

**CROMER SHOAL CHALK BEDS
MARINE CONSERVATION ZONE**

ADAPTIVE RISK MANAGEMENT PLAN

F e b r u a r y 2 0 2 4



Prepared By:

Samantha Hormbrey, Kristina Gurova,
Luke Godwin, Judith Stoutt

EASTERN INSHORE FISHERIES AND CONSERVATION AUTHORITY

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Contact details:

Eastern Inshore Fisheries & Conservation Authority
6 North Lynn Business Village
Bergen Way
King's Lynn
Norfolk
PE30 2JG
Phone: (01553) 775321
Email: mail@eastern-ifca.gov.uk



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Purpose of this document

Regulators must seek to further the conservation objectives of Marine Conservation Zones by managing activities they authorise (Section 153, Marine and Coastal Access Act 2009¹).

This document sets out how Eastern IFCA is applying an “Adaptive Risk Management” (ARM) approach to managing the potting fishery in the Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ). It presents a long-term plan for management and monitoring of the fishery, alongside practical research to fill data gaps and assess the effectiveness of management in line with our vision for the MCZ (below).

Cromer Shoal Chalk Beds MCZ

Eastern IFCA’s Vision

	The Marine Conservation Zone is renowned for being a well-managed site that supports a thriving local fishery	
	The fishery supports local livelihoods and has long term prospects	
	The features of the Marine Conservation Zone are maintained in good condition	
	There is a positive, collaborative relationship between stakeholders and regulators, built on trust and shared ambitions	

¹ <https://www.legislation.gov.uk/ukpga/2009/23/section/153>

Chapter 1: Introduction provides background information, describes the issue and defines Adaptive Risk Management as the solution that aligns with Defra guidance on IFCA fisheries management and with Natural England’s statutory conservation advice to Eastern IFCA.

Chapter 2: Adaptive Risk Management Plan sets out Eastern IFCA’s ARM Plan, with indicative timescales for the development of management alongside research and monitoring.

Chapter 3: Development of Management provides further clarification on how voluntary and regulatory measures have been applied or are in development to manage the potting fishery in the MCZ.

This ARM Plan also signposts other relevant documents including:

- Eastern IFCA’s 2022 Potting Assessment²
- Natural England’s formal advice on this assessment (received January 2023)
- The Code of Best Practice for Lost and Stored Gear (2022)³
- Natural England’s online conservation advice (last updated May 2023)⁴
- Eastern IFCA’s Cromer Shoal Chalk Beds Byelaw 2023⁵
- Eastern IFCA’s 2023 ARM Interim Research Report (Hornbrey *et al.*, 2023)⁶

² Not yet published

³ <https://www.eastern-ifca.gov.uk/lost-gear-management/>

⁴ <https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UKMCZ0031&SiteName=cromer&SiteNameDisplay=Cromer%20Shoal%20Chalk%20Beds%20MCZ&countyCode=&responsiblePerson=&SeaArea=&IFCAAarea=&NumMarineSeasonality=&HasCA=1>

⁵ Agreed at the 51st Authority meeting (<https://www.eastern-ifca.gov.uk/authority-meeting-papers/>). Current status: submitted to the MMO.

⁶ https://www.eastern-ifca.gov.uk/wp-content/uploads/2024/01/2023_CSCB_MCZ_ARM_Interim_report_Final.pdf

1 Introduction

1.1 Potting in Cromer Shoal Chalk Beds MCZ

Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ) was designated in January 2016⁷. The site lies 200 metres off the North Norfolk Coast between Weybourne and Happisburgh and extends around 10 km out to sea (Defra, 2016). The site was designated to protect habitat and geological features, including subtidal chalk and peat and clay, which, when exposed, can provide structural complexity, and in turn, stable surfaces for seaweeds and static animals to settle on as well as nursery areas (Image 1A). At the time of designation, the site was also recognised as supporting traditional beach launched vessel crab and lobster fisheries (Image 1B, C & D) and it was assessed that the designation would not have any financial impact on the local fishery because of the general understanding that potting fisheries did not cause significant lasting impacts to rocky habitats.

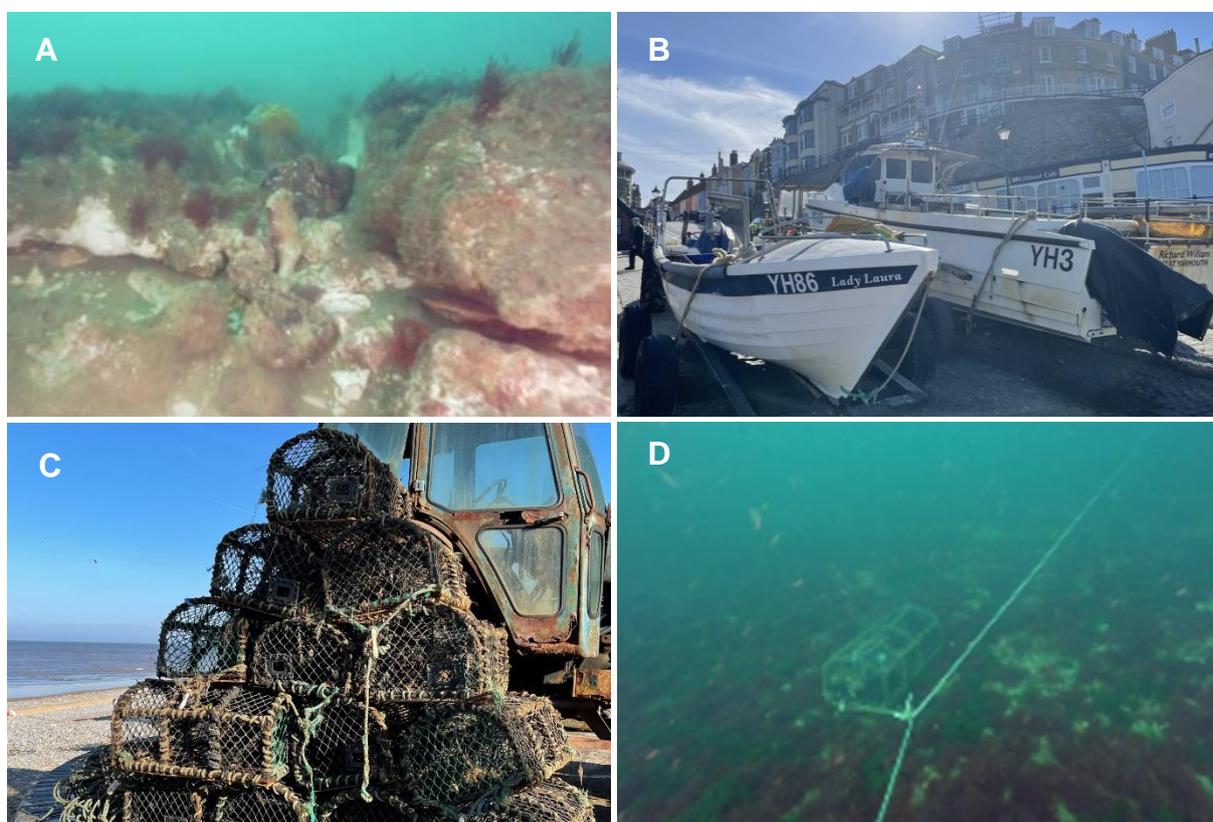


Image 1 Example of exposed subtidal chalk features referred to as 'rugged chalk' (A), beach-launched vessels used in fishery (B), typical gear used by the fishery (C) and this gear interacting with the seabed once set (D).

However, since designation, new evidence came to light in 2018 comprising photos of damaged chalk features, some with potting gear in situ and others the cause of damage unknown (Seasearch, 2018). This evidence led to concern around potting gear interactions with chalk and the development of further research led by Natural

⁷ <https://www.legislation.gov.uk/ukmo/2016/4/contents/created>

England to better understand the interaction, scale of impact and potential hindrance to the achievement of the sites Conservation Objectives (Tibbitt *et al.*, 2020). Subsequent to this, and based on their findings (Tibbitt *et al.*, 2020), updated conservation advice was provided by Natural England in August 2020. This formal advice stated that potting could be hindering the achievement of the site’s Conservation Objectives because of the cumulative effects of repeated damage from active and lost potting gears (pots, ropes, and anchors) to raised, outcropping chalk features which provide structural complexity to habitat (Image 2). At this time, Natural England also advised that an Adaptive Risk Management (ARM) approach would be an appropriate alternative to an immediate precautionary ban on potting.



Image 2 Example of potting gear interaction with outcropping chalk feature

1.2 Assessment of potting activities

Subsequent to receiving the above advice, Eastern IFCA updated their assessment of potting activities within the MCZ, concluding that over time, potting has the potential to cause cumulative damage to exposed, rugged forms of subtidal chalk and peat and clay exposures⁸, to such an extent that it could hinder site conservation objectives. Specifically, the impacts of concern were abrasion and penetration pressures on rugged chalk (Table 1), arising from repeated physical contact with pots, ropes and anchors (Image 2). The assessment concluded that there was no significant risk of potting activities hindering the achievement of conservation objectives for other habitat features designated within the site⁹.

Table 1 Fishing component, associated pressures and significantly affected MCZ features, as identified in Eastern IFCA’s potting assessment.

Fishing component	Pressure	Feature
Active potting gear (pots, ropes, anchors)	Abrasion/disturbance of the substrate on the surface of the seabed;	Exposed and rugged forms of subtidal chalk
Lost and stored potting gear (pots, ropes, anchors)	Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion	Exposed and rugged forms of peat and clay exposures

⁸ Peat and Clay exposure are included here as conservation advice provided to Eastern IFCA by Natural England in November 2018 and January 2023 states that peat and clay exposures (also a designated feature of the site) should be managed in an equivalent manner to chalk due to their inability to structurally recover from damage.

⁹ Subtidal sand, subtidal coarse sediment, and subtidal mixed sediments

The Identified Risk:

The 'identified risk' with respect to the MCZ arises from two components of potting activity:

- gears left in situ for long periods (i.e. lost or stored fishing gear);
- gears used to actively fish.

The risk associated with 'lost and stored' gear is considered greater than that associated with 'active' gear¹ but in both cases, is associated with abrasion and penetration of chalk and peat and clay where they occur as complex, outcropping structures, referred to as 'rugged chalk' (Image 1A and 2).

It is important to note that precaution was applied when drawing these conclusions because of large uncertainties identified in the assessment around the location and extent of the rugged features, the amount of potting activity overlapping with these features and the rate of impact against a background of natural erosion of these soft rock features and its significance in terms of the sites Conservation Objectives.

1.3 Mitigation: Adaptive Risk Management

Eastern IFCA's potting assessment (findings summarised in section 1.2) identified that the risk of hindering conservation objectives could be avoided through the application of mitigation in the form of Adaptive Risk Management (ARM).

What is Adaptive Risk Management?

Adaptive management is considered as 'learning by doing' then adapting based on that learning (JNCC, 2019). Such management can provide a framework for managing ecosystems where there are multiple sources of uncertainty (Williams and Brown, 2018). ARM requires the implementation of management proportionate to the risk identified, and adequately precautionary, followed by a process of evaluation and refinement of that management. Application of the ARM approach in Cromer Shoal Chalk Beds MCZ is described further in this context.

ARM requires the implementation of management that is proportionate to the risk identified, and adequately precautionary (JNCC, 2019). The identified risk to features can be mitigated through introducing measures that **reduce the frequency, and, or the severity of interactions**. Figure 1 lists a range of measures which could be used to achieve this and demonstrates how the level of restriction of measures increases as risk increases. Measures are scaled according to their level of restrictiveness and anticipated impact on stakeholders. These measures are described in greater detail at Appendix 1 (Management Options).

Eastern IFCA's Potting Assessment shows, and Natural England's advice agrees, that the pressures exerted on MCZ rugged chalk features are not likely to have reached a

point where they could be hindering site conservation objectives at the current time¹⁰, thus, the current risk is not considered to be 'high'. This lower level of risk is reflected in the voluntary management that has already been developed and implemented as part of ARM (see section 3). Over time, repeated potting interactions could lead to cumulative impacts, potentially increasing the risk to designated features and requiring further restrictive measures. In the interim, as uncertainties are addressed through research and monitoring, the assessment of risk will have a stronger evidence base and measures will be better informed rather than precautionary.

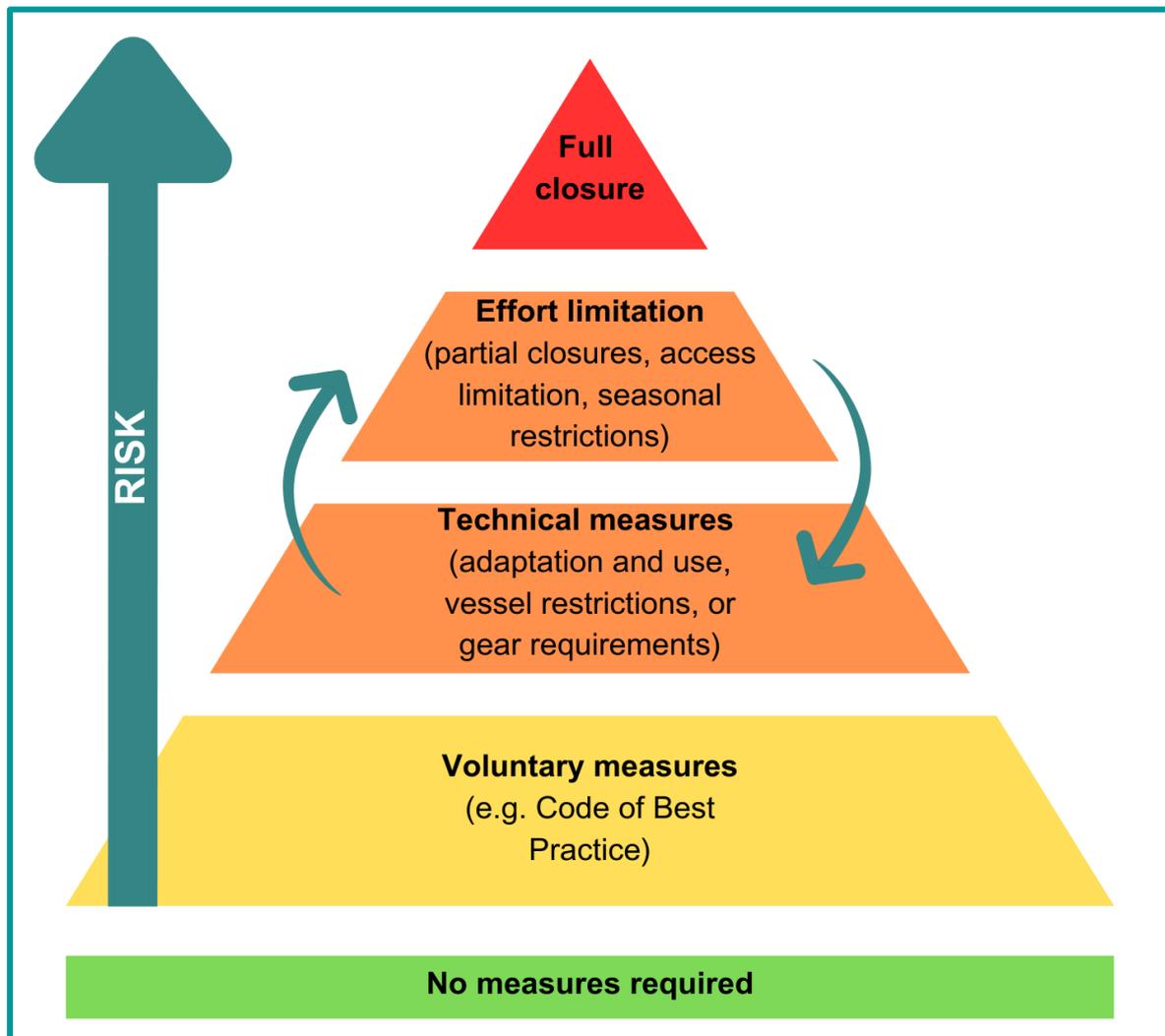


Figure 1 Hierarchy of measures which could be used to reduce the frequency, and, or the severity of gear interactions to mitigate the risk as it increases. Measures are scaled according to the restrictiveness of the measure and the impact of the intervention on stakeholders. This figure provides an example, severity of measure will vary depending on the situation and so may not always follow this order, particularly for measures in the orange boxes. Colour denotes the level of anticipated impact with red being the highest and green being no risk. ARM requires the implementation of management proportionate to the risk identified, and adequately precautionary (JNCC, 2019). These measures are described in greater detail in Appendix 1 (Management Options).

¹⁰ Natural England advice received January 2023

2 Adaptive Risk Management Plan

2.1 ARM in Cromer Shoal Chalk Beds MCZ

Eastern IFCA is committed to providing appropriate management of the potting fishery in the MCZ. Adaptive Risk Management (ARM) will have the primary aim of ensuring the MCZ's conservation objectives are not hindered, by proportionately mitigating the identified risks, and a secondary aim of minimising the impact of management on current fisheries. Eastern IFCA have adopted the following approaches to ensure ARM is effective in achieving these aims:



Participatory: ARM has been developed in close collaboration with Natural England, fishing industry members and other interested stakeholders. To provide space and time for this collaborative work, four interconnected contributing bodies have been established to carry the work forward and are made up of members from several different partner organisations (Figure 2).



Flexible: Application of ARM requires a flexible management approach capable of responding efficiently to the outputs of monitoring, further research and updated advice (Figure 3). It is judged that the most effective means of implementing a flexible approach is a combination of voluntary measures and a flexible permit byelaw.



Informed: Ongoing research and monitoring will address the uncertainties identified by the potting assessment, filling knowledge gaps and informing the evaluation and development of management measures. This cyclical process of 'learning by doing' fits well within the 'evidence-based fisheries management cycle', which is the basis for the IFCA management model (Defra, 2011) and is set out in Figure 3 to show how it is applied to ARM in the MCZ.

Figure 2 presents an organogram of bodies and partner organisation collaborating and contributing to ARM. This includes a Management Task and Finish Group (TFG) responsible for collaboratively identifying, developing and proposing the best management solutions for mitigating risks to the MCZ and providing recommendations for management, and a Research and Development TFG responsible for developing research to address uncertainties (Appendix 3) in the assessment and provide scientific evidence to inform proportionate management¹¹. Figure 3 presents the Adaptive Management Cycle as adopted by Eastern IFCA to apply ARM to the MCZ.

¹¹ A detailed Research and Development TFG Project Plan (EIFCA, 2022) and a 2023 Interim Research report (Hornbrey et al., 2023) are available on our website: <https://www.eastern-ifca.gov.uk/cromer-shoal-chalk-beds-mcz/research-development-projects/>



Project Board: Responsible for the overall management and coordination of ARM, it provides direction to the Research and Development and Management Task and Finish Groups, monitors progress and signs off on completed work. Membership of the Project Board is limited to a few senior users and suppliers, recognised for their relevant management expertise and responsibilities.



Stakeholder Group: Brings together individuals, groups and organisations actively interested in the management of the MCZ being a success for society and sea and is coordinated by the Marine Conservation Society's Agents of Change project. It provides an open and inclusive forum for discussion and information sharing to allow effective communication between stakeholders and the Project Board. Within this group an Evidence Review Group has been established to provide a route for local stakeholders to share knowledge and information with the Research and Development and Management Task and Finish groups.



Task and Finish Groups (T&FG): Lead on the development of research and management workstreams designed to inform and progress ARM and report back to the Project Board. Aims and Objectives for each group T&FG are provided in Appendix 2.

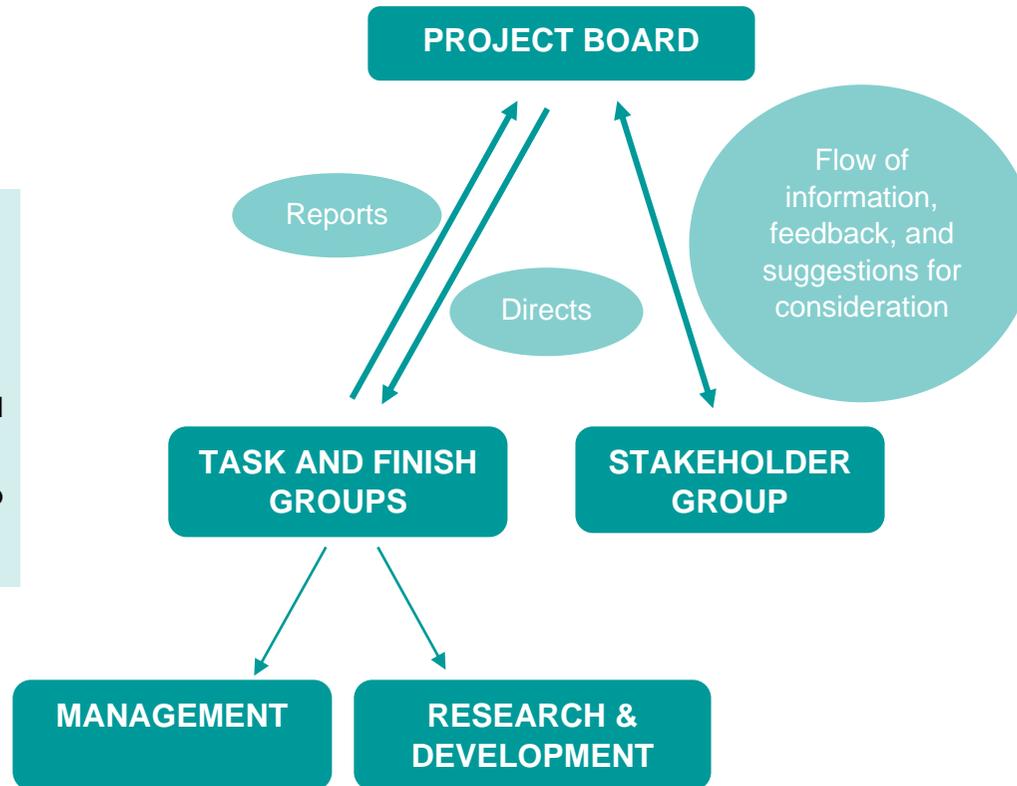


Figure 2 Organogram of bodies and partner organisations contributing to ARM

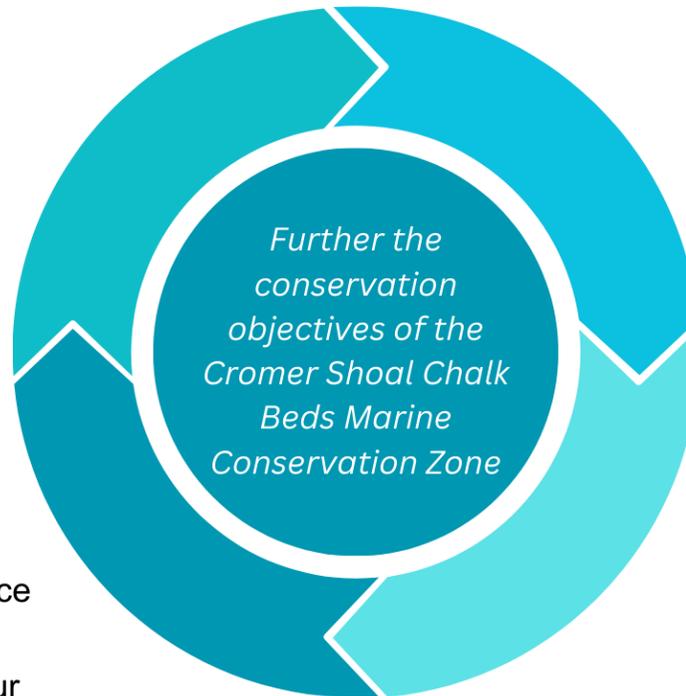
Adaptive Management Cycle

Define the issues

- Eastern IFCA MCZ Potting Assessment (2022)
- Natural England's Conservation Advice
- Risk Review
- Stakeholder engagement

Develop and appraise

- Consultation with affected stakeholders
- Impact Assessment (environmental, social and economic impacts of measures)
- Consideration by Project Board



Evaluate and adapt

- Review of the Code of Best Practice
- Byelaw review - every six years
- Permit condition review - every four years (or as informed by evidence)
- Monitoring of compliance and the effectiveness of measures
- Further research addressing evidence gaps
- Adapt where necessary

Implement

- Byelaw confirmed by the Secretary of State
- Permit conditions agreed by the Authority
- Voluntary measures agreed with stakeholders
- Engagement with stakeholders

Figure 3 Adaptive management cycle of Eastern IFCA voluntary and regulatory measures within the Cromer Shoal Chalk Beds MCZ. Adapted from 'Evidence-based marine management cycle' from 'Guidance to Inshore Fisheries and Conservation Authorities on evidence-based marine management' (Defra, 2011) and based on guidance provided on Adaptive Risk Management in the context of Marine Protected Areas (JNCC, 2019).

2.2 ARM timeline

Figure 4 provides a projected plan for the key management and research workstreams designed to implement Eastern IFCA's ARM approach over the next five years. These timelines are indicative, as in many cases will depend on a number of factors outside of Eastern IFCA's control but demonstrate how the development of management will be informed, evaluated and adapted by ongoing research and monitoring.

This is a high-level timeline which separates the key assessment, management and research workstreams. Management workstreams are further split to demonstrate how each management mechanism introduced will follow the Adaptive Management Cycle presented in Figure 3 and the timeframes for which each phase of the cycle can be expected. For the Byelaw, additional information has been provided to reflect the point at which confirmation of proposed measures will be sought. Research workstreams summarised in Appendix 3 are included in the plan with expected timeframes to demonstrate when findings are expected or are required to feed into the ARM process. Further detail on research work streams can be found in our 2023 Interim Research Report (Hornbrey *et al.*, 2023¹²).

Key milestones considered vital to the continued progression of ARM are identified in Figure 4 and are summarised in Table 2. Those achieved to date include the completion of an updated potting assessment and the development and adoption of a code of best practice for lost and stored gear in Spring 2022, the agreement of a flexible permitting byelaw by the Authority in March 2023 and the completion of an Interim Research Report (2023) (Figure 4 and Table 2).

The next phase of ARM will see the following key workstreams progressed:

- Monitoring, evaluation and adaption of the Code of Best Practice
- Development and appraisal of Byelaw permit conditions
- Ongoing data collection for the natural disturbance study
- Continued review of rugged chalk extent
- Continued collection of fishing activity data
- Development of adaptive gear trials

¹²Available on our website: https://www.eastern-ifca.gov.uk/wp-content/uploads/2024/01/2023_CSCB_MCZ_ARM_Interim_report_Final.pdf

ARM Plan		2021				2022				2023				2024				2025				2026				2027			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Assess	Potting Assessment	v5.0																											
	Interim report																												
Management	Voluntary Code of Best Practice	Define the issues																											
		Develop and appraise																											
		Implement																											
		Monitor																											
		Evaluate and adapt																											
	Cromer Shoal Beds Byelaw 2023	Byelaw	Define the issues																										
			Develop and appraise																										
			Seek confirmation																										
			Implement																										
			Monitor																										
Permit conditions		Define the issues																											
		Develop and appraise																											
		Seek confirmation																											
		Implement																											
		Monitor																											
Research	Assessing impacts of potting																												
	Mapping sensitive features																												
	Mapping fishing activities																												
	Trialing alternative fishing practices																												
	Determining the value of rugged chalk																												

Q1: Jan - Mar

Q2: Apr - Jun

Q3: Jul - Sep

Q4: Oct - Dec

Key Milestones:

Potting Assessment updated

Code of Best Practice launched

Byelaw agreed by the Authority

Interim report 2023 published

Permit conditions confirmed

Final rugged chalk extent defined

Interim report 2025 published

Findings from adaptive gear trials

Second review of permit conditions

Findings from disturbance study

Third review of permit conditions

Potting Assessment updated

Baseline fishing activity determined

Byelaw comes into effect

Value of rugged chalk determined

First review of permit conditions

Figure 4 Projected ARM plan for assessment, research and management workstreams over the next five years, with key milestones (Table 2) identified across the bottom. Please note timelines are indicative and will depend on a number of factors outside of Eastern IFCA’s control. If milestones under the same workstreams (of the same colour code) are reached ahead of planned timelines or are delayed, subsequent timelines will be bought forward or pushed back. Current as of February (Q1) 2024.

Table 2 Description of key milestones set out in Figure 5, estimated timeframe for completion (Q1 = Jan-Mar, Q2 = Apr-Jun, Q3: Jul-Sep, Q4: Oct-Dec), intended outcomes and associated dependencies.

Milestone	Estimated completion	Description & intended outcome	Dependencies
EIFCA Potting assessment updated	Q2 2022 Completed	Update of 2018 assessment, incorporating new evidence of potting interactions with rugged chalk. Enabled conclusion that management is needed to prevent cumulative impacts from potting hindering conservation objectives.	Relied on best available data on feature extent and condition, potting activity, rugged chalk sensitivity and recoverability. Conclusions precautionary because of evidence gaps.
Code of Best Practice (Lost and Stored) launched	Q2 2022 Completed	Initial management agreed under ARM approach. Code developed collaboratively with fishery stakeholders. Reduces likelihood of impacts to rugged chalk from potting gear that has been lost or is stored. Raises awareness of sensitivity of rugged chalk within fishing industry.	Dependent on stakeholder buy-in, which was developed through close, ongoing engagement with industry to understand issue, practicalities and appropriateness of measures.
Cromer Shoal Chalk Beds 2023 Byelaw agreed by Authority	Q1 2023 Completed	Key regulatory measure agreed under ARM approach. Provides mechanism to restrict potting activity over rugged chalk and flexibility to implement measures of varying severity, depending on requirement (as identified through research, assessment and monitoring).	Dependent on evidence supporting need for regulatory measure (potting assessment and NE advice, plus their supporting documents)
Interim Report (2023) published	Q2 2023 Completed	Reports on the findings of research undertaken in 2021-22. Informs how evidence has improved, uncertainties reduced, and risk levels better understood.	Dependent on EIFCA resource to review research data, compile report and re-consider evidence, uncertainty and risk levels.

Milestone	Estimated completion	Description & intended outcome	Dependencies
Permit conditions confirmed	Q2 2024	The first suite of precautionary permit conditions (inshore vessel restriction and seasonal closure) are consulted on, refined and agreed by the Authority. Prevents increase in effort on rugged chalk by limiting effort to inshore vessels. Removes effort during part of the year.	Rugged chalk extent must be defined and agreed to include in permit conditions. If a final extent has not been determined, rugged chalk areas must be based on most recent review. Associated impact assessments must be informed by the rugged chalk value study.
Final rugged chalk extent defined	Q4 2024	Collation of existing data sources and the collection of new data through completion of habitat surveys and subsequent analysis to identify spatial extent of sensitive chalk features. Identifies where management needs to be focused.	Dependent on EIFCA resource to complete surveys, review research data and compile report.
Baseline fishing activity determined	Q4 2024	Fishing activity data ascertained and mapped to provide a baseline for monitoring of regulatory measures once byelaw comes into effect and to inform ongoing assessment of risk. Fishing activity is assessed and monitored using voluntary measures including trackers and pot tags. Improves understanding of risk (level of pressure on rugged chalk) and value of rugged chalk to fishery. Beyond establishing a baseline mapping of fishing activities will form part of ongoing monitoring to inform future assessments and the effectiveness of measures. Once the byelaw comes into effect, requirements to provide fishing activity data will become mandatory.	Successful application of funding for pot tags, successful uptake in pot tags and vessel tracking devices. Associated technology is available and effective.

Milestone	Estimated completion	Description & intended outcome	Dependencies
Determine the value of rugged chalk	Q4 2024	Research study to compare the value of catch from rugged chalk to that caught off the rugged chalk to inform Impact Assessments and wider consideration of permit conditions and other measures.	Requires a willing volunteer fishermen take an officer to sea to collect data. Dependent on the EIFCA resource to collect and review research data, compile report.
Interim report (2025) published	Q2 2025	This second interim report will report on research progress and the development of management and consider how the level of risk has been managed, including in relation to any changes in risk because of progressing research and recommend any changes to the ARM plan required as a result of changes in risk.	Dependent on EIFCA resource to review research data, compile report and re-consider evidence, uncertainty and risk levels.
Byelaw comes into effect	Q2 2025	The Cromer Shoal Chalk Beds Byelaw 2023 comes into effect. Includes the associated agreed permit conditions, which will reduce risk to the rugged chalk feature by limiting effort (see above).	Primarily relating to the byelaw making process including Formal Quality Assurance with the MMO and confirmation by the SoS. First suite of permit conditions must have been confirmed by the Authority in order to come into effect.
First review of Permit Conditions	Q2 2025	The first review will focus on incorporating the outcomes from gear tagging roll out, monitoring of trackers/iVMS data to inform fishing activity levels and the determination of the final rugged chalk extent to amend permit conditions where required. Work includes consultation with affected stakeholders and consideration of impacts.	Completion of gear adaptation trials. Monitoring of fishing activities through voluntary tagging and uptake of trackers/iVMS units. Provision of final rugged chalk extent.

Milestone	Estimated completion	Description & intended outcome	Dependencies
Findings from adaptive gear trials	Q1 2026	Identify and trial gear adaptations which reduce risk to the sensitive chalk features. Will inform whether adapted potting gear is a feasible and effective mechanism to reduce impacts of gear on rugged chalk.	Identification of suitable gear adaptations to trial, securing experimental gear, identifying suitable equipment to monitor gear movements and interactions and development of a suitable experimental design. Dependent on EIFCA resource to complete surveys, analyse and review data and compile report.
Second review of Permit Conditions	Q3 2026	The second review will focus on incorporating the outcomes from gear adaptation trials to be set as permit conditions. Work includes consultation with affected stakeholders and consideration of impacts. Review will also incorporate any changes required, as informed by fishing activity monitoring of other impact studies.	Completion of gear adaptation trials with a report detailing findings. Report detailing finding of ongoing fishing activity monitoring.
Findings from disturbance study	Q1 2027	The disturbance study will identify the extent that potting activity is causing an impact on rugged chalk features in the context of natural disturbance.	Primarily logistical (vessel readiness, equipment etc.). Obtaining funding for the study. Securing permissions for marking study areas. Reliant on ongoing partnership with third parties (for practical fieldwork, academic oversight, and conservation advice).
Potting assessment updated	Q2 2027	Potting assessment updated to incorporate research findings, address uncertainties and reassess the level of risk to inform required mitigation	Findings from research work and fishing activity monitoring.

Milestone	Estimated completion	Description & intended outcome	Dependencies
Third review of Permit Conditions	Q3 2027	The third review will focus on incorporating the outcomes of the disturbance study into permit conditions. Work includes consultation with affected stakeholders and consideration of impacts. Review will also incorporate any changes required, as informed by fishing activity monitoring.	Completion of disturbance study. Monitoring of fishing activities. Updated potting assessment.

2.2.1 The Plan in Action

Whilst indicative timescales are provided in the plan, it is important to note the dependencies outlined in Table 2. Much of the work is sequential and dependent on the completion of other workstreams. In addition, the plan will ultimately be informed by an understanding of risk to the site features which is likely to change over time, as a result of outputs from research workstreams, so may be revised accordingly.

Risk will be monitored throughout the project, and the Cromer Shoal Chalk Bed Risk Matrix will be updated and shared with the Project Board on a quarterly basis. Appendix 4 details a summary of the risk matrix as it currently stands.

It is important to note that although the byelaw has been agreed by the Authority (March 2023), the timeframe for its implementation is out of Eastern IFCA's control due to the formal consultation and quality assurance processes required before being submitted to the Secretary of State for final sign-off. Previous experience has shown that the whole process from agreement by the Authority to sign-off by the Secretary of State, at which point the Byelaw comes into force, can be lengthy and typically takes around two years, thus for planning purposes a period of two years has been built into the project timeframes in Figure 5. Timelines for the development of the Byelaw permit conditions have been planned to ensure that if the Byelaw does come into force earlier than anticipated, permit conditions will have been agreed in advance to avoid hindering progress.

2.2.2 Potting Assessment update

The Potting Assessment completed in April 2022 was informed by Natural England's updated Conservation advice (August 2020) and new evidence that had come to light which led to the adoption of ARM to mitigate risk to the site. Since this assessment was completed, the research work undertaken as part of ARM has started to provide answers to some of the uncertainties identified in the assessment (Hornbrey *et al.*, 2023) and, subsequently, it requires updating again. As this research work is ongoing and is planned to continue over the next five years, Eastern IFCA do not plan to update this assessment until the beginning of 2027 once planned research work is due to be complete. In the interim, Eastern IFCA plans to provide updates on the management and research workstreams developed as part of ARM through a biannual Interim Report, in addition to the quarterly risk assessments reviews described above. If new evidence comes to light during this period and significantly changes the risk to the site, the need to update the MCZ assessment sooner will be reviewed.

Each Interim Report will set out what research has been undertaken in a given reporting period, and what management has been developed. The reports will also set out how the research has filled evidence gaps in relation to the potting assessment, thereby reducing areas of uncertainty, and highlight how management that has been applied reduces the interaction between potting gear and rugged chalk, ultimately reducing the risk of the site's conservation objectives being hindered.

2.3 Voluntary measures: implementation, monitoring and evaluation

Voluntary measures are considered in the first instance when developing management measures in accordance with Defra guidance to IFCAs¹³. Voluntary measures can be implemented quickly and reduce risk in an ARM approach ahead of legislative measures.

Table 3 sets out the management measures which are, and are to be, brought into effect as voluntary measures.

Table 4 Action plan for voluntary measures including timeframes, implementation, monitoring and evaluation

ID	Measure	Intended effect	Timeframe	Implementation	Monitoring	Evaluation criteria / Timescales	Limitations
VM1	Pots will never be stored in the MCZ while not being used to actively fish.	Reduce frequency and severity of stored gear interactions with rugged chalk features. Reduce risk of gear becoming lost and drifting into or snagging with rugged chalk	In effect (May 2022)	<ul style="list-style-type: none"> General - Collaboration on design and implementation of measures with fishery stakeholders Publication on the Eastern IFCA website Publication on social media Provision of engagement materials via post, email and in person (IFCO engagement) VM3 & VM4 – implementation includes the development of 	<ul style="list-style-type: none"> <i>Ad Hoc</i> at sea monitoring - ongoing Reports from fishers logged (as Intel or message form) – ongoing Dialogue and actions seeking compliance logged (as intel or message form) – ongoing Use of vessel tracking data (Eastern IFCA trackers, I-VMS & VMS) to detect longer soak times within rugged chalk – end of 2024 (workstream to develop and 	<u>Evaluation</u> <ul style="list-style-type: none"> No Pots stored within rugged chalk Non-compliance detected and logged Non-compliance resolved within 5 days of notification (weather dependent) and logged <u>Timescales</u> <ul style="list-style-type: none"> Annual reporting and evaluation of effectiveness (Spring) 	<ul style="list-style-type: none"> Cannot quantify compliance rates in lieu of tracking data analysis – monitoring heavily dependent on reporting to Eastern IFCA Development of analytical techniques to detect compliance using vessel tracking data beyond current capabilities.
VM2	Pots will be kept out of the rugged chalk if not regularly turned over (at least every 3-4 days) to minimize the risk of damage to gear and the rugged chalk of the MCZ.	Reduce frequency and severity of active gear interactions with rugged chalk features	In effect (May 2022)	<ul style="list-style-type: none"> Provision of engagement materials via post, email and in person (IFCO engagement) VM3 & VM4 – implementation includes the development of 	<ul style="list-style-type: none"> Use of vessel tracking data (Eastern IFCA trackers, I-VMS & VMS) to detect longer soak times within rugged chalk – end of 2024 (workstream to develop and 	<u>Evaluation</u> <ul style="list-style-type: none"> No Pots stored within rugged chalk Non-compliance detected and logged Non-compliance resolved within 5 days of notification (weather dependent) and logged <u>Timescales</u> <ul style="list-style-type: none"> Annual reporting and evaluation of effectiveness (Spring) 	<ul style="list-style-type: none"> Cannot quantify compliance rates in lieu of tracking data analysis – monitoring heavily dependent on reporting to Eastern IFCA Development of analytical techniques to detect compliance using vessel tracking data beyond current capabilities.

¹³ <https://assets.publishing.service.gov.uk/media/5a7b34e0ed915d3ed9062dce/ifca-byelaw-guidance.pdf>

				a daily weather log which identifies weather conditions which increases the risk of pots at sea causing damage ¹⁴ and dialogue with fishers during these periods to either remove gear or refine understanding of how 'rough weather' interacts with fishing gear.	implement tracking data analysis tools)		<ul style="list-style-type: none"> • N.B. it is not feasible to count buoys assure and reliably determine positioning within rugged chalk
VM3	During winter months and periods of bad weather pots will be kept away from the rugged chalk of the MCZ to minimize the risk of gear loss and damage to the chalk as a result of bad weather.	Reduce frequency and severity of active and lost gear interactions with rugged chalk features	In effect (May 2022)	<ul style="list-style-type: none"> • VM6 & VM7 – The pot tagging project will facilitate effective follow-up of old / damaged pots found at sea or ashore 	<ul style="list-style-type: none"> • Daily weather monitoring to identify conditions which are likely to increase risk of damage to chalk • Targeted dialogue with fishers thought to have pots within the rugged chalk area during periods of rough weather (see footnote 1) • <i>Ad Hoc</i> at sea monitoring - ongoing • Reports from fishers logged (as Intel or message form) – ongoing • Dialogue and actions seeking compliance logged (as intel or 	<p><u>Evaluation</u></p> <ul style="list-style-type: none"> • No pots set within rugged chalk during periods of rough weather (see footnote 1) • Robust rationale for rough weather 'thresholds' developed over time. • Areas on chalk reef which provide shelter from rough weather are identified • Compliance & non-compliance detected and logged • Non-compliance resolved within 1 days of 	<ul style="list-style-type: none"> • Cannot quantify compliance rates in lieu of tracking data analysis – monitoring heavily dependent on reporting to Eastern IFCA
VM4	Fishermen will make every effort to retrieve or otherwise make secure (e.g. by moving to deeper water and away from the rugged chalk) any pots at sea prior to any forecasted storm event to prevent pots from becoming lost and	Reduce frequency and severity of active and lost gear interactions with rugged chalk features	In effect (May 2022)	<ul style="list-style-type: none"> • VM9 & VM10 – implementation included development of a database to store reports 			

¹⁴ The current thresholds are 1) two days of sea conditions at 4 on the Beaufort Scale with a NW wind direction or 2) one day of sea conditions at 6 on the Beaufort Scale with a NW wind direction. These thresholds were determined through dialogue with industry and will be refined over time through monitoring.

	to minimize any potential damage to the rugged chalk resulting from stormy weather.			and associated information	<p>message form) – ongoing</p> <ul style="list-style-type: none"> Use of vessel tracking data (Eastern IFCA trackers, I-VMS & VMS) to presence / absence within rugged chalk – end of 2024 (workstream to develop and implement IVMS data analysis tools) 	<p>notification (weather dependent) and logged</p> <p><u>Timescales</u></p> <ul style="list-style-type: none"> Annual reporting and evaluation of effectiveness (Spring) 	
VM5	<p>If a fisherman is unavailable (e.g going on holiday) they will remove any gear from rugged chalk areas or make arrangements for their gear to be regularly turned over (at least every 3-4 days) by somebody else in their absence.</p>	<p>Reduce frequency and severity of stored gear interactions with rugged chalk features</p> <p>Reduce risk of gear becoming lost and drifting into or snagging with rugged chalk</p>	In effect (May 2022)		<ul style="list-style-type: none"> <i>Ad Hoc</i> at sea monitoring - ongoing Reports from fishers logged (as Intel or message form) – ongoing Dialogue and actions seeking compliance logged (as intel or message form) – ongoing Use of vessel tracking data (Eastern IFCA trackers, I-VMS & VMS) to detect longer soak times within rugged chalk – end of 2024 (workstream to develop and 	<p><u>Evaluation</u></p> <ul style="list-style-type: none"> No Pots stored within rugged chalk Non-compliance detected and logged Non-compliance resolved within 5 days of notification (weather dependent) and logged <p><u>Timescales</u></p> <ul style="list-style-type: none"> Annual reporting and evaluation of effectiveness (Spring) 	<ul style="list-style-type: none"> Cannot quantify compliance rates in lieu of tracking data analysis – monitoring heavily dependent on reporting to Eastern IFCA Development of analytical techniques to detect compliance using vessel tracking data beyond current capabilities.

					implement tracking data analysis tools)		<ul style="list-style-type: none"> • N.B. it is not feasible to count buoys assure and reliably determine positioning within rugged chalk
VM6	Fishermen will maintain all gear and avoid using old and damaged gear that is more likely to become lost.	Reduce frequency and severity of lost gear interactions with rugged chalk features	In effect (May 2022)		<ul style="list-style-type: none"> • Dialogue with fishers • At sea pot inspections, logging pots in poor conditions, dialogue with fishers and any subsequent actions logged • Divers and other stakeholders reporting lost / abandoned gear at sea and ashore (beach cleaning database) 	<u>Evaluation</u> <ul style="list-style-type: none"> • Reduced occurrences pots found at sea or washed-up ashore • Identification of old / damaged pots at sea leads to recorded action (either repair or safe disposal). 	<ul style="list-style-type: none"> • Effective identification of pots owners dependant on IFCO knowledge until pot tagging project is complete (VM13).
VM7	If gear is old and unwanted, it will be disposed of safely and responsibly and never discarded at sea.	Reduce frequency and severity of lost gear interactions with rugged chalk features	In effect (May 2022)			<u>Timescales</u> <ul style="list-style-type: none"> • Annual reporting and evaluation of effectiveness (Spring) 	
VM8	Fishermen will make every reasonable attempt to recover gear which has become snagged or lost as soon as possible.	Reduce frequency and severity of lost gear interactions with rugged chalk features	In effect (May 2022)		Observations by divers and beach cleaners (stakeholder input into reporting system – (Norfolk Beach Cleaners Collective hosted database)	<u>Evaluation</u> <ul style="list-style-type: none"> • Reduced occurrences pots found at sea or washed-up ashore 	<ul style="list-style-type: none"> • No reporting regime in place for reporting pot repair or replacement
						<u>Timescales</u> <ul style="list-style-type: none"> • Annual reporting and evaluation of 	

						effectiveness (Spring)	
VM9	If a fisherman is unable to recover gear which has become irretrievably snagged, missing or lost, they will notify Eastern IFCA as soon as practicable.	Provide information on how much gear is lost at sea for monitoring and assessment purposes	In effect (May 2022)		<ul style="list-style-type: none"> Logging reports of lost gear Logging pot tag replacement requests (see VM13)	<u>Evaluation</u> <ul style="list-style-type: none"> Lost gear is reported to Eastern IFCA and logged Gear known to be lost is comparable to gear found over time (i.e. pot tags) Requests for replacement tags (VM13) correlates with lost tag / pot reports. 	No way of detecting non-compliance unless replacement tag request is received
VM10	A notification to Eastern IFCA will be as detailed as possible and include such information as: <ul style="list-style-type: none"> Name and PLN of vessel Type and quantity of gear missing, lost or snagged Date/time when the gear became missing, lost or snagged Position Measures taken to retrieve the gear	Provide information on how much gear is lost at sea for monitoring and assessment purposes	In effect (May 2022)			<u>Timescales</u> Annual reporting and evaluation of effectiveness (Spring)	
VM11	Trackers fitted to potting vessels	Provide fishing activity information	[In effect from July 2021]	<ul style="list-style-type: none"> Collaboration on design and 	<ul style="list-style-type: none"> Logging of vessels fitted with trackers 	<u>Evaluation</u>	<ul style="list-style-type: none"> Conflict & confusion

	fishing within the MCZ	<p>Facilitate the Natural disturbance study</p> <p>Facilitates implementation and monitoring of other measures</p>		<p>implementation of measures with fishery stakeholders</p> <ul style="list-style-type: none"> • Publication on the Eastern IFCA website • Publication on social media • Provision of engagement materials via post, email and in person (IFCO engagement) • Trackers procured and distributed by the Authority • Trackers are logged in a database and battery levels are monitored. 	<ul style="list-style-type: none"> • Monitoring vessel tracker use 	<ul style="list-style-type: none"> • All vessels operating within the MCZ are fitted with trackers • Trackers are operating consistently <p><u>Timescales</u></p> <ul style="list-style-type: none"> • Annual reporting and evaluation of effectiveness (Spring) 	with IVMS roll-out
VM12	Closure of study areas to potting (15.87 ha (0.8% of 2022 Rugged chalk extent))	<p>Facilitate the Natural disturbance study</p> <p>Reduces interaction between potting and 'rugged chalk'</p>	In effect (September 2023)	<ul style="list-style-type: none"> • Issuing a Notice to Mariners • Marking closures with Buoys and providing vessels without navigation equipment hand-held GPS units to facilitate identification of 	<ul style="list-style-type: none"> • Vessel tracking data used to identify presence of pots within closed areas • <i>Ad hoc</i> at sea monitoring • Reports from fishing industry 	<p>Evaluation</p> <ul style="list-style-type: none"> • No fishing activity within the closed areas during the study period • Non-compliance detected and resolved within 2 days (weather dependent) <p><u>Timescales</u></p>	<ul style="list-style-type: none"> • None identified

				<ul style="list-style-type: none"> the closures at sea Issuing coordinates and charts . 		<ul style="list-style-type: none"> Annual reporting and evaluation of effectiveness (Spring) 	
VM13	Pot tagging – all crab and lobster pots are to have tags attached which identify the vessel associated with the fishing gear.	<p>Provide fishing activity information</p> <p>Deterrent to fishing practices outside of the voluntary measures</p> <p>Facilitates implementation and monitoring of other measures</p>	<p>Feasibility study Feb 2024</p> <p>Distribution of pot tags to fishery stakeholders – Spring 2024</p>	<ul style="list-style-type: none"> Securing fundings Feasibility study to identify most appropriate tags Procure and distribute tags 	<ul style="list-style-type: none"> Logging of tags fitted to pots Logging of replacement requests At sea gear inspections 	<p><u>Evaluation</u></p> <ul style="list-style-type: none"> All pots operating within the MCZ are tagged <p><u>Timescales</u></p> <ul style="list-style-type: none"> Annual reporting and evaluation of effectiveness (Spring) 	<ul style="list-style-type: none"> At sea gear inspections cannot provide complete monitoring of potting gear within the MCZ Detection of non-compliance dependent on sea-going capacity

Outcomes of evaluation

For voluntary measures, evaluation could lead to a number of outcomes including:

- **Maintaining the measures** where they are considered to effectively reduce risk;
- **Revision of existing measures** where they could be made more effective at reducing risk appropriately, (e.g. reducing the impact on fishing livelihoods where the measure is exceeding the need to mitigate risk or enhancing the scope of the mitigating effect where they are not reducing risk sufficiently) ;
- **Implementation of additional measures** where new risks are identified (including as a result of evaluation of permit conditions) or to enhance the effectiveness of other measures (e.g. voluntary requirements to affix vessel trackers facilitates monitoring the effectiveness of other voluntary measures);
- **Implementation of measures through regulation** where measures are deemed to be important to reduce risk and require an additional deterrent to non-compliance.

2.4 Byelaw fixed conditions: implementation, monitoring and evaluation

The Cromer Shoal Chalk Bed Byelaw 2023 was made by the Authority on 8 March 2023 at the 51st Eastern IFCA Meeting. The byelaw is primarily intended to enable the implementation of flexible permit conditions and other flexible management measures as required and informed by ARM.

Measures are included within the byelaw as set out in table 4 (below) which facilitate ARM and monitoring of the effectiveness of other measures.

Table 4 Action plan for measures to be brought into effect via the Cromer Shoal Chalk Beds Byelaw 2023 ('Byelaw fixed provisions') including timeframes, implementation, monitoring and evaluation.

ID	Measure	Intended effect	Timeframe	Implementation	Monitoring	Evaluation criteria / timeframe	Limitations
CSCB1	Requirement to hold a permit and any relevant endorsement to fish using pots within the MCZ	To enable the Authority to manage fishing activity using flexible management measures.	Jan 2025*	<ul style="list-style-type: none"> Drafting of the byelaw – a byelaw is drafted as informed by informal consultation and an Impact Assessment (completed) Making the Byelaw – the Byelaw is 'made' by the Authority (<i>completed</i>) Formal consultation – on making the byelaw, the Authority notifies stakeholders of its intention to apply to the SoS to confirm the byelaw and seek formal representation to inform a final draft 	<ul style="list-style-type: none"> Logging permit application requests and permits issued Logging annual permit renewals Monitoring vessel activity using vessel monitoring systems (Eastern IFCA trackers and IVMS) Monitoring impacts and benefits in accordance with Impact Assessment 	<p><u>Evaluation</u></p> <ul style="list-style-type: none"> Permit applications made within 1 month of byelaw confirmation Compliance with permit requirement within 2 months of confirmation Annual permit renewal 100% of fishers operating within the MCZ <p><u>Timescales</u></p> <ul style="list-style-type: none"> Review compliance at 1 month, 2 months and annually thereafter Byelaw review after 6 years of confirmation 	None identified
CSCB2	Requirement to mark pots and fishing	To facilitate implementation of voluntary	Jan 2025*		<ul style="list-style-type: none"> Logging of tags fitted to pots 	<p><u>Evaluation</u></p> <ul style="list-style-type: none"> All pots within MCZ are tagged 	<ul style="list-style-type: none"> At sea gear inspections cannot

	gear such that the owner can be readily identified.	and regulatory management measures.		<p>of the byelaw and impact assessment (<i>Completed</i>).</p> <ul style="list-style-type: none"> • Formal Quality Assurance – The byelaw is submitted to the Marine Management Organisation (MMO) for quality assurance. Eastern IFCA consider commentary from the MMO and revise the byelaw as required using delegated authority provided to the CEO (<i>byelaw submitted for first round of consideration in Dec 2023, first response anticipated in Feb 2024. Follow-up work likely to be required. Anticipated completion of formal QA in Autumn of 2024</i>). 	<ul style="list-style-type: none"> • Logging of replacement requests • At sea gear inspections 	<ul style="list-style-type: none"> • All pots operating within the MCZ are tagged <p><u>Timescales</u></p> <ul style="list-style-type: none"> • Annual reporting and evaluation of effectiveness (Spring) • Byelaw review after 6 years of confirmation 	<p>provide complete monitoring of potting gear within the MCZ</p> <p>Detection of non-compliance dependent on sea-going capacity</p>
CSCB3	Requirement to fish in such a way so as to minimize loss of fishing gear	To reduce the likelihood of bad practice leading to damage to the MCZ's features and adoption of the code of practice	Jan 2025*	<p>of the byelaw and impact assessment (<i>Completed</i>).</p> <ul style="list-style-type: none"> • Formal Quality Assurance – The byelaw is submitted to the Marine Management Organisation (MMO) for quality assurance. Eastern IFCA consider commentary from the MMO and revise the byelaw as required using delegated authority provided to the CEO (<i>byelaw submitted for first round of consideration in Dec 2023, first response anticipated in Feb 2024. Follow-up work likely to be required. Anticipated completion of formal QA in Autumn of 2024</i>). 	<ul style="list-style-type: none"> • <i>Monitoring plan for voluntary measures</i> (see previous subsection) • Ad hoc reporting by divers 	<p><u>Evaluation</u></p> <ul style="list-style-type: none"> • Compliance with VM1 to VM10 • Absence of damage to chalk features <p><u>Timescales</u></p> <ul style="list-style-type: none"> • Annual reporting and evaluation of effectiveness (Spring) <p>Byelaw review after 6 years of confirmation</p>	<ul style="list-style-type: none"> • No quantitative measure of 'damage' caused by potting activity <p>Limitations referred to in monitoring for voluntary measures VM1 to VM10 (see previous section).</p>
CSCB4	Requirement to retrieve fishing gear is notified	Require the removal of gear which is identified as lost or snagged in a timely manner and reduce the likelihood of fishing gear	Jan 2025*	<p>of the byelaw and impact assessment (<i>Completed</i>).</p> <ul style="list-style-type: none"> • Submission to the SoS – the byelaw is submitted to the SoS for confirmation. Timeframes for completion highly variable and 	<ul style="list-style-type: none"> • Logging notifications of lost gear found at sea and ashore • Logging actions taken by fishers in accordance with notification • Observations by divers and beach cleaners (stakeholder input) 	<p><u>Evaluation</u></p> <ul style="list-style-type: none"> • Notifications result in action (to remove fishing gear) in a timely manner • Absence of damage caused by potting activity <p><u>Timescales</u></p>	<p>Limited coverage of diver and beach cleaner activities</p>

		damaging the MCZ's features		<p>dependant on Defra priorities.</p> <ul style="list-style-type: none"> • Sign-off and coming into effect – once confirmed, the byelaw will be in effect with. Implementing will involve communication with fishing industry including notifying requirement to apply for a permit within 1 month of byelaw coming into effect. • Enforcement – enforcement of measures in accordance with the Authority's enforcement policy and targeted action through gathering intelligence and consideration via Tactical Coordination Group. 	<p>into reporting system – (Norfolk Beach Cleaners Collective hosted database)</p> <ul style="list-style-type: none"> • Logging reports of lost gear • Logging pot tag replacement requests 	<ul style="list-style-type: none"> • Annual reporting and evaluation of effectiveness (Spring) • Byelaw review after 6 years of confirmation <p><u>Evaluation</u></p> <ul style="list-style-type: none"> • Lost gear is reported to Eastern IFCA and logged • Gear known to be lost is comparable to gear found over time (i.e. pot tags) • Requests for replacement tags correlates with lost tag / pot reports. <p><u>Timescales</u></p> <ul style="list-style-type: none"> • Annual reporting and evaluation of effectiveness (Spring) • Byelaw review after 6 years of confirmation 	
CSCB5	Requirement to notify Authority of lost fishing gear	Facilitate management of fishing gear on the rugged chalk including its removal	Jan 2025*				No way of detecting non-compliance unless replacement tag request is received

* the timeframe is dependent on the time taken to successfully complete the formal QA process and consideration by Defra prior to confirmation by the secretary of State.

Evaluation outcomes

The effectiveness of the provisions of the byelaw will be considered in two ways; first, with respect to how effective the mechanisms within the byelaw are at achieving their intended effects and secondly, with respect to how effective the byelaw is at managing risk generally, including where research has informed the project of a 'gap' in management. The potential outcomes of evaluation are as follows:

- **Enhanced engagement and education** – Encourage compliance in accordance with the Authority's Enforcement Policy through education and engagement including targeting areas / groups and production of engagement materials to facilitate compliance.
- **Deterrent to non-compliance through effective enforcement** – application of enforcement action in accordance with the Authority's enforcement policy where appropriate
- **Enforcement Policies** – Specific enforcement policies can be developed to provide additional clarity on the meaning of the byelaw and how the Authority intends to enforce it to enhance its' effectiveness in lieu of revision (short-term measure)
- **Revision to the byelaw** –where necessary, the byelaw may be revised to include additional mechanisms or measures. The process for doing so requires informal and formal consultation, an impact assessment, quality assurance by the MMO and confirmation by the Secretary of State.
- **Emergency byelaw** – where there is an urgent and unforeseeable need to do so, the Authority may introduce an emergency byelaw under section 157 of the Marine and Coastal Access Act to implement management measures immediately. Emergency byelaws require consideration of stakeholder views and impacts on them. Emergency byelaws expire after 12 months, with the possibility of a 6 month extension in some cases.

2.5 Byelaw flexible (permit) conditions, implementation, monitoring and evaluation

Under the Cromer Shoal Chalk Beds Byelaw 2023, the Authority can issue, vary and revoke flexible permit conditions and implement other measures (for example a limit on the number of permits) to reduce risk in the site and adapt over time following evaluation and research. The permit conditions will not come into effect until the byelaw has been confirmed by the Secretary of State.

Table 5 Action plan to delivering permit conditions under the Cromer Shoal Chalk Beds Byelaw 2023.

ID	Measure	Intended effect	Timeframe	Implementation	Monitoring	Evaluation criteria / timeframe	Limitations
FPC1	<p><i>Inshore vessel restriction</i>¹⁵</p> <p>Restrict fishing with pots in the 3nm boundary within the MCZ to vessels which are either:</p> <ul style="list-style-type: none"> Launched from the beach; or 10m or less in length 	<ul style="list-style-type: none"> To maintain the capacity of vessels operating within the rugged chalk area to existing levels and prevent the likelihood of significant increases in fishing effort (number of pots) To enhance a sense of ownership and husbandry within the inshore area and increase the likelihood of best practice being adopted 	Jan 2025*	<ul style="list-style-type: none"> Drafting of the permit conditions – permit conditions are drafted as informed by informal consultation and an Impact Assessment (ongoing – completion anticipated March 2024) Making the permit conditions – the permit conditions are introduced, varied or revoked by the Authority 	<ul style="list-style-type: none"> <i>Ad Hoc</i> at sea monitoring Reporting from stakeholders Analysis of vessel monitoring data (Eastern IFCA trackers, IVMS) 	<ul style="list-style-type: none"> Compliance with permit condition Non-compliance identified and addressed in accordance with Eastern IFCA Enforcement Policy <p><u>Timeframe</u></p> <ul style="list-style-type: none"> <i>Ad-hoc</i> - On the provision of additional evidence which affects the effectiveness of the measure Annual report Review at least every 4-years (in accordance with the provisions of the byelaw) 	Effective monitoring dependant on anticipated national requirement to report using I-VMS

¹⁵ Rationale supporting the development of the proposals can be found here - https://www.eastern-ifca.gov.uk/wp-content/uploads/2023/12/2023_11_23_Phase_1_Conditions_Summary.pdf

<p>FPC2</p>	<p><i>Seasonal closure of rugged chalk management area³</i></p> <p>Prohibit the setting of pots within the 'rugged chalk management area' during January and February</p>	<ul style="list-style-type: none"> To reduce the likelihood of pots causing damage during periods of rough weather and low turn-over rates (increased soak time, limited availability to put to sea) To reduce the overall interaction with the 'rugged chalk' area 	<p>Jan 2025*</p>	<p>(anticipated to be June 2024)</p> <ul style="list-style-type: none"> Coming into effect – once confirmed by the Authority, Implementing will involve development of engagement materials and communication with fishing industry (anticipated to complete 1 month after byelaw comes into effect. Enforcement – enforcement of measures in accordance with the Authority's Enforcement Policy 	<ul style="list-style-type: none"> <i>Ad Hoc</i> at sea monitoring Reporting from stakeholders Analysis of vessel monitoring data (Eastern IFCA trackers, IVMS) 	<ul style="list-style-type: none"> Compliance with permit condition Non-compliance identified and addressed in accordance with Eastern IFCA Enforcement Policy <p><u>Timeframe</u></p> <ul style="list-style-type: none"> <i>Ad-hoc</i> - On the provision of additional evidence which affects the effectiveness of the measure Annual report Review at least every 4-years (in accordance with the provisions of the byelaw) 	<p>Effective monitoring dependant on anticipated national requirement to report using I-VMS</p>
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Evaluation Outcomes

Ad-hoc, annual or 4-yearly reviews of the byelaw may result in:

- **Maintenance of existing provisions** – where review indicates that the provisions are adequate to the risk identified and sufficiently proportionate, permit conditions may be maintained.
- **Deterrent to non-compliance through effective enforcement** – application of enforcement action in accordance with the Authority's enforcement policy where appropriate
- **Enforcement Policies** – Specific enforcement policies can be developed which provide additional clarity on the meaning of the permit conditions and how the Authority intends to enforce them to enhance their effectiveness in lieu of revision them (short-term measure)
- **Revision to the permit conditions** –where necessary, the permit conditions may be varied or revoked. The process for doing so requires informal and formal consultation, an impact assessment and confirmation by the Authority. The timeframe for introducing, varying or revoking permit conditions is a minimum of 3 months.
- **Emergency byelaw** – where there is an urgent and unforeseeable need to do so and the byelaw does not provide for a certain type of permit condition to be implemented, the Authority may introduce an emergency byelaw under section 157 of the Marine and Coastal Access Act to implement management measures immediately. Emergency byelaws require consideration of stakeholder views and impacts on them. Emergency byelaws expire after 12 months, with the possibility of a 6 month extension in some cases.

3 Development of Management

Eastern IFCA's approach to management of Marine Protected Areas (MPAs) is informed by Defra's guidance to IFCAs and takes into account Natural England's advice.

Defra's guidance sets out the approach IFCAs should take in fulfilling their statutory duties. The *Byelaw Guidance*¹⁶ notes:

Byelaws should be seen as one of a range of solutions available to the IFCA and should normally only be considered where other non-regulatory measures have been exhausted.

Natural England's 2020 advice on the impacts of potting on the MCZ suggests:

ARM has the potential to deliver more appropriate and proportionate evidence-based management, that may allow EIFCA to work more effectively with the fishing industry.

In line with Defra's guidance and Natural England's advice, Eastern IFCA and stakeholders co-developed and introduced voluntary measures in the form of a Code of Best Practice to mitigate risks to the MCZ associated with lost and 'stored' gear.¹⁷ This approach saw community-supported mitigation brought in to address the highest risks from potting activity, more rapidly than would have been the case had a regulatory approach been pursued in the first instance. Moreover, it is consistent with the participatory nature of ARM and has achieved a level of buy-in from fishery stakeholders that can increase long-term compliance with future regulatory measures.

In parallel, through extensive stakeholder consultation, Eastern IFCA has developed a regulatory mechanism in the form of a flexible permitting byelaw (Cromer Shoal Chalk Beds Byelaw 2023¹⁸). The byelaw is intended to support the continued implementation of ARM in the MCZ by enabling regulatory measures to be introduced to manage active potting as informed by ongoing research workstreams. The Byelaw will also enable voluntary measures on lost and stored gear to be strengthened as required.

Together, the Code of Best Practice (Lost and Stored Gear) and the Cromer Shoal Chalk Beds Byelaw 2023 are intended to provide an agile framework for the

¹⁶ Defra, *IFCA Byelaw Guidance: Guidance on the byelaw making powers and general offences under Part 6, Chapter 1, Sections 155 to 164 of the Marine and Coastal Access Act* (March 2011). Available at: <https://www.gov.uk/government/publications/ifca-byelaw-guidance> *ibid*, p. 7.

¹⁷ Voluntary management has been proven to be effective in achieving fisheries management and conservation benefits in other parts of the UK. For example, the Inshore Potting Agreement is a voluntary fishery management system designed and operated by inshore fishers of south Devon that is regarded as a successful fishery management regime by fishers and managers because it has effectively allowed fishers from both sectors to operate profitably on traditional fishing grounds, and because it has continued to function for several decades. See: Available at: https://www.researchgate.net/publication/231747303_Voluntary_management_in_an_inshore_fishery_has_conservation_benefits.

¹⁸ This byelaw was made at the 51st meeting of the Authority on 8th March 2023.

implementation of ARM and to iteratively inform each other in line with the flexible approach (Figure 5).

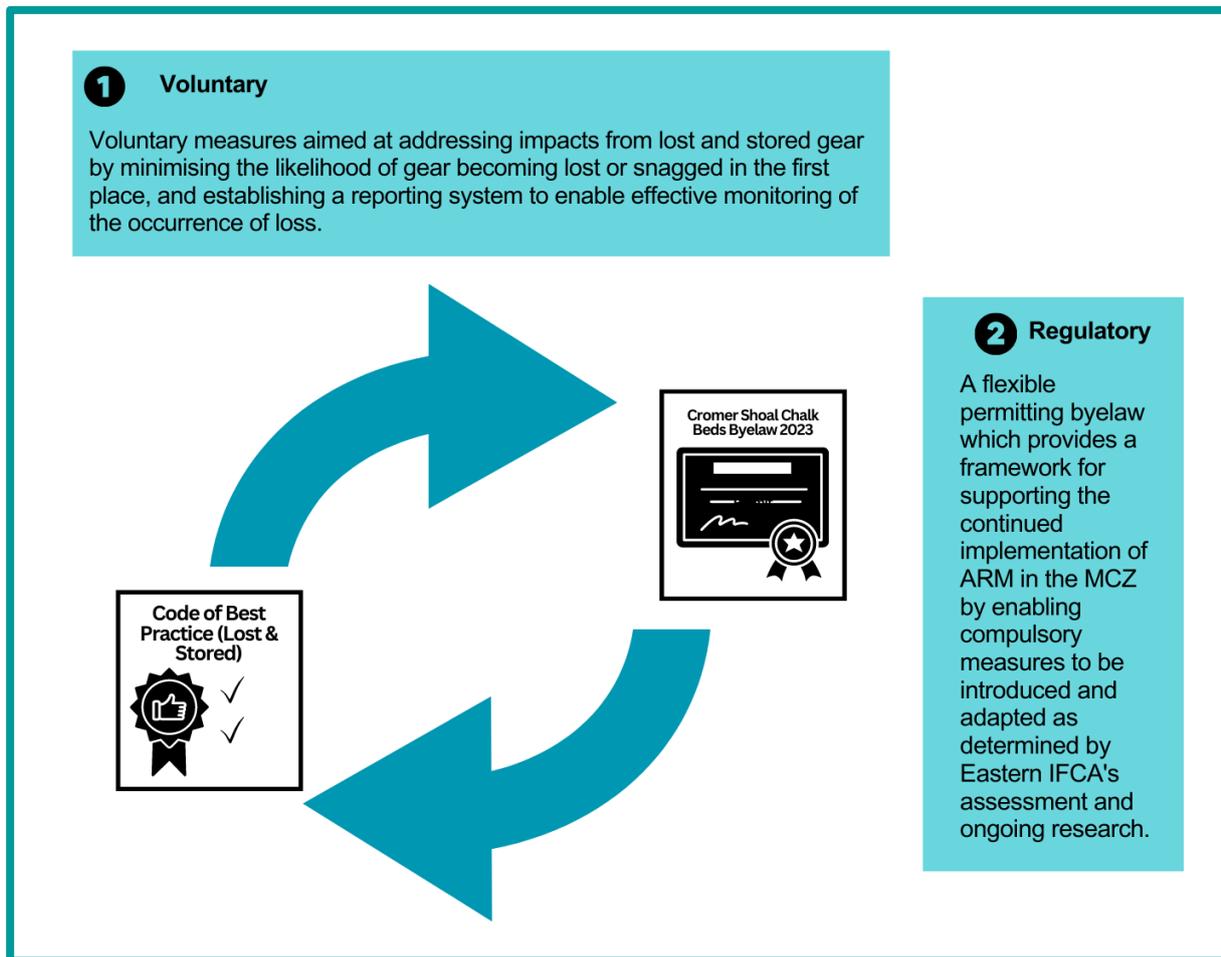


Figure 5 Mechanisms for implementing management in Cromer Shoal Chalk Beds MCZ, combining regulatory and voluntary approaches as part of Eastern IFCA’s Adaptive Risk Management (ARM) in Cromer Shoal Chalk Beds MCZ. Eastern IFCA’s assessment of voluntary management will help to inform the development of adaptive permit conditions under the Cromer Shoal Chalk Beds Byelaw 2023. Similarly, some measures may initially be trialled through the Code of Best Practice before being brought in as a permit condition under the byelaw

This management approach is considered to be suited to the level of risk to the MCZ and the delivery of ARM. This is because Eastern IFCA’s potting assessment concluded no imminent risk to the MCZ conservation objectives, i.e., arising from the cumulative effects of potting over time, rather than an imminent from current fishing pressures. As time goes on, the risk to the MCZ will increase and more restrictive management will be required unless further research and monitoring indicate otherwise.

Eastern IFCA’s implementation and monitoring approaches to the Code of Best Practice and the Cromer Shoal Chalk Beds Byelaw 2023 are outlined in sections 2.3 - 2.5.

3.1 Voluntary Management: Code of Best Practice (Lost and Stored Gear)

Voluntary measures can be implemented immediately but compliance with them is not mandatory and relies upon buy-in from impacted stakeholders to be effective. In lieu of a regulatory mechanism, Eastern IFCA implemented a voluntary ‘code of best practice’ for lost and stored gear to immediately address the risk to the MCZ associated with from this category of potting gear.

The Code of Best Practice (Lost and Stored Gear, Figure 6) was developed through dialogue with fishers potting within the MCZ to address impacts from lost and stored gear. This category of gear had been identified as posing a greater risk to the MCZ’s conservation objectives because of their greater potential for damaging interactions with the seabed than gear used in active fishing (see section 1.2).

The Code was agreed in 2022 and signed by North Norfolk Fishermen’s Society and Norfolk Independent Fishermen’s Association, together representing the majority of commercial fishers operating within the MCZ¹⁹. The development process was facilitated by the Management T&FG and informed by wider stakeholder consultation, including through the Stakeholder Group²⁰.

The Code reflects best practices in fishing to reduce the chances of gear becoming lost and snagged, commitments to address the issue of ‘storage’ of gear and establishes a reporting system in the event that loss does occur. It is intended to be iterative – to be refined and broadened over time as our understanding of what works and what does not develops and new ideas emerge – in line with the ARM cycle described in Figure 3 above.

The Code enables a level of mitigation to be introduced in relation to lost and stored gear while the Cromer Shoal Chalk Beds Byelaw 2023 goes through the byelaw-making process. Moreover, the Code or other voluntary measures would be considered as a means of refining mitigation prior to its implementation under the byelaw.

¹⁹ <https://www.eastern-ifca.gov.uk/press-release-code-of-best-practice-launched-to-tackle-lost-gear-in-cromer-shoal-chalk-beds-mcz/>

²⁰ <https://www.eastern-ifca.gov.uk/management-update-outcome-report-on-the-informal-consultation-on-the-code-of-best-practice-for-potting-in-cromer-shoal-chalk-beds-mcz-now-published/>

Code of Best Practice

POTTING IN CROMER SHOAL CHALK BEDS MCZ

This Code of Best Practice seeks to build upon and promote existing best practice to mitigate the risks posed by lost and stored gear. The Code will be refined and broadened over time as we develop our understanding of what works and as new ideas emerge.

- 1 Pots will never be stored in the MCZ while not being used to actively fish.
- 2 Pots will be kept out of the rugged chalk if not regularly turned over (at least every 3-4 days) to minimize the risk of damage to gear and the rugged chalk of the MCZ.
- 3 During winter months and periods of bad weather pots will be kept away from the rugged chalk of the MCZ to minimize the risk of gear loss and damage to the chalk as a result of bad weather.
- 4 Fishermen will make every effort to retrieve or otherwise make secure (e.g. by moving to deeper water and away from the rugged chalk) any pots at sea prior to any forecasted storm event to prevent pots from becoming lost and to minimize any potential damage to the rugged chalk resulting from stormy weather.
- 5 If a fisherman is unavailable (e.g going on holiday) they will remove any gear from rugged chalk areas or make arrangements for their gear to be regularly turned over (at least every 3-4 days) by somebody else in their absence.
- 6 Fishermen will maintain all gear and avoid using old and damaged gear that is more likely to become lost.
- 7 If gear is old and unwanted, it will be disposed of safely and responsibly and never discarded at sea.
- 8 Fishermen will make every reasonable attempt to recover gear which has become snagged or lost as soon as possible.
- 9 If a fisherman is unable to recover gear which has become irretrievably snagged, missing or lost, they will notify Eastern IFCA as soon as practicable.
- 10 A notification to Eastern IFCA will be as detailed as possible and include such information as:
 - Name and PLN of vessel
 - Type and quantity of gear missing, lost or snagged
 - Date/time when the gear became missing, lost or snagged
 - Position
 - Measures taken to retrieve the gear

Endorsed by North Norfolk Fishermen's Society and Norfolk Independent Fishermen's Association.

Figure 6 Code of Best Practice: Lost and Stored Gear

3.2 Regulatory management: Cromer Shoal Chalk Beds Byelaw 2023

Cromer Shoal Chalk Beds Byelaw 2023 is a flexible permitting byelaw, developed to provide a framework for the continued delivery of ARM in the MCZ. The byelaw was developed through extensive stakeholder consultation, conducted in two phases from June 2022 – January 2023. The byelaw was made at the 51st statutory meeting of the Authority on 8th March 2023.

Aims, Intended Outcomes, and Byelaw Structure

The overall objective of the byelaw is to further the conservation objectives within the MCZ through an ARM approach. The intended outcomes are:

- ✓ To develop and introduce appropriate and proportionate evidence-based management measures to reduce fishing pressures on sensitive features such that those pressures are kept within levels that are compatible with furthering the site's conservation objectives.
- ✓ To enable flexible management that can adapt to best available evidence.
- ✓ To minimise the social and economic costs to stakeholders of management that is either too precautionary or not precautionary enough, to the extent that this is compatible with Eastern IFCA's statutory duties.
- ✓ To contribute to the achievement of government policy on fisheries management and marine conservation, including the high-level fisheries objectives under the Fisheries Act 2020, the Joint Fisheries Statement, the UK Marine Strategy and the Environment Improvement Plan 2023.

The byelaw consists of both substantive and flexible measures. Figure 7 summarises its key components. Section 2.4 details how the byelaws provisions will be applied to management of potting activity in the MCZ.

Flexible permitting byelaws have become a relatively common-place form of management used by IFCAs and have successfully been used to implement adaptive management in other parts of the UK.²¹ Permit conditions do not have to be specified on the face of the byelaw and are instead attached to permits at the discretion of the Authority without confirmation of the Secretary of State. Significant process is included in such byelaws to avoid 'unlawful sub-delegation of powers' which include consultation with affected stakeholders and consideration of the impacts on such. Despite such process, flexible permit byelaws provide a significantly more fleet of- foot

²¹ JNCC (July 2019) *Developing a participatory approach to the management of fishing activity in UK offshore Marine Protected Areas: Review of the Current Context of Adaptive Risk Management*, p. 6. Available at: <https://data.jncc.gov.uk/data/80152204-c084-4b5c-8516-c5cde4a63318/Current-context-of-Adaptive-Risk-Management-review-V1.0.pdf>. This paper points to Sussex IFCA's implementation of ARM to a native oyster fishery in their district through the use of a permitting byelaw.

approach to implementing, reviewing and revising management than a ‘traditional’ byelaw which lends itself to the ARM approach.

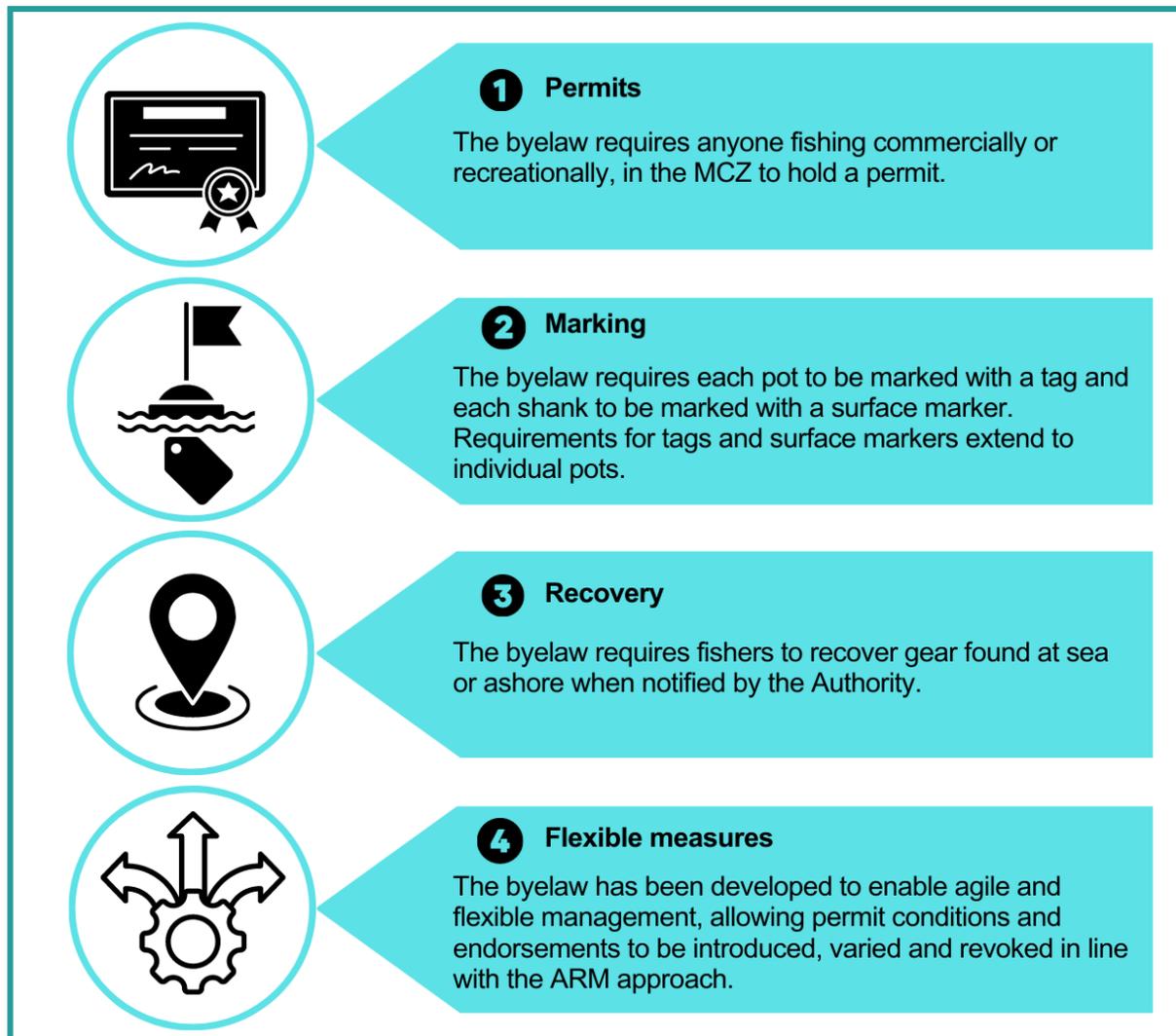


Figure 7 Overview of the key elements of Cromer Shoal Chalk Beds Byelaw 2023

Geographical Scope

The geographical scope to which the byelaw is proposed to apply includes the area of the MCZ designation¹ and the inshore area 200 metres from the low water mark (see Figure 8 below). This is proposed for administrative and logistical purposes as relying on the boundary as defined in the designating order would make prohibitions difficult to enforce.¹ While it is proposed that the byelaw applies to this inshore area, the Authority would have discretion on whether to introduce flexible management measures in this area when these are being considered.

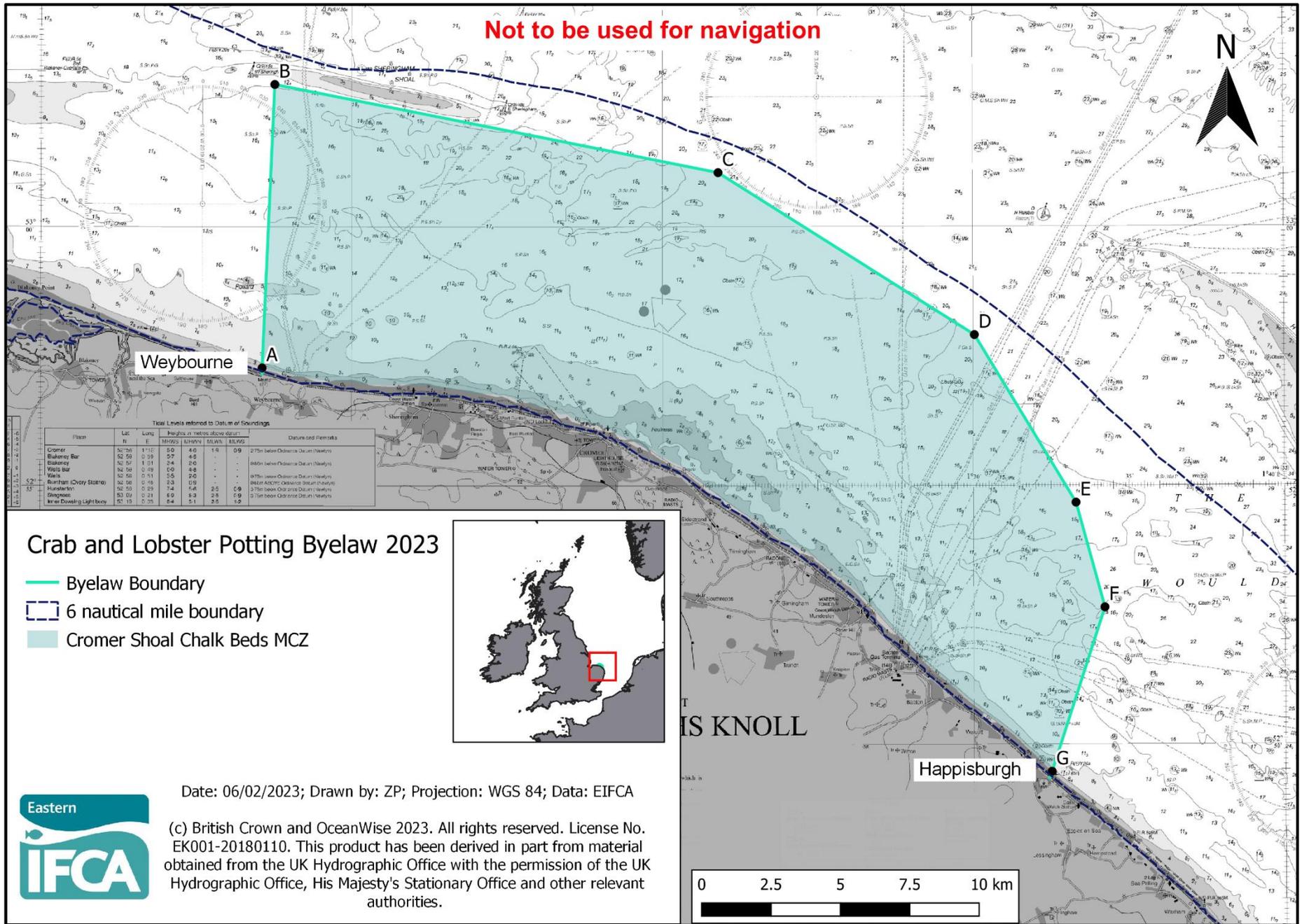


Figure 8 Chart showing the geographical scope of Cromer Shoal Chalk Beds Byelaw 2023

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Appendix 1: Management Options

Management Options for reducing the frequency and severity of interactions between potting gears and rugged chalk features are set out below. This reflects, and elaborates upon, the hierarchy of measures shown in Figure 1, Section 1 of the main ARM Plan document.

For each option, consideration is made of the way the pressure is reduced, potential mechanisms for implementation and possible methods for monitoring effectiveness and compliance.

Management option	How will this reduce the identified pressure?	How could it be implemented?	How could effectiveness and compliance be monitored?
1. Full closure of rugged chalk area to potting fishery	<p>Would result in complete removal of contact between active potting gear and the rugged chalk feature.</p> <p>Would not prevent existing lost pots interacting with chalk feature, but would prevent future loss of pots in rugged chalk area.</p>	<p>a) Voluntary closure, e.g. written into a Code of Best Practice (unlikely to be successful because of value of rugged chalk area to potting fishery)</p> <p>b) Eastern IFCA Byelaw 8: Temporary Closure of Shellfish Fisheries (need legal advice on its applicability; not a long-term measure)</p> <p>c) Permit condition under the agreed Eastern IFCA Cromer Shoal Chalk Beds Byelaw 2023 (preferred option)</p>	<p><i>Monitoring fishing activity:</i></p> <ul style="list-style-type: none"> • I-VMS/VMS and/or tracker data; • Electronic pot tagging • Catch returns with high-res spatial grid; • Enforcement patrols • Intelligence gathered through direct engagement with fishers or other means

Management option	How will this reduce the identified pressure?	How could it be implemented?	How could effectiveness and compliance be monitored?
<p>2. Partial closures (zoned closures) of high rugosity rugged chalk areas to potting fishery.</p>	<p>Would result in reduction in amount of contact between active potting gear and high rugosity rugged chalk, currently believed to be more sensitive to fishing pressures than less-rugose rugged chalk.</p> <p>Would not prevent lost pots interacting with chalk feature but would prevent future loss of pots in high rugosity areas.</p>	<p>As for Option 1.</p>	<p><i>Monitoring fishing activity:</i></p> <ul style="list-style-type: none"> • As for Option 1 <p><i>Monitoring feature condition:</i></p> <ul style="list-style-type: none"> • Long term monitoring of open and closed areas through using high resolution multibeam data
<p>3. Access limitation i.e. limiting the number of potting vessels that may fishing in the rugged chalk area</p>	<p>Would potentially result in a reduction in amount of contact between active potting gear and rugged chalk. However, unless combined with other conditions for fishing activity (e.g. seasonal closures and/or pot limits, this option might not guarantee a reduction of the amount of gear in the rugged chalk area).</p> <p>Need robust rationale for threshold level.</p> <p>Would not prevent lost pots interacting with chalk feature.</p>	<p>An access limitation scheme could be implemented through Eastern IFCA's agreed Cromer Shoal Chalk Beds Byelaw 2023 by:</p> <ul style="list-style-type: none"> • Limiting the number of permits issued • Introducing eligibility policy • Introducing an endorsement for fishing on the rugged chalk and limiting the number of endorsements issued 	<p>Monitoring fishing activity:</p> <ul style="list-style-type: none"> • As for Option 1 and 2.

Management option	How will this reduce the identified pressure?	How could it be implemented?	How could effectiveness and compliance be monitored?
<p>4. Gear requirements (adaptation and use). For example:</p> <p>a) Restrictions on the type of pots used in the rugged chalk area to modified, “low impact” pots</p> <p>b) Restrictions on the types of ropes used in the rugged chalk area to lower impact ropes (e.g. buoyant ropes)</p> <p>c) Limit the number of pots deployed on the rugged chalk</p> <p>d) Requirements on turnover time to</p>	<p>a) Reduce the frequency and/or scale of damage to rugged chalk from contact with pots. <i>(N.B. needs research to prove concept)</i></p> <p>b) Reduce the frequency and/or scale of damage to rugged chalk from contact with ropes. <i>(N.B. needs research to prove concept)</i></p> <p>c) Would result in a reduction in amount of contact between active potting gear and rugged chalk. Need robust rationale for threshold level.</p> <p>Would not prevent lost pots interacting with chalk feature.</p> <p>d) Reduce damaging interactions resulting from gear being left in situ for long periods of time <i>(N.B needs research to prove concept)</i></p>	<p>Through agreement under a voluntary Code of Best Practice</p> <p>As permit conditions under the Cromer Shoal Chalk Beds Byelaw 2023 (preferred option)</p>	<p>Eastern IFCA monitoring of pot/rope use and tagging requirements through engagement, sea and shore patrols, and admin checks.</p> <p>Conditions on gear turnover could be monitored through tracking technologies like I-VMS/VMS and electronic pot tagging systems like pit tags and readers</p> <p><i>Monitoring feature condition:</i></p> <p>Dive or video surveys to quantify damage in rugged chalk area before and after measure introduced (needs BACI to be robust - expensive and difficult)</p>

Management option	How will this reduce the identified pressure?	How could it be implemented?	How could effectiveness and compliance be monitored?
<p>prevent 'storage' of potting gear</p> <p>e) Gear marking requirements (pot tags and surface markers)</p>	<p>e) Improved understanding of level of effort in potting fishery – will not reduce contact between pots and rugged chalk by itself but supports enforcement of spatial and or technical measures to reduce contact. Enables the traceability of gear to facilitate lost gear management solutions.</p>		
<p>5. Vessel Restrictions (e.g. restrict activity in rugged chalk area to beach-launched vessels only)</p>	<p>Preventative measure to stop larger vessels with more pots from fishing in rugged chalk area – i.e. limits amount of contact between potting gear and rugged chalk.</p> <p>Believed likely to lead to a reduction of damaging interactions over time due to the aging demographic of the current fleet and the lack of new entrants into the fishery.</p> <p>Does not prevent small vessels increasing number of pots they use.</p>	<p>Through a permit condition and/or eligibility policy under the Cromer Shoal Chalk Beds Byelaw 2023.</p>	<p><i>Monitoring fishing activity:</i></p> <ul style="list-style-type: none"> • Permits to fish in specified areas only allocated to beach launched vessels • I-VMS/VMS and/or tracker data; • Catch returns with high-res spatial grid; • Intelligence gathered through direct engagement with fishers or other means

Management option	How will this reduce the identified pressure?	How could it be implemented?	How could effectiveness and compliance be monitored?
			<p><i>Monitoring feature condition:</i></p> <p>Dive or video surveys to quantify damage in rugged chalk area before and after measure introduced (needs BACI to be robust - expensive and difficult)</p>
<p>6. Seasonal closures i.e. closures of the rugged chalk to fishing during specified periods, for example periods of heightened stormy conditions.</p>	<p>Would result in reduction in amount of contact between active potting gear and rugged chalk.</p> <p>Would not prevent lost pots interacting with chalk feature.</p>	<p>a) Voluntary closure, e.g. written into a Code of Best Practice (unlikely to be successful because of value of rugged chalk area to potting fishery)</p> <p>b) Eastern IFCA Byelaw 8: Temporary Closure of Shellfish Fisheries (need legal advice on its applicability; not a long-term measure)</p> <p>c) Permit condition under the agreed Eastern IFCA Cromer Shoal Chalk Beds Byelaw 2023 (preferred option)</p>	<p><i>Monitoring fishing activity:</i></p> <ul style="list-style-type: none"> • I-VMS/VMS and/or tracker data; • Catch returns with high-res spatial grid; • Intelligence gathered through direct engagement with fishers or other means <p><i>Monitoring feature condition:</i></p> <p>Long term monitoring of open and closed areas through using high resolution multibeam data</p>

Management option	How will this reduce the identified pressure?	How could it be implemented?	How could effectiveness and compliance be monitored?
7. Voluntary management of fishing activity, for example through Codes of Best Practice. Measures could include any of those identified in the options above	Dependent on the measure (see above).	Through agreed Codes of Best Practice or other similar voluntary agreements.	Dependent on the measure (for examples, please refer to the ARM plan for Eastern IFCA's monitoring approaches for the current Code of Best Practice on Lost and Stored Gear).

Appendix 2: Task and Finish Group Aims and Objectives

Management Task and Finish Group (TFG)

Responsible for collaboratively identifying, developing and proposing the best management solutions for mitigating risks to the MCZ and providing recommendations for management to the Project Board

Overall Aim: develop proposals for management measures and to oversee the implementation of management measures agreed and implemented by Eastern IFCA for pot-based fishing activity within the Cromer Shoal Chalk Beds MCZ through the ARM process, to protect the site in a manner consistent with the Conservation Objectives.

Objective 1	Objective 2	Objective 3
<p>Develop measures and implementation plan for the following:</p> <ul style="list-style-type: none"> a) Mitigating impacts of lost and 'stored' pots b) Effective fishing effort and location monitoring c) Mitigating impacts as identified via an MCZ assessment d) Adjust measures as appropriate based on the findings of the research T&F group, in line with an ARM approach 	<p>Develop measures which:</p> <ul style="list-style-type: none"> a) will be effective at mitigating impacts identified b) are practically achievable and enforceable a) c) incorporate findings of the research task and finish group 	<p>Develop implementation plans which:</p> <ul style="list-style-type: none"> a) enhance compliance through education and engagement b) have timelines which address the level of risk associated with impacts whilst recognising the practicality of fishery stakeholders changing fishing practices b) c) are clear and transparent

Research and Development Task and Finish Group (TFG)

Responsible for providing the scientific evidence required by the Project Board to inform the development of management measures and ARM. This group brings together scientists, fishermen, and other key advisors to draw on their knowledge, determine what information is required, how to get it, and then to deliver the research.

Overall Aim:

- 1) To ensure that the information required to implement an effective Adaptive Risk Management approach of the impacts from potting fishing activity on the rock (chalk) seabed of the Cromer Shoal MCZ is available.
- 2) To identify if impacts are within an acceptable range, in respect of the conservation objectives of the site.
- 3) To identify viable alternatives to existing fishing methods (practices and/or gear) through an Adaptive Risk Management Approach.

Objective 1	Objective 2	Objective 3	Objective 4
<p>Determination of the locations of the chalk feature which is sensitive to damage from potting -</p> <ol style="list-style-type: none"> a) Definition / Description of what character of “chalk” renders it susceptible to effects from potting. b) Determination of the range of sensitivities of chalk to different types (characteristics – equipment and methods) of potting. c) Determination of effects that changes in the physical structure of the chalk due to potting have on the species and ecology. d) Determination of the location of Chalk of varying sensitivities. 	<p>Characterisation of potting fishing activity within the MCZ – where, when, how (methods, equipment) and how much. Where feasible, identify the drivers for particular approaches to potting.</p>	<p>Determination of the effect of potting on the sensitive chalk feature</p> <ol style="list-style-type: none"> a) Determination and quantification of effects from potting, and how this varies within the range of potting activities conducted in Cromer Shoal MCZ and the varying sensitivities of chalk. a) b) Determination of the “acceptable” level of impact to be consistent with the conservation objectives of the site. 	<p>Identification if there are viable alternative ways (equipment, techniques, methods, locations) of potting that will have an effect within the “acceptable” range.</p>

Appendix 3: Uncertainties requiring further research

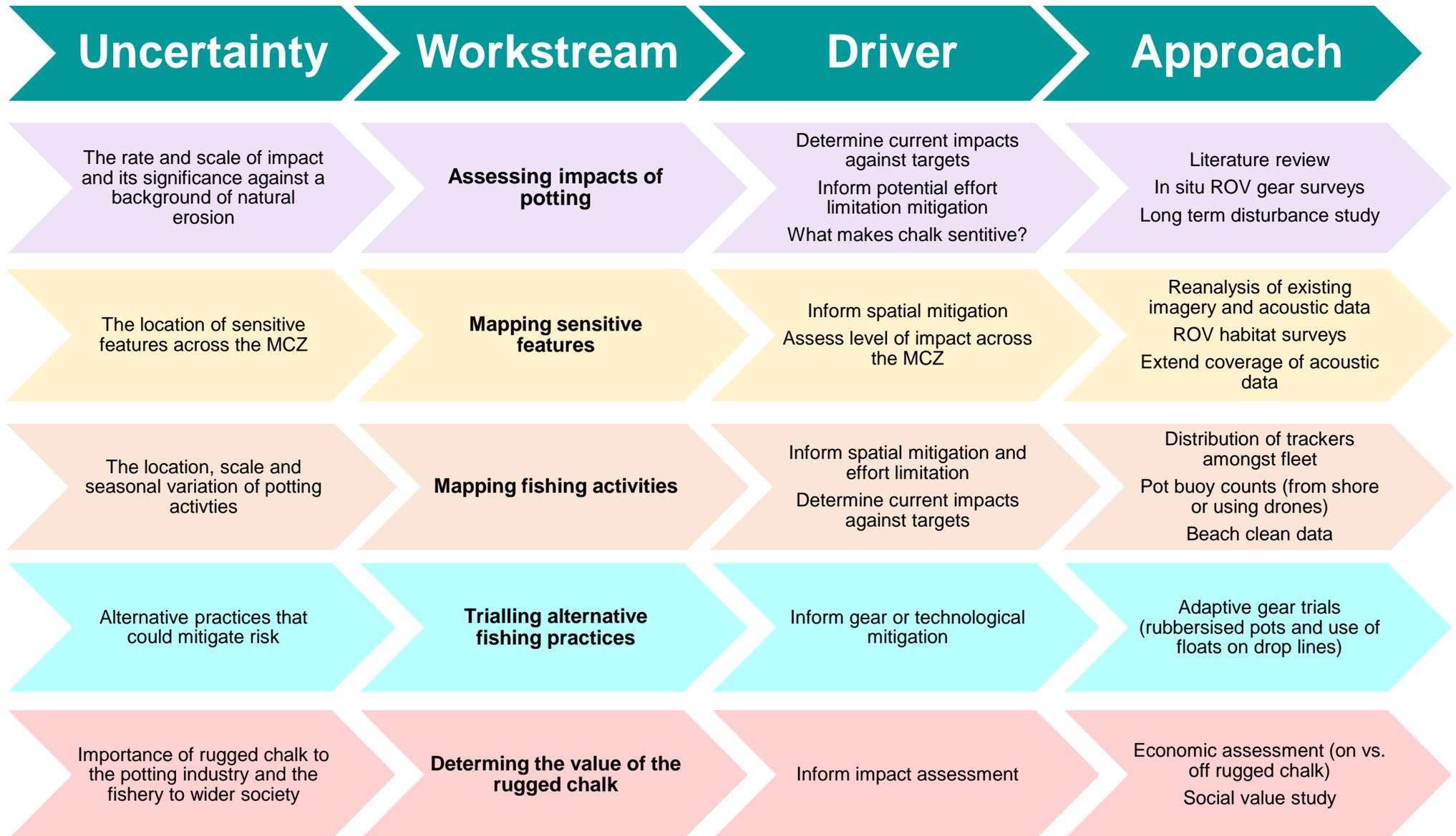


Figure 1 workstreams developed by the Research and Development Task and Finish Group to address uncertainties identified in Eastern IFCA's assessment of potting activities v5.0

Appendix 4: Cromer Shoal Chalk Beds MCZ Risk Matrix

Cromer Shoal Chalk Beds MCZ Risk Matrix

This risk assessment sets out Eastern IFCA's evaluation of the current risk to Cromer Shoal Chalk Beds MCZ from potting activities and relates to the risk of hindering the achievement of the sites Conservation Objectives for features identified as sensitive in Eastern IFCA's Potting Assessment (April 2022): *Subtidal chalk* and *Peat and Clay Exposures* (Peat and Clay exposures have been considered together with subtidal chalk feature in line with advice provided by Natural England in November 2018 and January 2023). This document does not replace the full MCZ assessment document but provides a risk summary that will be regularly updated to reflect changes to evidence relating to the protected features, potting activities, and interactions between them.

Risk is informed using the risk matrix on the right. The matrix sets out the severity of each identified risk and the likelihood of it occurring, both ranked on an arbitrary scale from 1 (negligible effect / rare occurrence) through to 5 (severe impact to feature; certainty of occurrence). Subsequent risk is ranked according to the multiplied scores for severity and likelihood from low (coloured green) to high risk (coloured red). A precautionary approach is applied to the risk assessment and assumes a higher risk where there is uncertainty. The document also describes mitigation (some already in place, or to be introduced) to reduce the identified risk to features from potting activity of which further details are provided in n Eastern IFCA's ARM Plan.

Risk will be reviewed on a quarterly basis and documented in this spreadsheet, but because of the relatively extended timescales for the development and implementation of management, and for research outcomes to emerge, we are not anticipating frequent changes to the risk scores. This page provides a summary of the overall risk of the identified impacts ('risks') to the site as assessed over time.

For the purpose of this assessment short term is defined as within the next 5 years and long term is defined as anything over 5 years. These timescales have been used as they are consistent with the timescales being worked to for ARM.

Severity	Severe	5				High
	Major	4				
	Moderate	3	Medium			
	Minor	2	Low			
	Negligible	1				
Likelihood/severity risk matrix		1	2	3	4	5
		Rare	Unlikely to occur	Possible	Likely to occur	Almost certain
		Likelihood				

Severity		Likelihood	
1	Negligible	1	Rare/will not happen
2	Minor (surface level effects)	2	Unlikely to occur
3	Moderate (small scale changes to the structure of a feature)	3	Possible
4	Major (large scale changes to the structure of a feature)	4	Likely to occur
5	Severe (features removed)	5	Almost certain

High	Take positive action to mitigate risk
Medium	Work towards reducing risk and uncertainty
Low	Risk no longer considered to be material

Overall Risk (likelihood x severity) :				Apr-23	Jul-23	Oct-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25	Jul-25	Oct-25	Jan-26	Apr-26	Jul-26	Oct-26	Jan-27	Apr-27	Jul-27	Oct-27	Jan-28	Apr-28	Jul-28	Oct-28	Jan-29	Apr-29	Jul-29	Oct-29	Jan-30	Apr-30	Jul-30	Oct-30			
Impacts	Cumulative effects of repeated Abrasion impacts	Active gear	Short term	6	6	6	6																														
			Long term	8	8	8	8																														
		Lost/stored gear	Short term	6	6	6	6																														
			Long term	9	9	9	9																														
	Cumulative effects of repeated Penetration impacts	Active gear	Short term	9	9	9	9																														
			Long term	12	12	12	12																														
		Lost gear/stored	Short term	8	8	8	8																														
			Long term	12	12	12	12																														