



Agenda item B3

From: Lead Scientific and Conservation Officer, Philip Haupt

To: Kent and Essex Inshore Fisheries and Conservation Authority – 27  
March 2025

Subject: Management & Monitoring of BCRC MCZ native oyster fishery.

Classification: **Unrestricted**

**Summary:**

In 2024 we reported a significant continued decline of the native oyster population in the Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zone (BCRC MCZ): Our survey data showed a decline of the population by 2023 compared to the longer-term (2016 to 2019) average population level.

We are not expecting the harvestable population to return to threshold levels defined in the Native Oyster Management Plan in the next year, owing to their relatively slow growth rates to reach 70 mm Minimum Conservation Reference Size (MCRS). We plan to survey the BCRC again in 2026 to assess the change in the population.

**Recommendation(s):**

1. The Authority is asked to **APPROVE** the following management measures:
  - (a) It is **RECOMMENDED** that the BCRC MCZ Native Oyster Fishery remains closed in 2025 and 2026 because of a continued decline in the population and has not had sufficient time to recover to the required criteria set in the management plan;
  - (b) It is **RECOMMENDED** that the Authority to reviews the recommendations regarding the closure of the native oyster fishery within the BCRC MCZ site following the planned 2026 survey.

**1. Recap of the native oyster management process**

The native oyster fishery in the BCRC MCZ was closed on 31st May 2015. In 2019, the BCRC MCZ Native Oyster Fishery Flexible Permit Byelaw was introduced to protect the depleted native oyster stocks while allowing for future reopening if stocks show a significant and sustained recovery.

For the fishery to reopen, two key conditions must be met:

1. A sustained recovery trend in stock levels.
2. A biomass estimate exceeding 800 tonnes, based on a 20% dredge efficiency parameter.

The latter is equivalent to 1600 tonnes based on a 10% dredge efficiency parameter – as discussed in January 2024 – the update is advisable based on based on recent research findings published by University of Essex (Cameron et al., 2023).

The process for reopening the fishery is outlined in Figure 1. From 2019 to 2024, the committee approved maintaining the closure, with reopening only considered once recovery aligns with the management plan.

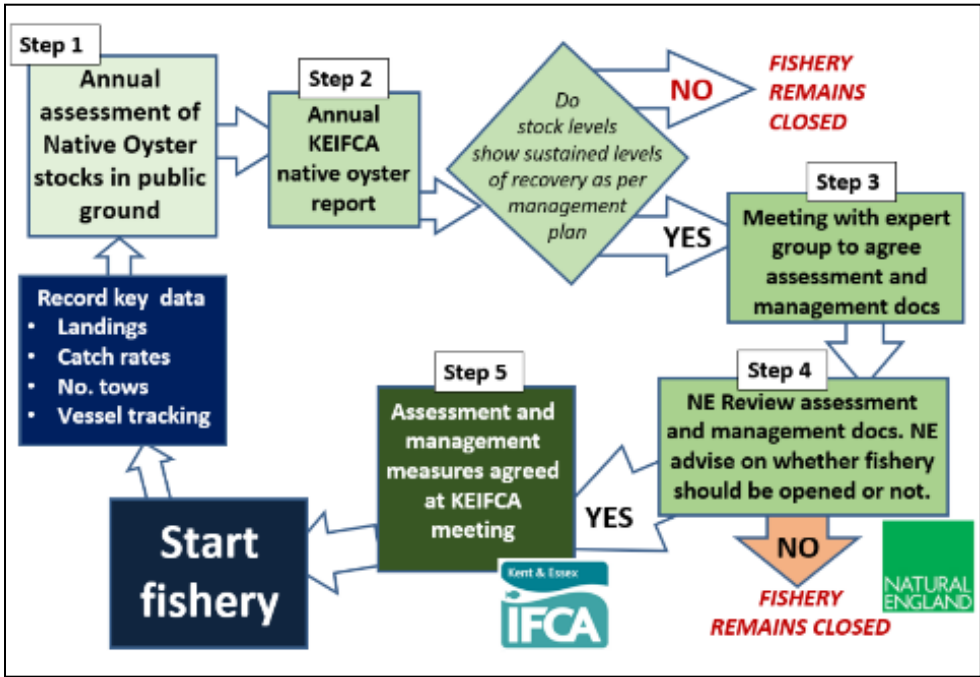


Figure 1. Flow chart depicting the process used to open or close the native oyster fishery in the BCRC MCZ.

## Recap of the 2023 survey results

KEIFCA conducted the annual native oyster survey in the BCRC MCZ in November 2023 to inform management decisions on reopening the fishery.

Sampling was carried out at 134 sites (including replicates) using a ladder dredge (100 m/tow) behind FPV *Tamesis*, targeting grid cells where native oysters were found in 2019.

The 2023 survey recorded 81 native oysters in 29 of 134 tows (21.6%), continuing the decline observed in 2022. The average density fell to 0.6 oysters per tow—a 90% decrease from the 2016–2019 mean (5.5 oysters/tow) (see Figure 1). This marked a significant ongoing decline in native oyster stocks within the MCZ.

In contrast, Pacific oyster numbers increased from 2022, returning to an average of 3.5 oysters per tow, similar to levels recorded between 2016 and 2019.

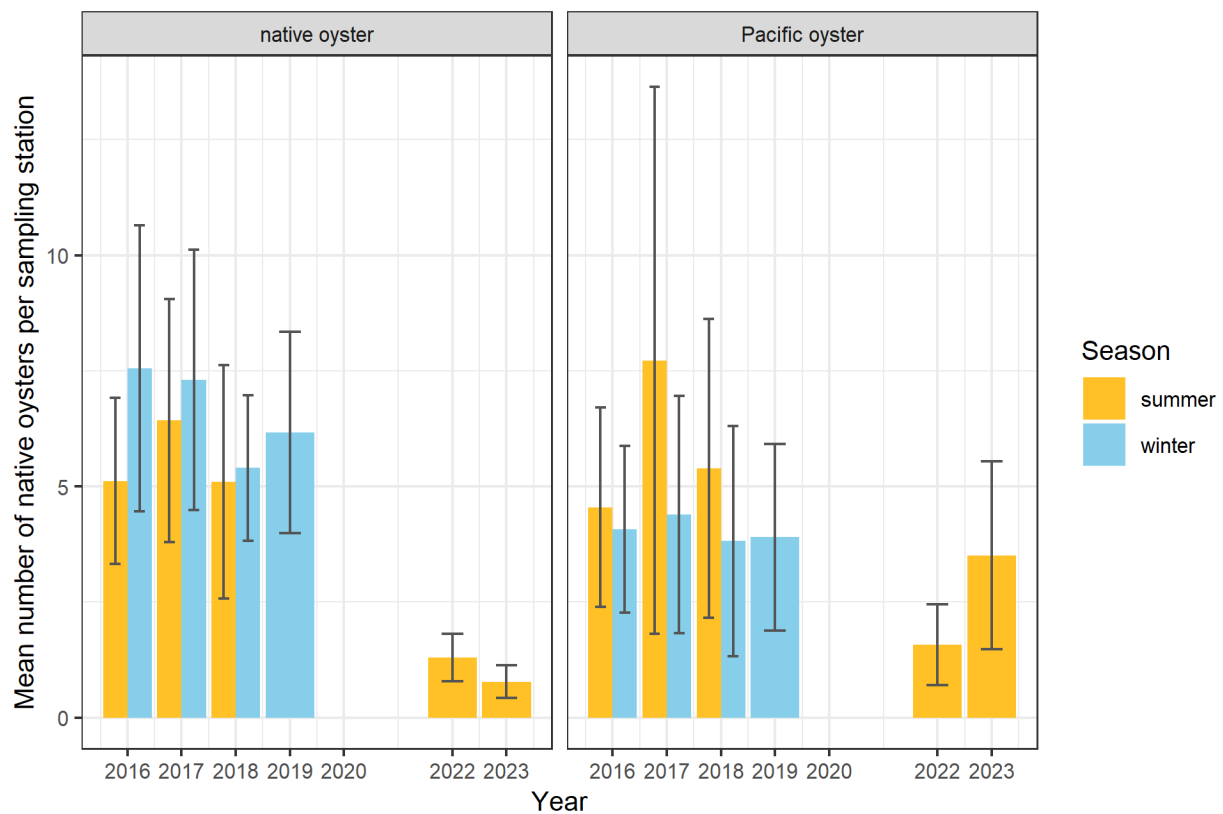


Figure 2. Change in the number of native oysters and Pacific oysters per sample (per tow of the dredge) for years 2016 - 2023 (missing years, 2020 and 2021, are due to no surveys carried out during COVID-19). Wide blue bars represent winter-only survey for a given year (i.e., no survey was carried out in summer of that year.) Large standard error bars indicate high variability of oyster abundances between sites during a survey.

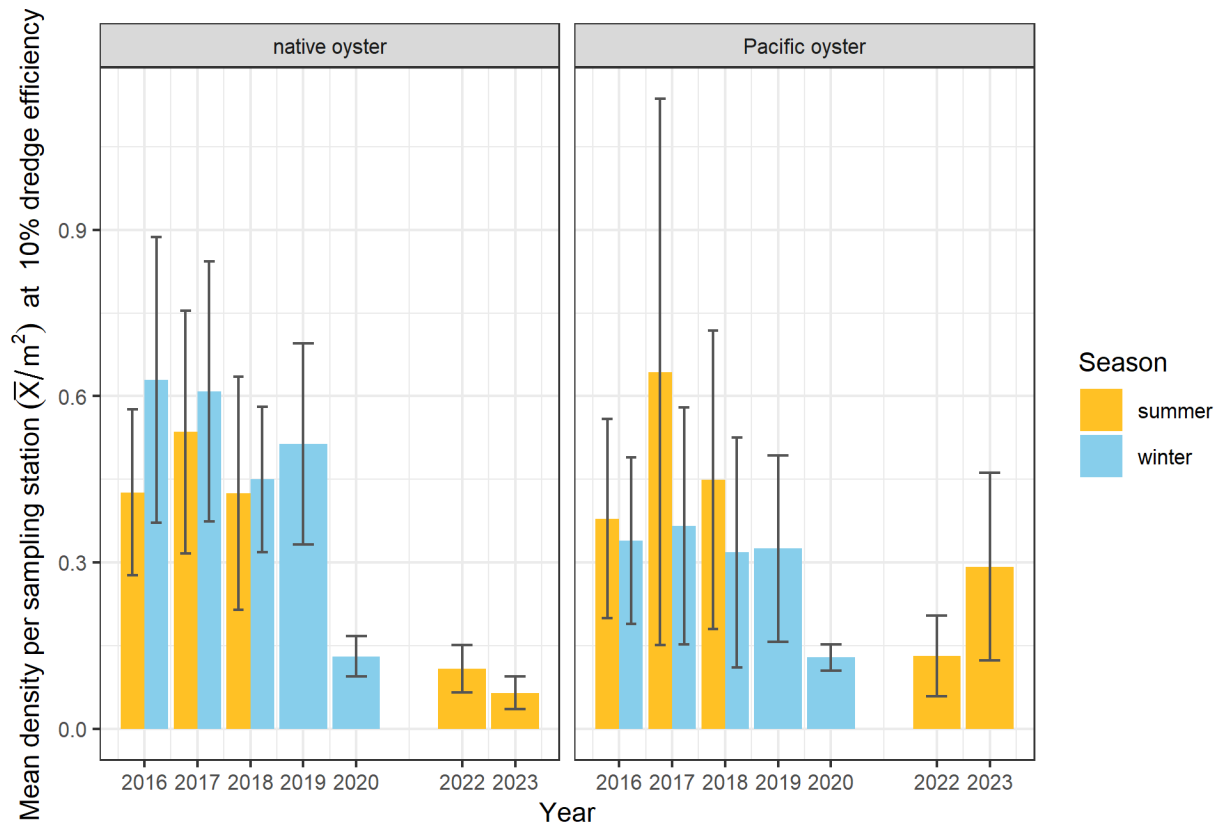


Figure 3. Change in density between seasons and years of native oysters (left) and Pacific oysters (right). Mean values per station presented with standard error bars showing variation among sampling stations during each survey. Dredge efficiency set at 10 % based on new Research.

The 2023 survey recorded **81 native oysters from 134 tows**, continuing the decline observed in 2022. For comparison:

- **2016 (Sept):** 443 oysters (102 tows)
- **2017 (Sept):** 483 oysters (99 tows)
- **2018 (Sept):** 385 oysters (99 tows)
- **2019 (Mar):** 596 oysters (99 tows)
- **2022 (Sept):** 134 oysters (132 tows)

As in 2022, losses were widespread across the sub-populations in the BCRC. Native oysters were absent from areas where they were previously recorded between 2016 and 2019, including **Wallet Spitway, Whitaker Channel, Outer Colne, and The Eagle**. Outside these sub-populations, only a single oyster was found in the Blackwater subpopulation (Figure 4).

The 2023 findings reinforce the 2022 results: native oyster distribution in the BCRC MCZ is now largely confined to the **Crouch and Ray Sand Channel**, which were historically key habitats (2016–2019). However, both areas saw further declines:

- **Crouch:** Mean abundance fell to **3.4 oysters per sample**, down from **5.9 in 2022** and **18–38 oysters per sample historically**.
- **Ray Sand Channel:** Mean abundance dropped from **1 oyster per sample in 2022** to **0.6 in 2023**.

These trends highlight the continued decline in native oyster stocks across the MCZ.

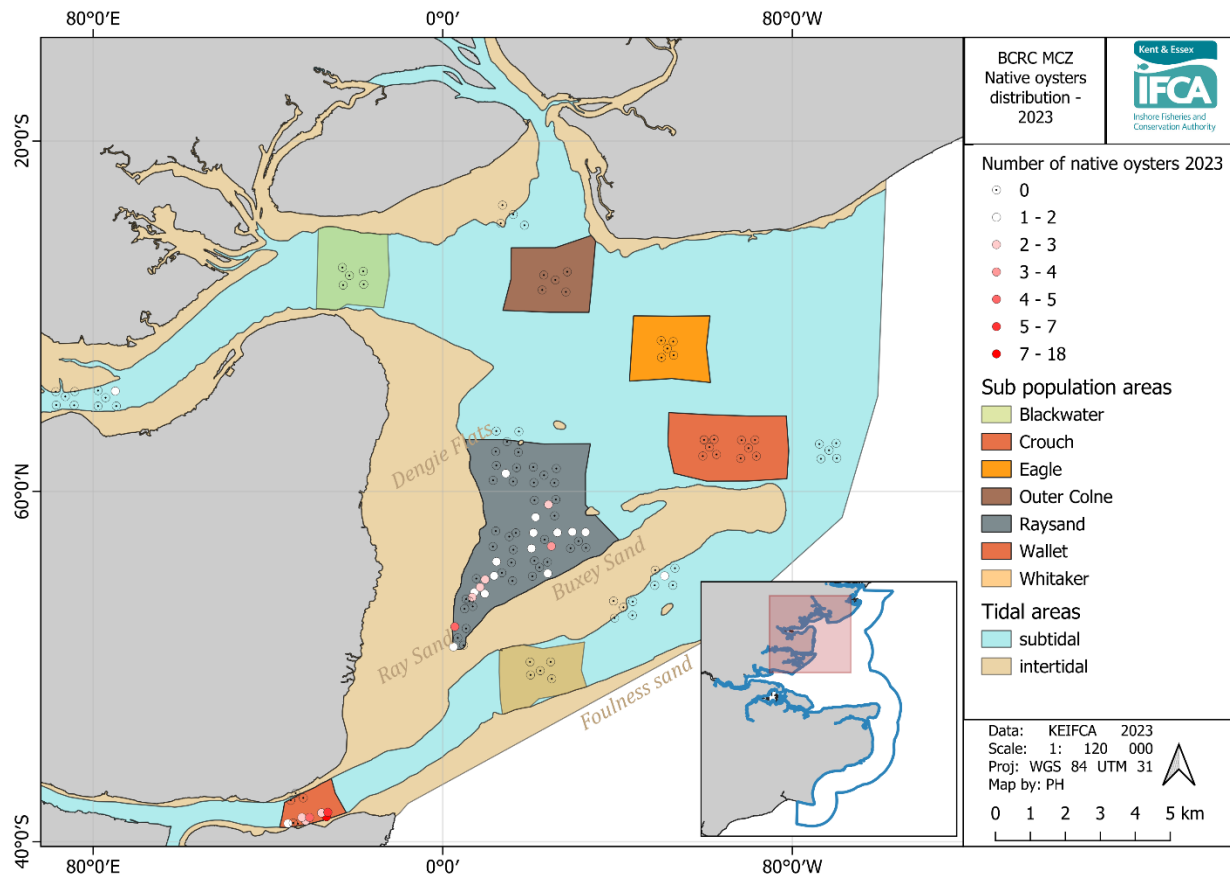


Figure 4. Number of native oysters recorded at each sampling station in 2023 Nov KEIFCA survey in the Blackwater Colne Roach and Crouch Marine Conservation Zone (BCRC MCZ).

### Size & weight distribution

In 2023, the **mean native oyster size** was **73.5 mm**, down from **78.5 mm in 2022**, with **57% exceeding the 70 mm minimum landing size**. The **average weight** also declined, from **96g in 2022** to **87g in 2023**.

As in previous years (2016–2019), small native oysters remained scarce, with no clear evidence of a recent successful recruitment event. This continued lack of juveniles suggests **limited short-term recovery potential** for the population.

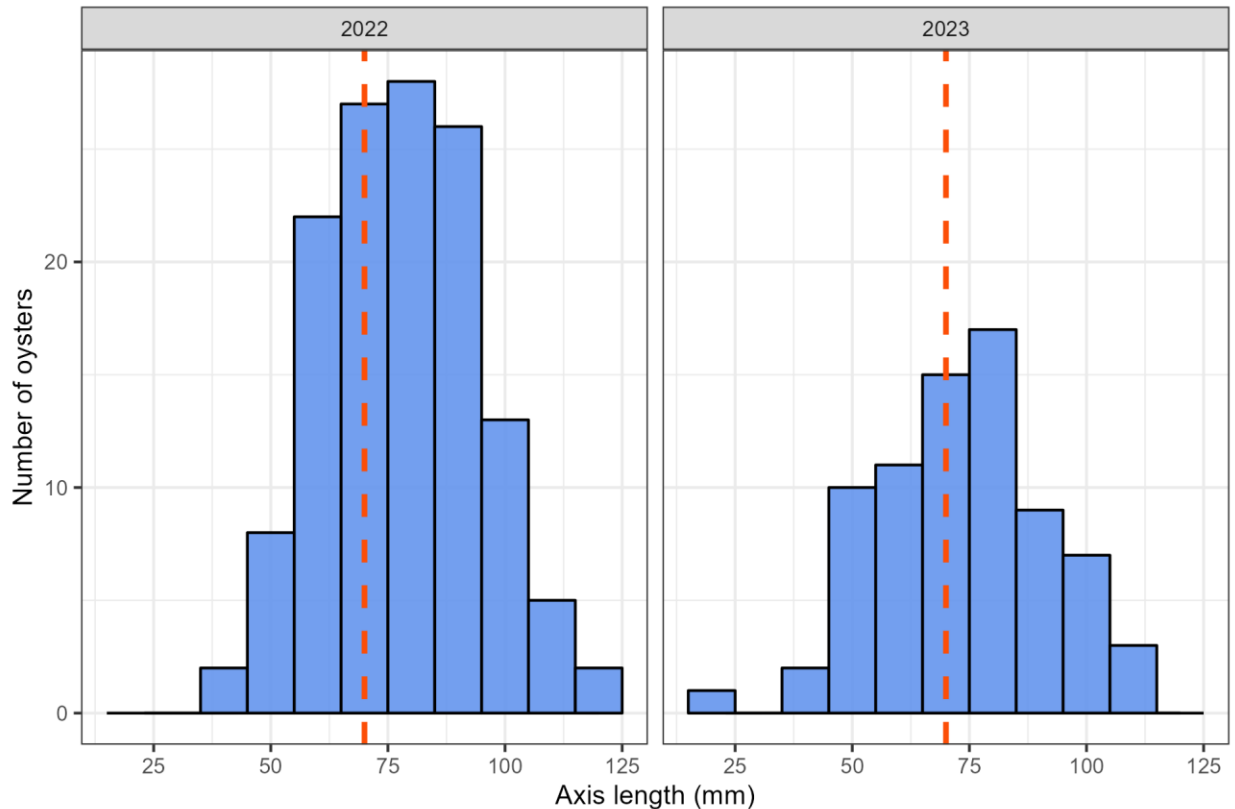


Figure 5. Native oyster size distribution frequency plots for 2022 and 2023.

### Biomass estimations

Dr. Lown’s PhD research with the University of Essex estimated native oyster biomass in the BCRC MCZ at **134–412.5 tonnes (2016–2018)**, based on a **20% dredge efficiency**. Given the sharp decline in abundance from **5.5 oysters per tow (2016–2019) to 0.6 in 2023**, biomass is now well below the **800-tonne threshold** required for reopening.

Biomass projections, calculated using **Inverse Weighted Distance (IWD) models**, confirm this decline. As a result, no **Habitat Regulations Assessment (HRA)** or **MCZ equivalent assessment** was conducted, and the fishery remains closed under the byelaw.

### Reasons for declines

The widespread nature of the decline suggests **environmental factors** as the primary drivers. Shellfish mortality is often linked to multiple stressors, including **increasingly frequent and intense marine heatwaves, disease**, and parasites such as *Bonamia*.

Additionally, there is uncertainty over whether native oysters in the BCRC MCZ can sustain themselves **without human intervention**, as seen in managed private grounds (Helmer et al., 2019).

## **2. ENORI**

We continue to support ENORI in its endeavors to understand options for an native oyster restoration programme, but have shifted the weight of our contribution to a related piece of work run by ZSL.

## **3. ZSL**

Following on from the 2 years of native oyster surveys that we have facilitated, ZSL have been working with HR Wallingford to develop a larval dispersal model and have identified key sites along the Kent Coast where reseeded may be a viable option. They are ground truthing these results in 2025.

## **4. Future work**

We are committed to and will continue the long-term monitoring of the native oyster population to provide important information for making decisions about this potential fishery.

## **5. Fishery Management Recommendations to KEIFCA Members**

### **Recommendation(s):**

1. The Authority is asked to **APPROVE** the following management measures:

- (a) It is **RECOMMENDED** that the BCRC MCZ Native Oyster Fishery remains closed in 2025 and 2026 because of a continued decline in the population and has not had sufficient time to recover to the required criteria set in the management plan;
- (b) It is **RECOMMENDED** that the Authority to reviews the recommendations regarding the closure of the native oyster fishery within the BCRC MCZ site following the planned 2026 survey.