

Cromer Shoal Chalk Beds MCZ Adaptive Risk Management



Natural Disturbance Study: An Independent Review (APEM)

Eastern IFCA summary of report

March 2026

Summary

Eastern Inshore Fisheries and Conservation Authority (IFCA) commissioned an independent review of the *Natural Disturbance Study* to ensure it is sufficiently robust and identify if any adjustments are required for it to achieve its aims. The study has been designed to determine whether commercial potting accelerates the degradation of rugged chalk features within the Cromer Shoal Chalk Beds Marine Conservation Zone (MCZ) and forms part of Adaptive Risk Management (ARM) of the site. The review concluded that overall the study is fit for purpose and capable of addressing the key research question, however, it made some recommendations for opportunities to strengthen the approach.

Key Findings

- The overall study design is scientifically sound and aligns with established approaches for separating anthropogenic impacts from natural change.
- Early data indicates high natural variability across sites which requires consideration during analysis and the application of appropriate analytical methods to account for the nested sampling design.
- Combining repeated acoustic data collection with the collection of seabed imagery, fishing effort monitoring and environmental data provides a robust framework for assessing structural change to seabed features. Multibeam offers the capacity to measure broad-scale structural change, while imagery, fishing effort and environmental monitoring provide the context needed to attribute that change to potting or natural processes.

- ROV imagery is essential for corroborating acoustic data, though variability in visibility, camera height and tow paths currently prevents comparability between repeated ROV surveys.
- Whilst the MBES resolution is theoretically sufficient to detect fine scale change, shallow-water survey conditions and vessel motion can introduce a level of error that likely prevents the reliable detection of differences of a few cm's in scale e.g. individual pot scars. However, as the study has the aim of quantifying cumulative structural change from repeated impacts rather than identifying single pot scars this does not undermine the ability of the approach to address the key research question.
- Backscatter data, critical for distinguishing genuine chalk erosion from sediment movement, was not collected consistently in Year 1, weakening the interpretation of this initial dataset.
- Averaging structural complexity metrics determined using 3d photogrammetric models across multiple samples reduces local variability and provides a representative measure of habitat complexity at the scale relevant to management decisions, however, this component of the study is not considered essential to achieving the overall goal of the project.

Key Recommendations

- Strengthen statistical analysis by adopting appropriate statistical models and consider using fishing effort as a continuous predictor where possible.
- Improve imagery repeatability of ROV data collection through fixed reference stations where feasible, consistent ROV deployment protocols and scale-referencing (e.g., lasers, improved positioning tools).
- Ensure consistent collection and processing of backscatter data in all future surveys to support interpretation of structural change.
- Focus MBES interpretation on patch-level, cumulative changes, supported by regular ground-truthing and other data, rather than attempting to detect individual pot scars.

These findings and recommendations are currently being considered by the Research and Development Task and Finish Group and proposals for adopting where feasible will be put to the Project Board with a view to further strengthening the study.