not protecting the seabed (**Figure 11)**. The overall responses show:

- 78% (127 out of 163) of survey respondents agreed to the statement 'I feel a personal sense of responsibility to protect the seabed and seagrass'
- 71% (118 out of 166) of survey respondents agreed that 'Not protecting the seabed will have long-term negative consequences for marine life diversity in my boating area'

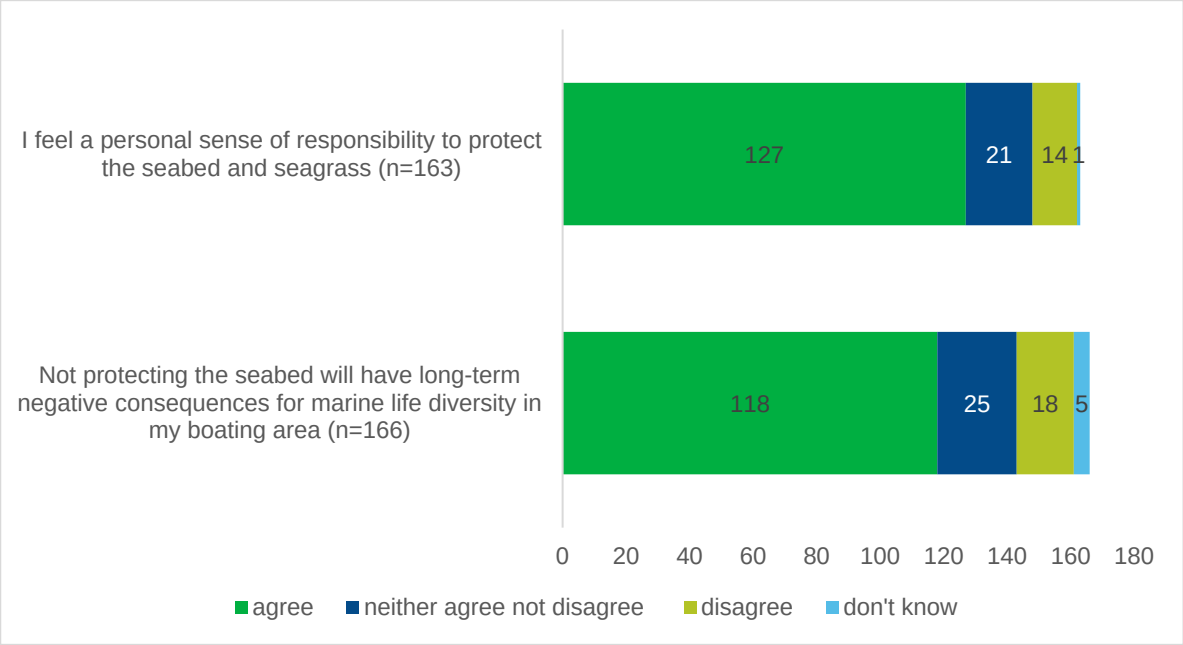

Figure 11. Responses to the questions about beliefs in 2024 survey

In the group who responded, 'it's never ok to anchor in seagrass', a higher percentage agreed to the statements compared to all those who responded:

- 92% agreed that "Not protecting the seabed will have long-term negative consequences for marine life diversity in my boating area"
- 97% agreed to the statement "I feel a personal sense of responsibility to protect the seabed and seagrass"

Beliefs on anchoring in Voluntary No Anchor Zones

In the 2024 survey, when respondents were asked about VNAZs, only 7% (9 out of 130) believed they did not have to avoid anchoring in seagrass providing the following reasons (respondents could select multiple answers):

- “I don’t believe I’m causing much damage to the seabed” (n=4)
- “Lack of other places to anchor” (n=4)
- “Concerns about sea conditions” (n=3)

Intention of using Advanced Mooring Systems

In the 2021 survey, boaters who completed the survey were asked about their intentions to use AMS. They were asked if they agreed with the statement “If an AMS system was available in the future, I would use it”: 68% (96 out of 141) agreed.

In the 2024 survey, respondents were asked “If you had a choice, would you choose an AMS over a traditional mooring?” 57% (109 out of 192) selected “yes” and another 28% (53 out of 192) selected “maybe”. The main reason boaters responded “no” or “maybe” was “I don’t know enough about AMS”, as selected by half of the respondents (50%, 27 out of 54). Only five people expressed concerns that AMS were not safe enough and one person responded having heard negative things about AMS from other boaters.

After the boaters’ workshops and webinars, 3% (5 out of 164) of boaters who completed the feedback form responded they already used an AMS (all attending in 2022) and 78% (128 out of 164) boaters responded they were likely/very likely to use an AMS when available. This suggests that 81% (133 out of 164) of boaters who attended training and completed the feedback form intended to use an AMS in the future.

The survey responses and interviews provide some indication there may be an increase in the percentage of boaters who are willing to use an AMS. However, this requires AMS to be available for them to use and harbour masters and mooring holders to be willing to install more AMS, which may be challenging according to the following interviewee:

> “I think the public are probably more prepared to use them than the actual providers. I'm trying to change the mindset as with a conventional mooring you can cram more moorings into an area then you can with AMS, they do need a bit more space. It's changing that mindset really and how to reconfigure all your moorings in a harbour area.” - Marine group member, Fal & Helford

Another interviewee, who is a boat owner in Solent, outlined the following barriers to implementing AMS: the impracticalities in terms of no ownership in Osborne Bay and the associated costs to manage this with between 50-100 boats coming in the height of summer.

Another interviewee described the barriers to installing AMS which are related to the seabed and weather conditions:

> “The nature of the seabed here, it's very tricky. [AMS] they don't work for us here in the harbour or tidal range. There's still obviously a lot of concern certainly from Harbour Masters over the eco-friendly moorings” – Harbour Authority Isles of Scilly

Results - Behavioural changes

To study if boating practices in relation to anchoring in seagrass have changed between 2021 and 2024, survey responses on looking up information about the location of seagrass, anchoring, use of AMS and use of VNAZs were compared. Observational studies were conducted by volunteers and local project teams to collect data on actual anchoring practices being used by boaters and to determine if they anchored in areas of seagrass or outside areas of seagrass. It is however important to remember that we do not know how representative the survey responses are of the wider boating community or how representative the observational data is of the behaviour of the wider boating community.

Looking up information on the location of seagrass

For boaters to be able to avoid anchoring in areas of seagrass, they need to be aware of where the seagrass is. Ways of becoming aware include information from other boaters, buoys marking the area, information panels that show the areas of seagrass, previous experiences, or looking up information before going boating.

In the 2021 survey, 54% (80 out of 147) of respondents selected ‘yes’ to the question ‘have you ever looked to see if there is seagrass where you plan to anchor?’. The 2024 survey data shows that 66% of respondents (135 out of 204) said they had always, often or rarely looked up the location of seagrass before they go boating. Only 28% said they had never looked up information on the location of seagrass.

Anchoring practices in areas of seagrass

The 2024 survey aimed to gather insights into boaters' practices related to anchoring in areas with seagrass and their adherence to environmentally responsible boating practices. Around a quarter (27%, 52 out of 191) of survey respondents reported they always or often avoid boating in areas of seagrass. Three quarters of respondents, (78%, 142 out of 183) indicated they always or often avoid anchoring in areas of seagrass.

Interestingly, the percentage responding they always or often avoided anchoring in areas of seagrass is higher for respondents who go boating in Plymouth Sound and Estuaries (91%) and Fal & Helford (92%), compared to the overall group of survey respondents

78%, n=162) (**Table 3**). However, the group sizes are small and it is not clear how representative these samples are of the overall group of recreational boaters.

Table 3. Survey responses on anchoring in areas with seagrass (2024 survey)

Respondents' area of boating	Always avoid anchoring in seagrass	Often avoid anchoring in seagrass	NET always/often avoid anchoring in seagrass (%)
Plymouth Sound and Estuaries (n=50)	46%	45%	91%
Fal & Helford (n=44)	37%	55%	92%
Solent / Isle of Wight (n=58)	31%	48%	78%
All ReMEDIES areas (n=94)	40%	42%	81%

Note: numbers for Isles of Scilly (n=17) and Essex Estuaries (n=14) are too small to be included in the descriptive statistics.

In the 2024 survey, the percentage who responded 'always avoid anchoring in the seagrass' was 41% (75 out of 183). In the 2021 survey, 17% (25 out of 146) of respondents reported they had never anchored in seagrass. This might suggest there is a rise in the percentage of boaters who report that they avoid anchoring in areas of seagrass, though it is not known how comparable the respondents are between the two surveys and how representative these samples are for the wider boating community.

When boaters decide to anchor in seagrass, the best practice guidelines suggest they should use the minimum amount of chain to prevent damaging the seabed by the dragging of the chain. 21% (36 out of 168) of 2024 survey respondents reported they always or often 'shorten their chain to reduce damage to the seabed'.

In the 2021 survey, boater participants were asked a yes/no question whether they observed (adhered to) VNAZ, with 98% responding 'yes'.

In the 2024 survey, out of the respondents who have a VNAZ in their boating area, three quarters (75%, 97 out of 130) responded they always avoid anchoring in the VNAZ, with a further 16% (21 out of 130) saying they often avoid it. Overall, this is 91% net of respondents always/often avoiding anchoring in VNAZs. Due to the differences in how the question was asked between the 2021 and 2024 survey, the results cannot be compared.

Observational studies on boaters' anchoring practices in areas without restrictions

As part of the ReMEDIES project, observational studies of boaters' anchoring practices were completed. These visual surveys were conducted by local teams and volunteers to observe the number of boats which anchored in areas of seagrass and the number of boats which anchored outside areas of seagrass.

Observational surveys were completed in five areas in Solent (2021, 2022, 2023 and 2024) and Fal & Helford (2020). The largest number of boats in the Solent area were observed in Osborne Bay from a central survey point (**Figure 12**).

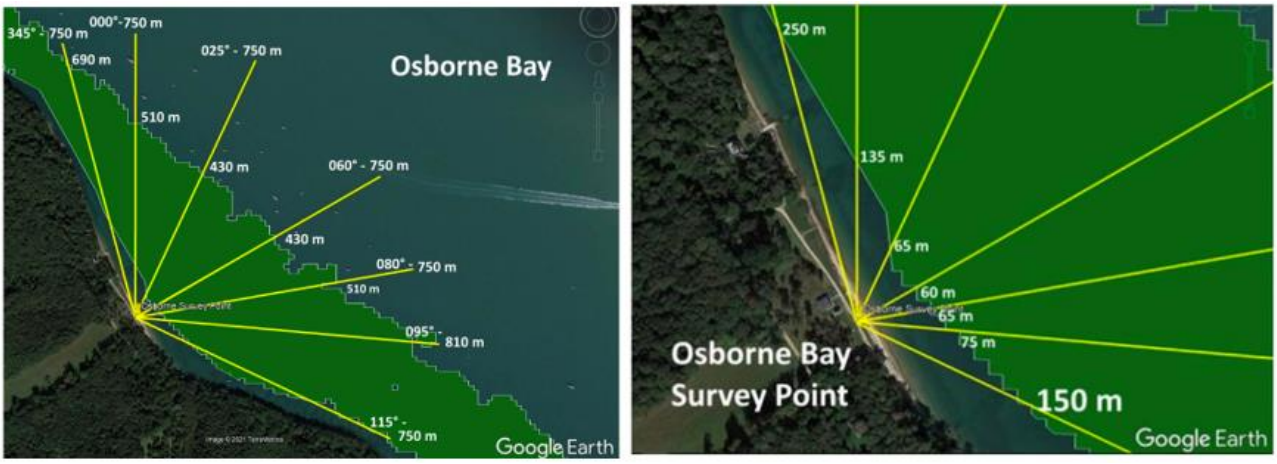

Figure 12. Osborne Bay Survey Area Charts showing sight lines and relevant distances (Images from Solent Maritime SAC Recreational Surveys 2021 report, March 2022)

The average number of vessels observed at Osborne Bay was 41.3 in 2021, 41.7 in 2022 and 41.8 in 2023, though the comparability of this data is unknown and local teams highlighted several external factors and caveats (e.g. a potential change in the demographic due to Covid - in 2021 there may have been a higher proportion of local boaters, due to restrictions in travelling, who are more aware of the local area and habitats). The data might suggest that over the last three years the percentage of boats observed anchoring in seagrass in Osborne Bay (Solent) has changed from 27% (2021) to 43% (2023) (**Table 4**). If this trend was accurately observed and were to continue, the extrapolation of data suggests that by the summer of 2024 just over 50% of boaters might have chosen to anchor in areas with seagrass.

To reduce damage to the seagrass a VNAZ was installed in March 2024.

Table 4. Summary of observational studies in areas without restrictions

Area	Year of study	Total number of boats observed anchoring	Number of boats anchored outside seagrass	Number of boats anchored in seagrass	Percentage of boats anchored in seagrass
Solent (Osborne Bay)	2021	292	213	79	27%
Solent (Osborne Bay)	2022	271	178	93	34%
Solent (Osborne Bay)	2023	270	153	117	43%
Fal & Helford (St Mawes and Trefusis)	2020	159	14	145	91%

The data set from an observational study in Plymouth (Cawsand, 2020) only recorded the number of vessels anchored, without providing information if this was in or outside areas of seagrass. The 2023 Plymouth observational report did not include data on anchoring sites.

A 2024 report from the Isles of Scilly, describes how 27 high-resolution Electro Optical (EO) images (satellite images) between 2017 and 2021 were analysed. 2,184 vessels were detected in total: 237 detections, or approximately 15% of total detections, were observed over the subtidal seagrass meadows. Of these 237 detections, 195 (82%) were observed to exhibit anchoring behaviour.

The observational study in Essex (2021) mentions there are only small patches of seagrass totalling <0.01ha in Jacques Bay and little recreational activity was observed. Two thirds of boats in Essex were reported to use moorings and no specific information was provided on where boats anchor. One interviewee expressed concerns about the severe loss of seagrass around the Essex coastline:

> “They've lost a staggering amount of seagrass around the Essex coastline and a lot of this is due to poor water quality and nutrification. You've got agriculture and fields right up to the estuary. So you can clearly see the impact. So when you do see a meadow, it's very small in comparison with other locations around the UK. I've been using St Lawrence as my sort of healthy donor Meadow, where the actual seagrass condition is good.” – Seagrass restoration Lead, Essex

Observational studies on boaters' anchoring practices in VNAZ

Observational studies in the Voluntary No Anchor Zone at Grebe Beach in Helford (**Table 5**) show that the percentage of boaters observed anchoring in seagrass in the VNAZ was between 10% and 20% during the annual observation studies in 2020, 2021, 2022 and 2023. This is much lower than the 91% of boaters anchoring in seagrass which was reported in 2021 for other areas in Fal & Helford (St Mawes and Trefusis).

Table 5. Voluntary No Anchor Zone observational studies

Area	Year of study	Total number of boats observed anchoring	Number of boats anchored outside seagrass	Number of boats anchored in seagrass	Percentage of boats anchored in seagrass
Helford (VNAZ)	2020	84	70	14	17%
Helford (VNAZ)	2021	64	52	12	19%
Helford (VNAZ)	2022	91	73	18	20%
Helford (VNAZ)	2023	40	36	4	10%
Solent - Osborne Bay (VNAZ)	2024*	56*	44*	12*	21%*

Note. *Preliminary results of three random days of summer 2024 observation study only (11th August, 8th September and 15th September).

One interviewee speculated on the results of the observational survey in Helford, although other explanations are possible:

> "We've been doing this observations survey for four years, but the anchoring has changed. We count the people outside on the edge of the no anchor zone and then we also count the ones that have just moved off completely and are on the other side of the river. The anchoring culture is just completely changed and there's more people going on to the other side of the river."– Interviewee, Helford

The ReMEDIES project supported the installation of VNAZs in Solent, Plymouth and Fal & Helford. The use of several large, vibrant yellow buoys to signify the presence of a VNAZ meant that in popular areas, interviewees reported immediate, noticeable absence of boats from within the zone and a change of boating behaviour:

> “VNAZ buoys very prominent, clear and bright in Osborne Bay, and even on a hot sunny day the area within the zone was clear” - Yacht owner and club member, Solent

> ‘‘So, 2023 last year was the first time we had five buoys along there. It was much, much more visible and we'd expanded, we'd taken the buoys outwards, and we'd always been told that nobody would like it. But actually because of all the work that we've been doing through LIFE ReMEDIES and locally, it actually came as no surprise to anybody. And the yacht owners just accepted it’, - Estuary Officer, Fal & Helford

> “In Osborne Bay we laid four new and moved existing four buoys and ended up with a proper VNAZ. The day that we were installing them it was doing what it was supposed to, it kept all the boats to the right side of the beach. It almost worked from day one.” – Local harbour, Solent

> “You can see there's no-one anchoring from a certain point to the right and there are a couple of boats anchored to the other side outside of the no anchor zone. The observational evidence would indicate that it's being well accepted.” - Scientific diving manager, Plymouth

> “Plymouth hosted a massive sailing race [shortly after VNAZ implemented] and you could see that people were keeping out of that zone. It helped that Plymouth City Council were on board and part of the project.” - Local team, Natural England

In many interviews across the sites there were descriptions of members of communities, including children and families, policing the VNAZ by informing any boaters who entered the VNAZ to respect the area.

> “What you'll find is that people sitting on the beach will see somebody come in from a yacht that's anchored in there and they'll go up to them and they'll tell them and say excuse me, you shouldn't be anchored in here.” - Marine group, Fal & Helford”

Further evidence of the seeming success of VNAZs is what has been reported as their ‘self-policing’ nature. Some interviewees reported if boats from a boating or sailing school are seen to be anchoring in the VNAZ, this causes harm to the reputation of that business. And, with social media and phone cameras, such news and evidence can spread quickly.

> “Once the word gets out that you've got to anchor to the east of the yellow buoys, you will be amazed how effective it will be because it's almost becoming self-policing. If somebody anchors inside it, it will hit social media so quickly, reputation wise, and certainly if it's a sailing school boat or a charter boat or something like that, it doesn't

> take long to go round whose it is and obviously it becomes a massive reputational thing then. So hopefully because of where it is and the people that use, it will be, you know, pretty successful almost by design." - Harbour Authority, Solent

> "I don't think anybody was unduly bothered. I mean, I think there was a little bit of concern within my club and I'm sure with some clubs that people were gonna start getting banned from anchoring places. But the Jennycliff VNAZ is pretty small. There's quite a big area to anchor. It's pretty straightforward to stay out of the voluntary no anchor zone." – Yacht owner, Plymouth

One interviewee discussed their experience of the Portland Bay VNAZ (not a ReMEDIES site but useful for wider context):

> "For VNAZ, it's important it is chosen based on scientific evidence and that there is a suitable alternative affordable place for mooring. In Portland Bay there were concerns about societal barriers of limiting freedom of yachters. There were some concerns about safety. So, can you anchor there if you're in a crisis? The answer is yes. But I don't think everybody knows that it's not legally enforceable. There were also concerns about limiting affordability. So, if you can't anchor for free here, do you have to pay to moor elsewhere?" - Science officer, Plymouth

A small sample of three observational days (summer 2024) for Osborne Bay provided preliminary results which suggests that the installation of the VNAZ in early 2024 might have helped to reduce the percentage of boats anchoring in seagrass. In 2023 the percentage of boats observed anchoring in seagrass in Osborne Bay was 43%. The small sample of preliminary data for 2024 suggests this was 21% in the summer of 2024, after the installation of the VNAZ. It is important to emphasise the preliminary results are based on a small number of boats (n=56) and only three days of observational studies. Local teams highlighted that boating behaviour is impacted by the weather, holidays and events, it is therefore important to complete the analysis of the full data set to review these findings.

Boaters' use of AMS

In the 2024 survey 22% (31 out of 138) of survey respondents reported having used an AMS, which is much higher than the 5% (8 out of 151) reported in the 2021 survey, though we don't know how comparable these two sets of boaters are. These responses may suggest that availability and use of AMS has changed between 2021 and 2024.

One boater described how straightforward the process was to get an AMS, (a Seaflex system, a floating chain type system where they buoy the chain with small buoys to keep the chain off the bottom to avoid damage from rotation) and why their decision to get an AMS was based on their experience of damaging seagrass:

> "For a long time, I used to keep my boats literally at anchor in the bay. I'd just leave them there with a large amount of chain out and a big anchor. And we certainly knew

> that we were picking up a lot of seagrass when we were picking up the anchor. The AMS process was straightforward. They won't charge you for it. They [only] charge you an administration charge if you like to put your name against a piece of seabed where you can put a mooring. It is nominal, £17, £18 a year or something. Very easy to use, you just tie up to it." - Mooring owner of 15 tonne boat, Plymouth

One interviewee who had an AMS installed by the ReMEDIES trial said that one of the main reasons boaters participated was because the AMS were funded by ReMEDIES and were therefore free for the first three years. Another incentive for boater participation in the trial was that it allowed old costly moorings to be replaced with very high-quality modern moorings for free.

However, one interviewee described technical difficulties with installing AMS in the Cawsand Bay trial:

> "AMS ground anchor screws into the seabed. They're very difficult to fit. I think they're about a metre and a half long. There wasn't as much sand there as they thought, they were hitting bedrock, and you really need to get them all the way down to the shaft - they've got a bar shaft on the top of them sticking out of sediment. You really need to get all the screw section in and I think they struggled with that a lot." – Academic involved in trial in Cawsand Bay, Plymouth

This interviewee also expressed concerns around how they expected ground anchor AMS to impact on insurance:

> "A mooring it needs to be annually tested and serviced and then you get a certificate for your boat insurance. One of the problems with the ground anchor design is on a typical mooring on a concrete block, you'd have a barge would go and lift the concrete block up to sit water level so the whole mooring would be off the seabed. Guys on the barge will check everything, all the shackles, wear on the chain, replace anything that needs changed and just drop it back down again. With the ground anchors that they've used, they're put in with a tool which is almost like a massive hydraulic wrench, they've got to be screwed into the seabed, which means you can't get them back out again easily. Apart from with divers. I think one of the issues is going to be that they can't check the moorings, they're going to say we can't provide insurance. I'm less convinced about the ground anchors. The concrete block is an easy solution and although it does kill seagrass which is directly under the block, the blocks are not that big. It's a very easy mooring to service. The advantage with them is it's a practical long-term solution." – Academic involved in trial, Cawsand Bay, Plymouth

Impact on quality and volume of seagrass

One of the divers involved in mapping the extent of seagrass coverage provided evidence of a positive impact from a VNAZ on seagrass coverage at Jennycliff, Plymouth Sound and Estuaries SAC:

> "I used to dive there [Jennycliff] many moons ago, probably decades ago now and from recollection there was very little seagrass there. Whereas when we dived on Monday, there was actually a surprisingly higher percentage of seagrass cover than I was expecting. And it seemed a lot more uniform, sort of density coverage, really much more regular [compared to other areas]" – Scientific diving manager, Plymouth

They continued explaining that they looked at the impact of installing AMS:

> "Specifically looking at the direct impact or current status of the seagrass beds within the area of the advanced mooring systems. So, we were looking at the density and growth within the moorings prior to the advanced mooring system going in and then subsequent to the advanced mooring system being implemented."– Scientific diving manager, Plymouth

After installing AMS, seagrass beds showed noticeable improvements:

> "When we first surveyed them, the beds were noticeably scoured around the chained mooring systems, the old-style moorings. And then once the new mooring systems are in place we then surveyed within two years of them being input and there was a noticeable improvement in the seagrass, a noticeable reduction of the scoured area." – Scientific diving manager, Plymouth

The findings from the results section are presented in **Table 6** and the infographic (**Figure 13),** the results suggest the potential contribution of the ReMEDIES project to changes in anchoring behaviour although we do not know how comparable the survey samples are and attribution to ReMEDIES is not possible.

Table 6. Findings in relation to the behaviour evaluation indicators. Note, some cells are left blank.

Question	Evaluation indicators	Start	End
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P1 Behaviour change reported by surveyed volunteers involved in mapping seagrass and surveying of boats	3 out of 29 volunteers report high level of awareness of threats to seagrass beds (before volunteer work)	21 out of 29 volunteers report high level of awareness of threats to seagrass beds (after volunteer work)
1.1 Do boaters and other coastal users understand the	P2 Level of awareness of the importance of		16% of survey respondents who engaged with

Question	Evaluation indicators	Start	End
importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	seagrass habitats reported as a result of the interpretation panels		interpretation panels report having a better understanding of seagrass and its importance
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P3 Number of boaters who report a change of awareness that anchoring and moorings can have an impact on seabed habitats after workshop		77% of boaters who attended a workshop report and completed a feedback form increased awareness of possible impact of anchoring and mooring
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P4 Evidence of boaters who think it is ok to anchor in seagrass	20% think it is ok to anchor in the seagrass (2021)	6% of survey respondents think it is always ok to anchor in the seagrass (2024)
1.1 Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	P5 Evidence of school pupils reporting a change of understanding of seagrass habitats		90% of pupils who attended workshops reported learning things about seabed habitats
1.1 Do boaters and other coastal users	P6 Understanding of possible damage to	No data about understanding	19% of pupils' drawings showed an

Question	Evaluation indicators	Start	End
understand the importance of ecologically sensitive seagrass habitats? (Capability and Motivation)	seagrass by anchoring among school pupils	before school workshops	understanding of possible damage to the seabed by anchoring
1.2 Do boaters and other coastal users have information on the location of seagrass? (Capability and Opportunity)	P7 Awareness levels on the location of seagrass reported as a result of the interpretation panels		16% of survey respondents reported the interpretation panels helped them find information about the location of seagrass
1.2 Do boaters and other coastal users have information on the location of seagrass? (Capability and Opportunity)	P8 Evidence of boaters and other coastal users reporting they have sufficient information about the location of seagrass	54% of survey respondents report information sources to look up the location of seagrass (2021) although it is not known how representative either of the samples are of the wider boating community.	84% of survey respondents report information sources to look up the location of seagrass (2024) although it is not known how representative either of the samples are of the wider boating community.
1.2 Do boaters and other coastal users have information on the location of seagrass? (Capability and Opportunity)	P9 Evidence of boaters who report the workshop helped them to understand where to find information to help locate seagrass		91% of boaters who attended training and completed a feedback form (n=150) reported an increased awareness of where to find information to help locate seagrass areas

Question	Evaluation indicators	Start	End
1.3 Do boaters and other coastal users have information on how they can reduce their impact on seagrass beds? (Capability and Opportunity)	P10 Evidence of boaters who report the workshop resulted in a change of understanding of anchoring best practice		82% of boaters who attended training and competed a feedback form reported increased awareness of anchoring best practice
1.3 Do boaters and other coastal users have information on how they can reduce their impact on seagrass beds? (Capability and Opportunity)	P11 Evidence of boaters who report the workshop resulted in a change of awareness of how AMS can help minimise impacts on seabed habitats		82% of boaters who attended the training and completed a feedback form reported increased understanding of AMS and how they can minimise impacts on the seabed
1.4 Do coastal users aim to reduce their impact on seagrass habitats? **(Capability and Motivation)**	P12 Number of boats and other coastal users moving through seagrass areas at the time of the observation survey	No data before ReMEDIES project started	No comparable data
1.4 Do coastal users aim to reduce their impact on seagrass habitats? **(Capability and Motivation)**	P13 Number of boats anchoring or mooring in seagrass at the time of the observation survey		Preliminary results suggest the percentage of boats anchoring in seagrass at Osborne Bay might have reduced since installation of the VNAZ: from 43% (2023) to 21%

Question	Evaluation indicators	Start	End
			(2024, 3 days data only)
1.5 Do boaters observe best practice e.g. use minimum amount of chain? **(Motivation)**	P14 Number of boaters reporting they use Advanced Mooring Systems when available	5% of survey respondents use AMS (2021)	22% of survey respondents use AMS (2024)
1.5 Do boaters observe best practice e.g. use minimum amount of chain? **(Motivation)**	P15 Evidence of boaters reporting they adopt anchoring best practice e.g. use minimum amount of chain	No comparable data	21% of survey respondents report shortening their chain to reduce damage to the seabed (2024)
1.6 What is the attitude of boaters towards Voluntary No Anchor Zones and Advanced Mooring Systems? (Capability, Opportunity, Motivation)	P16 Level of awareness of VNAZ and attitude towards VNAZ	98% of survey respondents (2021) say 'yes' they observe a VNAZ	91% of survey respondents who have a VNAZ in their boating area report they always/often avoid anchoring in a VNAZ
1.6 What is the attitude of boaters towards Voluntary No Anchor Zones and Advanced Mooring Systems? (Capability, Opportunity, Motivation)	P17 Level of engagement with boaters, boating clubs, mooring owners and harbour masters on AMS	46% of survey respondents aware of AMS (2021)	70% of survey respondents aware of AMS (2024)
1.6 What is the attitude of boaters	P18 Interest by harbour masters and	No comparable data from harbour	According to anecdotal evidence

Question	Evaluation indicators	Start	End
towards Voluntary No Anchor Zones and Advanced Mooring Systems? (Capability, Opportunity, Motivation)	mooring holders in installing AMSs	masters and mooring holders. 0% of survey respondents reported ‘there is often an AMS available for me when I go out boating’ (2021)	from mooring holders interest in AMS is increasing. 62% of survey respondents from the south coast of England have access to an AMS in their area (2024)

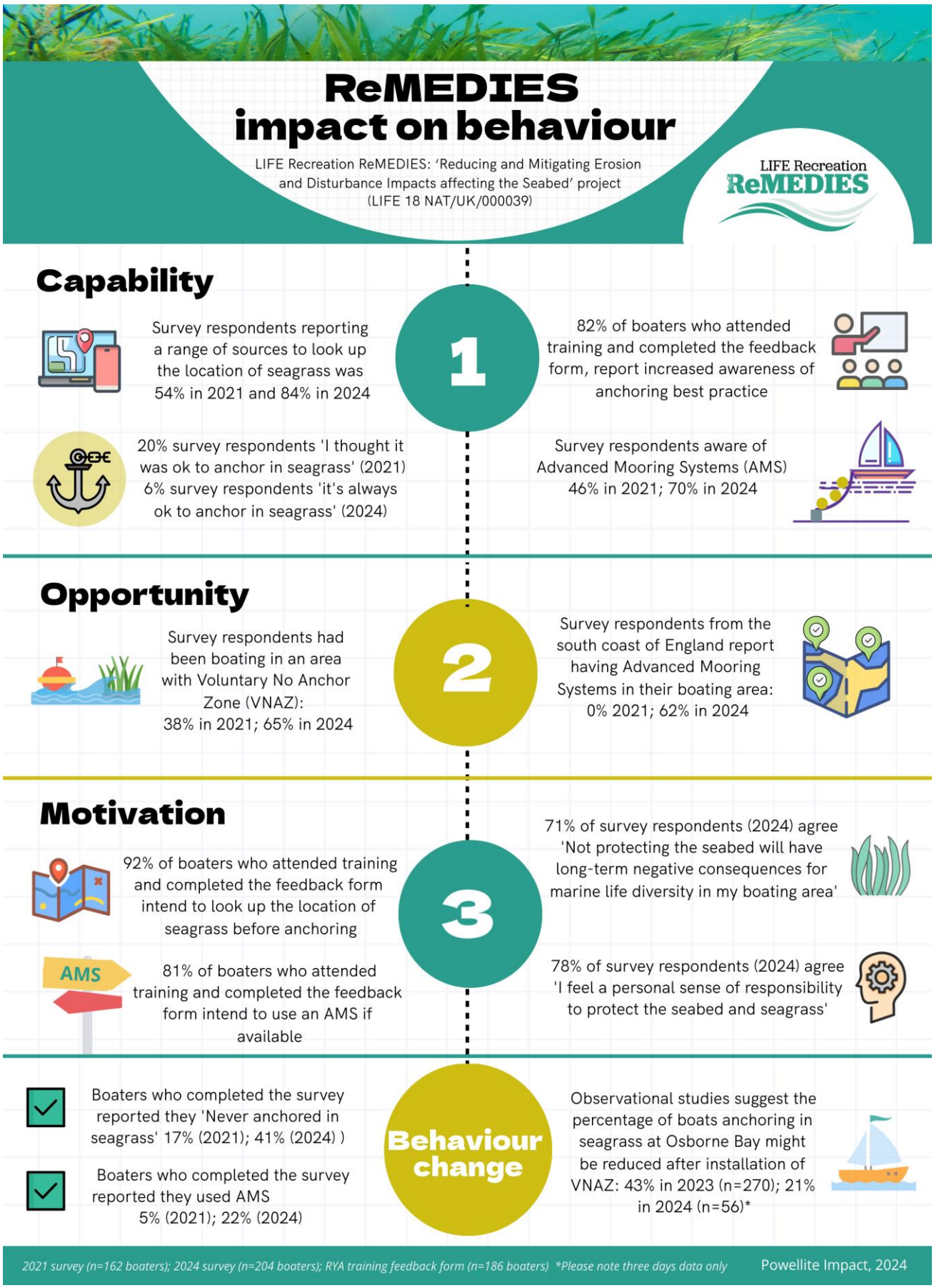

Figure 13. Infographic representing key findings of the behavioural evaluation

Conclusion and discussion

The main evaluation question was '**Have boaters and other coastal users changed their behaviour and avoided damaging the seagrass beds?**'. Reviewing the data and keeping the limitations of this evaluation in mind, the answer is there are some indications that some changes in anchoring behaviour may have taken place. However, as a result of the limitations of this study it was not possible to establish causal links between activities and behaviour change. **Therefore, we don't know if the observed behaviour change can be attributed to ReMEDIES.**

Overall, this evaluation showed an increase in the awareness and understanding of the importance of ecologically sensitive seagrass habitats in a range of audiences (**Table 7**).

Table 7. Awareness of seagrass habitat importance among boaters and coastal users

Do boaters and other coastal users understand the importance of ecologically sensitive seagrass habitats?
16% of survey respondents who engaged with interpretation panels report having a better understanding of seagrass and its importance
77% of boaters who attended a workshop and completed a feedback form report increased awareness of possible impact of anchoring and mooring
6% of the 2024 survey's respondents think it is always ok to anchor in the seagrass compared to 20% of survey respondents in 2021 who reported thinking it's ok to anchor in seagrass
90% of pupils who attended workshops reported learning things about seabed habitats

The reported increases in awareness by attendees of RYA workshops are directly related to ReMEDIES activities, whereas the reported increase in awareness by survey respondents is expected to be related to ReMEDIES as well as other external factors, such as media activities, activities in harbours and boating clubs as well as word of mouth. The awareness raising activities evidenced the strong relationships that were built between Natural England, RYA, OCT, Marine Conservation Society and Plymouth Council//TEFC as activities were delivered jointly and findings were shared.

A previous report by Collingwood in 2021 suggested one of the main reasons recreational boaters anchored in seagrass was because they did not have information on the location of seagrass and did not know what sources to use to find the location.

The 2024 survey data showed that there was an increase in the percentage of recreational boaters who named sources to look up the location of seagrass (**Table 8**).

Table 8. Awareness of seagrass location among boaters and coastal users

Do boaters and other coastal users have information on the location of seagrass?
84% of survey respondents report information sources to look up the location of seagrass (2024); 54% of survey respondents in 2021 report information sources to look up the location of seagrass

When looking at the effectiveness of boaters' webinars and workshops, the results from the surveys completed by RYA show these were an effective approach to increasing knowledge and understanding among recreational boaters on how they can minimise their impact on the seabed and can be directly attributed to ReMEDIES (**Table 9**).

In the 2024 survey, 18% (39 out of 214) responded they did not have training on anchoring but would be interested in training. This might suggest that the provision of training on anchoring with information on preventing damage to the seabed (as provided by the RYA) should be considered as a future approach to continue awareness raising on how seagrass habitats can be protected among boaters interested in training.

Table 9. Awareness of practices to reduce impact on seagrass

Do boaters and other coastal users have information on how they can reduce their impact on seagrass beds?
82% of boaters who attended training and completed the feedback form reported increased awareness of anchoring best practice
82% of boaters who attended training and completed the feedback form reported increased understanding of AMS and how they can minimise impacts on the seabed

The evaluation aimed to answer the question '**Do coastal users aim to reduce their impact on seagrass habitats?**' by reporting on the monitoring data collected in the observational studies. However, not all areas collected annual data and not all areas collected information about anchoring practices, a key limitation and lesson learned on the approach to behaviour change in the ReMEDIES project.

The large majority of survey respondents in 2021 (98%) and 2024 (91%) say they observe a VNAZ (**Table 10**). The small difference between these numbers is expected to be related to how the question was asked and the range of response options provided. Interviews with stakeholders in the ReMEDIES areas with a VNAZ suggested this voluntary approach seems to be highly effective. They suggested this was due to the

extensive communication and engagement with the boaters' community to encourage their buy-in.

Table 10. Boaters' beliefs towards VNAZ and AMS

What are the boaters' beliefs about Voluntary No Anchor Zones and the use of Advanced Mooring Systems?
91% of respondents who have a VNAZ in their boating area report they always/often avoid anchoring in VNAZ in 2021 98% of respondents said 'yes' they would observe a VNAZ. Please note the question was worded differently and a direct comparison between the two responses is not possible
70% of survey respondents aware of AMS (2024) compared to 46% of survey respondents in 2021
62% of survey respondents from the south coast of England have access to AMS in their area (2024), compared to 0% of survey respondents in 2021 who reported 'there is often an AMS available for me when I go out boating'

However, not all areas are open to the installation of a VNAZ, as some boaters see this as a way of curtailing their rights and freedom in the sea. One interviewee mentioned the high level of tensions in Studland Bay (outside ReMEDIES project areas) where they reported that people, divers and boaters who worked on the proposed installation of a VNAZ were threatened. Another interviewee mentioned the political challenges surrounding Cawsand Bay, which is a busy area where the seagrass beds would benefit enormously from a VNAZ. However, due to historic mooring rights within Cawsand Bay, the moorings are less organised and there are limitations to what the harbour master can do. Therefore, nobody seems willing to push for a VNAZ.

This evaluation shows there has been a clear improvement in the awareness and interest in AMS. In addition to this, there is also a reported increase in available AMS on the south coast of England, however ReMEDIES has not been entirely responsible for this increase (only 4 AMS visitor moorings were installed through ReMEDIES).

The evaluation showed more survey respondents in 2024 use AMS compared to survey respondents in 2021. In the 2024 survey, a fifth of boaters reported shortening their chain to reduce damage to the seabed (**Table 11**).

Table 11. Boaters' compliance with best practices

Do boaters observe best practice e.g. use minimum amount of chain?
5% of survey respondents in 2021 used AMS; 22% of survey respondents used AMS in 2024
21% of survey respondents report shortening their chain to reduce damage to the seabed (2024)

Have boaters and other coastal users changed their behaviour and avoided damaging the seagrass beds? Can this be attributed to the ReMEDIES project?

The results presented above suggest boaters who responded to the 2024 survey and completed the feedback form after RYA training might have a higher level of awareness, possibilities and intention to avoid damaging the seabed. The higher level of use of AMS and evidence of the impact of the installation of Voluntary No Anchor Zones suggest behaviour towards seagrass habitats has changed (**Table 12**). The reported changes observed in the anchoring behaviour of boaters after the ReMEDIES project installed the VNAZ in Osborne Bay are based on preliminary data of three observation days only. The full data set will need to be analysed to draw conclusions on the impact of installing the VNAZ. If the findings from the preliminary data are confirmed, the observed changes in behaviour can be directly attributed to the ReMEDIES project.

Table 12. Behavioural changes in boating practices

Have boaters changed their behaviour?
Preliminary results suggest the percentage of boats anchoring in seagrass at Osborne Bay has reduced since installation of the VNAZ: from 43% (2023) to 21% (partial data 2024). It should be noted that the partial data set in 2024 only consists of three days of data and the full data set will need to be analysed to check these preliminary findings.

There are several external factors such as media, activities from other organisations, messaging by boating clubs and discussions with fellow boaters influencing recreational boaters' behaviour, it is not possible therefore to attribute all of the reported positive changes in awareness, attitudes and reported behaviour to the ReMEDIES project, but it is important to recognise that ReMEDIES contributed to developing the right environment for these changes to take place and allowed for a strong partnership with the RYA, OCT, Marine Conservation Society and Plymouth Council//TEFC to be developed which will continue to provide support towards reducing the impact of recreational boating on seagrass habitats.

Lessons learned

This section reviews the main aspects and benefits of the approach taken by the ReMEDIES project. It then identifies the lessons learned and areas where improvements could be made for future projects to increase efficiency of project delivery and monitoring and evaluation. Finally, this section looks at recommendations that could be taken forward to further the progress work started by the ReMEDIES project.

Positives and main benefits

Community led approach

Interviewees recognised as one of the strong and unique aspects of the ReMEDIES work the prioritisation of sustained communication and education. This has meant relationship building, listening and providing information as a first step before taking any action. Then as a second step, involving the community and recreational boaters when decisions were made, allowing the community to contribute in a meaningful way as interventions were developed and delivered. Interviewees suggested that this approach resulted in acceptance, openness and inspired community involvement.

The benefit of this approach was seen in Fal & Helford where extension of the VNAZ was accepted without the anticipated resistance, and in Solent where the preliminary community engagement meant that the VNAZ was reported to be respected with an immediate self-policing effect. Interviewees also mentioned boaters taking their own initiative to protect marine areas with communities even calling for more VNAZs to protect larger areas of seagrass.

In the Isles of Scilly, the effectiveness of the community led approach was described as crucial for allowing the information disseminated by the ReMEDIES project to be heard by local communities and removed a sense of authorities imposing ideas on local boaters and people. Interviewees discussed the impact of this community led approach in the Isles of Scilly as being groundbreaking in terms of the receptiveness to this type of work that had previously been met with mistrust and unease.

> “They [the ReMEDIES Team] just kind of had the correct disposition saying: ‘We're helping you. We're here to support. We're not here to take anything away or to do our own agenda’ - which was a very positive project.” - Conservation manager, Isles of Scilly

National, consistent and uniform messaging

One aspect repeated across interviews in terms of the reach and effectiveness of the ReMEDIES work, was the national messaging. Mainstream messaging meant that information was heard in a different light and by different people. This seemed to bring the

conversation and importance of protecting the marine environment to the level of national relevance, in contrast to pockets of messaging from local conservation groups which can be easily ignored or dismissed by disinterested ears and sectors of society. This also meant that when recreational boaters heard about VNAZ installations and opportunities to use AMS their openness to change had already shifted somewhat having heard something about the project and its objective in mainstream media.

> "I think there's nothing better than getting into the national newspapers and onto national telly to be honest. It really does make everyone sit up and take notice. If it's not on the national media, they might just think it's a handful of conservation nutters that want to save the seabed." Environmental Officer, Fal & Helford

Partnership working and co-ordination of partners knowledge sharing

The union of many organisations in partnership to achieve the same aim resulted in a stronger force of change, many interviewees discussed how ReMEDIES harnessed the aims of many organisations under one umbrella mitigating what otherwise might have resulted in disjointed or misaligned efforts.

In particular, many interviewees valued the bi-weekly meetings arranged by Natural England for partners to share and discuss what approaches worked, what approaches did not work and the challenges being faced across the different ReMEDIES areas. The sharing of lessons learned, relationship building and education between teams in local areas and partnerships was highlighted as highly beneficial throughout and a key aspect of the successful running of the ReMEDIES project as a whole.

> "Having the workshops and the conferences where we all get together and talk about what works and talk about our case studies and talk about what doesn't work, was really valuable, I'm picking up things all the time." - Estuary Officer, Fal & Helford

Framework focusing on recreational activities – rather than commercial boats or trawling

Interviewees suggested that a valuable aspect of ReMEDIES in activating behaviour change was the targeting of the impacts of recreational boating and activities rather than of commercial fishing or trawling. Climate change messaging and messaging on environmental harms can often result in a sense of helplessness in society as the personal ability to make a difference is beyond the capacity of the individual or of a community. ReMEDIES, on the other hand, ignited education, conversation and action by addressing an impact that local communities and people can actively do something about and contribute to.

By demonstrating that recreational boating activities can cause harm to the marine environment and, in sequence, providing the tools for local boaters to mitigate that

environmental harm, with boaters who were interviewed reporting they felt empowered with a sense of personal responsibility and capacity to take action.

> “If it comes to fishing and trawling it's at such a high level that from a bottom-up perspective there's not that much the community feels they can do about that. And I think there's so much we could be doing in that even just from a charity-community stakeholder level.” Volunteer and boat user, Fal & Helford

Areas for improvement

The main areas for improvement to help improve workflows, communication and efficiency of the ReMEDIES project are described below.

Project Planning and sequencing in workstreams

The sequence of a number of workstreams within the project were highlighted as areas that would have benefitted from improved planning in the running order of events or tasks.

Seagrass mapping without the availability of the seagrass apps or maps

Boaters not having access to mapping via apps or maps was described as having the ‘cart before the horse’ by one interviewee as it meant the mapping had little value if boaters could not use the mapping to avoid anchoring in the seagrass. Planning the development and availability of apps first could be beneficial for future projects.

AMS trialling challenges

To deliver the AMS trial in Cawsand, Natural England, OCT and Plymouth City Council all had different responsibilities to make it happen as well as for ongoing management. It was mentioned at interviews that this caused delays and challenges in the flow of work with some boaters pulling out of the trial having waited too long for approvals and procurement processes. In future, ensuring one overarching organisation is responsible for all aspects of a trial would help improve efficiency.

Engineers for AMS installations and advice

The Natural England team recognised a lack of technical expertise to advise boaters and harbour authorities on installations and implications of AMS was a limiting factor for education, installations and ultimately uptake where boaters and harbour authorities may have needed reassurance and technical advice regarding safety and performance.

Further partnership building

Some organisations felt that their involvement at an earlier stage in the design of ReMEDIES, and to be classified as a partner, would have better utilised their skills. Engaging with all interested organisations at the beginning of the project to understand aims and benefits of collaboration between different organisations could help ensure all suitable organisations have an opportunity to be appropriately involved. It is also recommended by Natural England staff that academic institutions be involved in similar future partnerships.

Development and implementation of a structured behavioural science approach and monitoring and evaluation plan

This behavioural science evaluation conducted by Powellite highlighted how challenging it is to measure behaviour changes. Powellite thinks the ReMEDIES project would have benefitted from a clear and consistent behavioural science approach and monitoring and evaluation plan along with clear and consistent leadership and tools that are easy to use at the start of the project. This would have allowed each local project team to measure a baseline which is consistent across the whole project. This baseline could then be used as a starting point against which to measure impact and behaviour changes, both during and at the end of the project. The use of monitoring and evaluation tools should include training and support by NE to partners and local teams throughout the project.

Recommendations - Post-ReMEDIES

The ReMEDIES project is part of a global ambition to protect the marine environment, facilitate science-based education and to empower communities to take action. The ReMEDIES project has played a key role in increasing awareness and providing the tools and training necessary to change the behaviours of recreational boaters and coastal users across the five SACs in England.

To build on the community interest generated through the project, and other similarly intentioned projects, the question is, what next? What steps can be taken to build upon the current achievements and progress to further protection of the seabed and limit the damage from recreational activities? The following recommendations are based on feedback gathered through this evaluation process:

Harbour authorities and regulators to work together on implementing conservation aims into working priorities

Awareness raising, education and community empowerment are foundational steps to behaviour change. They can also help to indicate if regulatory or policy change should be the next step in achieving an objective. Several interviews raised that the potential next step in protecting the seabed from recreational activities and limiting the damage from

recreational boating is moving to formal incorporation of protecting the marine environment into the working priorities of harbour authorities.

Continued engagement across communities and organisations

One of the highly rated aspects of the ReMEDIES project is the community led approach and its ability to engage with a broad spectrum of people and organisations. To maintain awareness and the motivation within communities, continued work, partnerships and sharing of ideas between many different influential organisations would be highly beneficial. In particular, sharing the feedback of the successes and impact of each ReMEDIES area with all the other areas is sought and is planned as part of ReMEDIES AfterLIFE plan.

AMS designs for difficult sea conditions

The installation of AMS in difficult or unpredictable sea conditions or in intertidal habitats can be a practical limitation of current designs. This meant that, for example, in the Isles of Scilly the installation and use of AMS were deemed unsuitable. One interviewee suggested further funding for research and development of AMS designs would be a positive continuation of the work conducted by the ReMEDIES project. The responses in the 2024 survey and interviews suggest work will need to continue to reassure boaters and harbour authorities of the safety of AMS. It is anticipated that the easier it is for boaters and harbour authorities to install and use AMS the greater the acceptance and willingness to use them.

Ambassadors of ReMEDIES to present/train at yachting clubs

The training hosted and facilitated in collaboration with the RYA, Natural England and partners with recreational boaters on anchoring practices was highly rated in the project. An idea from a chairman of a yachting club was for project leads to present at social events at yachting clubs on the aims of the project and the available tools to protect the seabed. It would be important to open the training up to the boating community rather than “invite only” training to reach more people in the boating community, such as those who do not attend invite only events. The 2024 survey demonstrated around a fifth of respondents did not have training on anchoring but would be interested in training.

Provide coastal hospitality venues with information

People who visit coastal communities in their own boat may miss the information on how to protect the seabed and where seagrass is located. As a way of addressing this, working with hospitality venues such as accommodation, restaurants, bars and shops to provide information and codes of conduct to guests and customers could help to inform more recreational boaters of the purpose of VNAZ, the use of AMS and the location and importance of seagrass.

Appendix 1 List of questions used in interviews with local project teams

1. Where are you based?
2. How long have you been in post for?
3. Role and responsibilities?
4. What seagrass mapping activity have you carried out so far?
5. What are your plans and timescales for completing seagrass mapping?
6. What evaluation outputs are you planning?
7. What data do you have on the behavioural impact of seagrass mapping? When/where was the data gathered? How was the data gathered? Number of respondents? Method?
8. Are there any evaluation outputs you can share with me, for example a report or a dataset?
9. What outputs are you planning for this piece of work? When will these be available? Can you share them with me when they're ready?
10. If nothing is planned, what do you think would be the best way to collect data on the effectiveness of seagrass maps to change boaters' behaviour?
11. Tell me about any installation of interpretation panels you've carried out so far?
12. Was this done by your team or the Natural England comms team?
13. What are your plans and timescales for installing interpretation panels?
14. What evaluation outputs are you planning?
15. What data do you have on the behavioural impact in terms of the public engagement with interpretation panels? When/where was the data gathered? How was the data gathered? Number of respondents? Method?
16. Are there any evaluation outputs you can share with me, for example a report or a dataset?
17. What outputs are you planning for this piece of work? When will these be available? Can you share them with me when they're ready? If nothing is planned, what do you think would be the best way to collect data on the effectiveness of the interpretation panels?
18. Tell me about any workshops and/or training of recreational coastal users you've carried out so far?
19. Did you deliver this or was this delivered by one of the partners? Who?
20. What are your plans and timescales for training and workshops? What evaluation outputs are you planning? What data do you have on the behavioural impact? When/where was the data gathered? How was the data gathered? Number of respondents? Method?
21. Are there any evaluation outputs you can share with me, for example a report or a dataset?
22. What outputs are you planning for this piece of work? When will these be available? Can you share them with me when they're ready? If nothing is planned, what do you think would be the best way to collect data?
23. Has the learning programme in schools been delivered in your area? What was your experience of this work? What have been the barriers to delivery in your area?
24. Have you established a VNAZ in your area? If so please tell me about what you've done around installing a VNAZ.
25. What are your plans and timescales for installing a VNAZ? What evaluation outputs are you planning? What data do you have on the behavioural impact? When/where

was the data gathered? How was the data gathered? Number of respondents? Method?

26. Are there any evaluation outputs you can share with me, for example a report or a dataset?
27. Have you installed AMS in your area? If so please tell me about what you've done around installing AMS. What are your plans and timescales for installing AMS?
28. What evaluation outputs are you planning? What data do you have on the behavioural impact? When/where was the data gathered? How was the data gathered? Number of respondents? Method?
29. Are there any evaluation outputs you can share with me, for example a report or a dataset?
30. What would you say are the key achievements locally of ReMEDIES activity?
31. What are the main barriers or difficulties you've encountered?
32. How do you feel the ReMEDIES project impacted on communities?
33. What has been your experience of working with the partner organisations e.g. Marine Conservation Society, Ocean Conservation Trust, Plymouth City Council/TECF and the Royal Yachting Association?

Appendix 2 List of questions used in interviews with external stakeholders

1. Can you tell me a little bit about who you are and your involvement with the ReMEDIES work please?
2. Overall, do you think perceptions of the importance of seagrass and sensitive marine habitats has increased over the life of the ReMEDIES project within your area?
3. Could you tell me about the activity you have been involved in and what you did?

Seagrass Mapping

- Do you feel the ReMEDIES activities have increased your knowledge about seagrass and seabed habitats? What did you learn?
- Can you tell me about the volunteer boating surveys and seagrass mapping - did volunteers report/witness any behaviour change between surveys?
- Do you have any examples?
- Could you tell me about seagrass mapping – do you have examples of how it improved access to information on the location on seagrass amongst boater and other coastal users?
- If needed, do you have any examples of a difference in behaviour or attitude?
- Were there any barriers – for example not having access to maps showing the location of sea grass?

Interpretation Panels

- Do you have a boat? Do you look up seagrass information before you go out on the water? Why?
- Could you tell me about the installation of panels and whether you think it helped to increase the importance of seagrass in your area? Amongst boaters? The community in general?
- Do you think the interpretation panels helped to change awareness of the location of seagrass?
- Do you have any examples?
- Do you think there are an effective tool, what could be done differently?

Workshop and training

- Do you feel the ReMEDIES activities have increased your knowledge about seagrass and seabed habitats?' What did you learn?
- Could you tell me about workshop and training and whether do you think boaters/community improved their knowledge of anchoring practices as a result of the training? Amongst boaters? The community in general?
- Do you have any examples of a difference in behaviour or attitude?
- Are you aware of boaters reporting they had sufficient information about the location of seagrass?
- Were there any barriers?

VNAZ

- Do you go out on a boat in your area? Do you avoid the seagrass, do you respect the VNAZ, why?
- Could you tell me about the installation of VNAZ.
- Was there a change in attitude towards VNAZ? If yes, what do you think worked well to achieve this? Building of trust? Education, changes perceptions?
- Do you think it helped to increase awareness on the protection of marine habitats in your area? Amongst boaters? The community in general? What helped to achieve this?
- Do you have any examples? Were there any barriers?

AMS

- Do you go out on a boat in your area? Do you try to avoid the seagrass by changing the length of your chain or use AMS? Why?
- Could you tell me about the installation of AMS in your area?
- Was there a change in attitude/openness to AMS? Why? What helped this change?
- Do you think there was an increased level of engagement on AMS amongst boaters, boating clubs, mooring owners and harbour masters?
- Why? Do you have any examples?
- Did harbour masters and mooring holders change their willingness to install AMS? Can you tell me about that? What helped? Do you have any examples?

ASK ALL: **Lessons learned**

- Do you think the REMEDIES work has have a positive impact on the area?
- What would you like to see in the future?
- What do you think are the main benefits of a project like this?

Appendix 3 2024 Survey questions

Are you happy to take part in the survey?

Screener. What is your age?

Response:	Code:	Routing:
17 and under	1	THANK AND CLOSE
18-34	2	Q1
35-54	3	
55 and over	4	

IF CODE 1 SCREEN OUT AND DISPLAY FOLLOWING MESSAGE:

Thank you for your interest. Unfortunately, this survey is only open to those aged 18 and over.

A. Your boating experience

1. What type of boat do you use when you go boating for recreation? Please select all that apply

Response:	Code:
Yacht	1
Motor boat / power boat	2
Smaller boats, e.g. Rigid Inflatable Boat (RIB), trailer sailer	3
Dinghy	4
Personal watercraft, e.g. jet ski, Stand Up Paddleboard (SUP), canoe, kayak	5
Other, please specify (open text)	6

Response:	Code:
Don’t know	7

2. Where have you been boating for leisure in the last three years? Please select all that apply

Response:	Code:	Routing:
East coast of England	1	Q3
West coast of England	2	Q3
South coast of England	3	Q3
Wales	4	Q3
Scotland	5	Q4
Northern Ireland	6	Q4
Outside UK	7	Q4
I have not been boating in the last three years SINGLE CODE ONLY	8	Q5

ASK IF at least one of CODES 1-4 is selected AT Q2:

3. In the last three years have you been boating in any of these specific areas? Please select all that apply

Response:	Code:
Essex Estuaries	1
Plymouth Sound and Estuaries	2
Falmouth and Helford	3
Isles of Scilly	4

Response:	Code:
Solent / Isle of Wight	5
None of these SINGLE CODE ONLY	6

B. Your experience of boating and seagrass

4. We are interested in your views about seagrass. Which of the following statements best reflects your views?

Response:	Code:
It is always OK to anchor in seagrass	1
It is sometimes OK to anchor in seagrass	2
It is never OK to anchor in seagrass	3
Don't know	4

5. Before this survey had you heard about seagrass?

Response:	Code:	Routing
Yes	1	Q6
No	2	Q11
Don't know	3	Q11

ASK IF CODE 1 AT Q5:

6. Where did you hear about seagrass? Please select all that apply

Response:	Code:	Routing:
In the media	1	Q7
RYA (e.g. The Green Blue, website)	2	Q7
ReMEDIES: 'Reducing and Mitigating Erosion and Disturbance Impacts affecting the Seabed' project	3	Q7
Other SPECIFY (open text)	4	Q7
Don't know SINGLE CODE ONLY	5	Q7

7. Which of the following ReMEDIES activities did you engage with? Please select all that apply

Response:	Code:
I read interpretation panels/information boards in coastal areas	1
I took part in a training course, webinar or workshop for boaters	2
I visited the ReMEDIES website	3
I participated in a RYA event	5
I participated in a local event	6
I read a leaflet	7
Other, please specify (open text)	8
None of these SINGLE CODE ONLY	9
Don't know SINGLE CODE ONLY	10

8. Did you learn something new? Please select all that apply:

Response:	Code:
Yes, I now have a better understanding of seagrass and its importance	1
Yes, I now know where to find information about the location of seagrass	2
Yes, I now understand how to reduce damage to the seabed	3
Yes, other, please specify (open text)	4
I was already well informed SINGLE CODE ONLY	5
Don't know SINGLE CODE ONLY	6

9. In what ways, if any, have you changed your boating practice as a result of the ReMEDIES activities/information? Please select all that apply

Response:	Code:
I look up the location of seagrass before I go boating	1
I avoid boating in areas of seagrass	2
I avoid anchoring in areas of seagrass	3
I have shortened my anchor chain to reduce damage to the seabed	4
Other, please specify (open text)	5
I already did all of the above before ReMEDIES SINGLE CODE ONLY	6
I didn't change my boating practice SINGLE CODE ONLY	7
Don't know SINGLE CODE ONLY	8

10. In the last three years, which if any of the following information sources have you used to find out about the location of seagrass in the area(s) where you went boating? Please select all that apply:

Response:	Code:
Interpretation panels/information boards in coastal locations	1
Leaflets	2
Websites	3
Information at my local sailing club or marina	4
Information from the RYA	5
Other boaters e.g. via social media or word of mouth	6
Paper or electronic charts	7
Pilot guides	8
Apps	9
None of these	10

C. Anchoring and seagrass

ASK ALL:

11. Have you ever undertaken any training on how to anchor?

Response:	Code:	Routing
Yes	1	Q12
No, but I would be interested in training	2	Q13
No, not interested/no training needed	3	Q13
Don’t know	4	Q13

ASK IF CODE 1 AT Q11:

12. Did that training cover how you can prevent damage to the seabed when anchoring?

Response:	Code:
Yes	1
No	2
Don’t know	3

ASK ALL

13. How often do you do each of the following:
    a. Look up the location of seagrass before I go boating
    b. Avoid boating in areas of seagrass
    c. Avoid anchoring in areas of seagrass
    d. Shorten my anchor chain to reduce damage to the seabed

Response for each statement Q13 a-d:	Code:
Always	1
Often	2
Rarely	3
Never	4
Don’t know	5
Not applicable	6

D. Mooring Systems

14. What type of mooring/berth do you use? Please select all that apply.

Response:	Code:	Routing
Swing mooring (traditional)	1	Q15
Fore and Aft mooring	2	Q15
Pontoon mooring	3	Q15

Response:	Code:	Routing
Advanced Mooring System (AMS) / Eco mooring	4	Q20
None of these	5	Q15
Don’t know	6	Q15

ASK IF Q14 CODES 1-3,5,6

Advanced Mooring Systems (AMS), or eco moorings, are mooring systems designed to have less impact on the seabed than conventional swing moorings. They aim to minimise interaction with the seabed to prevent abrasion and therefore the potential to damage sensitive habitats.

15. Had you heard of Advanced Mooring Systems (aka eco-moorings, environmentally friendly moorings) or AMS before this survey?

Response:	Code:	Routing:
Yes	1	Q16
No	2	Q18
Don’t know	3	Q18

ASK IF Q15 CODE 1:

16. Are there any AMS in the area(s) you go boating?

Response:	Code:
Yes	1
No	2
Don’t know	3

17. Have you ever used an AMS?

Response:	Code:
Yes	1

Response:	Code:
No	2
Not applicable	3
Don’t know	4

18. If you had the choice, would you choose an AMS over a traditional mooring?

Response:	Code:	Routing:
Yes	1	Q20
No	2	Q19
Maybe	3	Q19
Don’t know/Not applicable	4	Q20

ASK IF Q18 CODES 2-3:

19. Why do you not want to use an AMS? Please select all that apply.

Response:	Code:
They’re not safe enough	1
I’ve heard negative things about AMS from other boaters	2
I don’t know enough about AMS	3
I don’t know how to get an AMS	4
Other, please specify (open text)	6
Don’t know SINGLE CODE ONLY	7

Response:	Code:
Not applicable for my type of boat	8

E. Voluntary no anchor zones

ASK ALL:

A voluntary no anchor zone (VNAZ) is an area where boaters are requested not to anchor. This can be put in place for a number of reasons including to protect seagrass from the impacts of boaters.

20. Have you been boating anywhere with a voluntary no anchor zone?

Response:	Code:	Routing:
Yes	1	Q21
No	2	Q23
Don’t know	3	Q23

ASK IF Q20 CODE 1:

21. How often did you avoid anchoring in the voluntary no anchor zone?

Response:	Code:	Routing:
Always	1	Q23
Often	2	Q23
Rarely	3	Q22
Never	4	Q22
Don’t know	5	Q23
Not applicable	6	Q23

ASK IF CODES 3 OR 4 (RARELY/NEVER) AT Q21:

22. Why do you rarely or never avoid anchoring in voluntary no anchor zones? Please select all that apply. Please select all that apply

Response:	**Code:**
It's not convenient for me	1
Lack of other places to anchor	2
I don't believe I'm causing much damage to the seabed	3
Concerns about weather or sea conditions	4
Seagrass and seabed habitats are a low priority for me	5
Other SPECIFY:	6
Don't know SINGLE CODE ONLY	7

F. Concluding question

ASK ALL:

23. Finally, to conclude this survey, to what extent do you agree or disagree with each of the following statements? GRID QUESTION, SINGLE CODE ONLY from the following Likert scale:

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree
- Don't know

STATEMENTS:

- I am confident in my ability to identify seagrass-rich locations in my area.
- I often observe other boaters taking actions to avoid damaging the seabed and seagrass.
- Local authorities, boating clubs and/or marinas in my area actively encourage boaters to observe Voluntary No Anchor Zones.
- Not protecting the seabed will have long-term negative consequences for marine life diversity in my boating area.
- I feel a personal sense of responsibility to protect the seabed and seagrass.

24. If you would like to share any other comments relating to ReMEDIES and/or the protection of seagrass and the seabed please use the box below – OPEN TEXT BOX (optional)

25. What is your gender?

Response:	**Code:**
Female	1
Male	2
Other gender identity	3
Prefer not to say	4

26. Which of the following best describes your ethnicity?

Response:	**Code:**
White - British	1
White - Other	2
Black, Black British, Caribbean or African	3
Asian or Asian British	4
Mixed or multiple ethnic groups	5
Other ethnic group	6
Prefer not to say	7

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