Agenda item B5

From: Lead Scientific and Conservation Officer

To: Kent and Essex Inshore Fisheries and Conservation Authority – 29 November 2019

Subject: Update on native oyster projects

Classification: **Unrestricted**

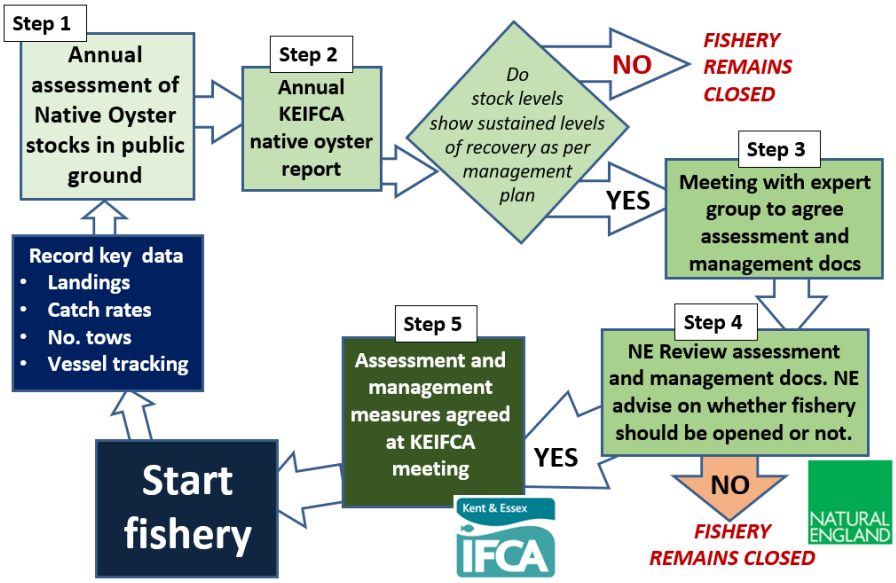
Summary:
This report provides a summary of the spring 2019 oyster stock assessment surveys and outcomes of a native oyster workshop which took place in July 2019. Resulting recommendations on the management of the 2019 native oyster fishery are included in this report and members are asked to review and approve this management.

Recommendation(s):
1. The Authority is asked to **APPROVE** the following management measures:
(a) Taking into consideration the survey evidence in the KEIFCA 2019 Oyster Survey Report it is **RECOMMENDED** that the BCRC MCZ Native Oyster Fishery remain closed in 2019.

(b) Taking into account the requirement for sustained levels of recovery as per the management plan it is **RECOMMENDED** that the BCRC MCZ Native Oyster Fishery remain closed in 2020. However, it is **RECOMMENDED** that at the November 2020 KEIFCA meeting consideration is given as to the future management and opening of the native oyster fishery within the BCRC MCZ site.

Background
Following the confirmation by the Secretary of State for Environment, Food and Rural Affairs of the Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zone Native Oyster Fishery Flexible Permit Byelaw in 2019, KEIFCA is now looking to develop the reports, meetings and procedures to inform management decisions as laid out in the byelaw and associated management plan. This paper marks the first time that an oyster management decision will be made under the new byelaw, and the intention is for the authority to decide in November each year on the possibility of a public oyster fishery.

The five-step procedure for opening the fishery and issuing permits (Fig.1) is built on the annual surveys of the public grounds within the BCRC MCZ site and the work carried out by Dr Lown and Essex University. This first management paper and annual KEIFCA native oyster report have been developed as part of this annual assessment process.



It is clear from the survey reports that there is currently insufficient evidence of recovery of the native oysters and that the stock levels currently do not show sustained levels of recover as per the management plan. However, KEIFCA officers felt that there was merit in developing an annual agenda item to update the Authority as to the progress of recovery and to act as a community forum where issues could be discussed.

1. Stakeholder Engagement

In future years, a stakeholder/permit holder meeting will likely be held to discuss technical measures and management of a potential fishery. This year, a native oyster workshop was held at the University of Essex on 11 and 12 July. It drew together various stakeholders with an interest in native oysters in the BCRC MCZ including ENORI, University of Essex, Essex Wildlife Trust, Natural England, and a very strong turnout from the local oystermen. There were three broad aims for the workshop:

- To discuss and review the native oyster data collected in the MCZ
- To discuss the process required to open a native oyster fishery within the MCZ, and the data necessary to support that process
- To discuss and agree what data needs to be collected in the future and the procedure for collecting that data

Attendees were given an update on the status of the Native Oyster Flexible Permit Byelaw before being presented with the results of the stock assessments from the previous 5 years. These figures had not previously been released as they formed a significant part of Dr Lown's PhD thesis.

Representatives from Southern IFCA and Sussex IFCA were present to share knowledge gained from managing native oyster fisheries in their own districts

including what data they used in their assessments and reports, and how they used that data.

Attendees were given the opportunity to scrutinise the procedure for the KEIFCA native oyster survey. This allowed a discussion of the reasons for the survey protocol and highlighted the important distinction between fishing for oysters (to achieve maximum catch in minimum time) compared to surveying for oysters (to achieve a view of population trends).

The workshop ended with a look to the future as Dr Lown presented her stock model work, and Natural England and the University of Essex spoke of the planned dredge efficiency project (due in 2020).

Outcomes from the workshop included:

- A plan on how best to evidence the recovery of the native oyster within the MCZ in order to have an HRA approved and a fishery opened
- A plan on how to report on an annual basis on the state of the native oyster stocks within the MCZ. This report is discussed below
- A plan to widen the survey area within the MCZ (this is discussed further in the report)
- A plan to involve the local oystermen in the surveying process through training and joint working to identify areas where native oysters may be located

2. Blackwater, Crouch, Roach and Colne Estuaries Marine Conservation Zone Native Oyster Fishery Flexible Permit Byelaw 2019

2.1 Closed public native oyster fishery

The public native oyster fishery within the BCRC MCZ has been closed since 2015, under the Shellfish Beds Byelaw due to inadequate stock. Native oyster stocks, a feature to be recovered within the public grounds of the MCZ, must increase significantly before a fishery can be opened.

2.2 Spring 2019 Oyster Stock Surveys

2.2.1 Method

Stock surveys on the seven areas within the BCRC MCZ, which have been surveyed since 2015, commenced in March 2019 and were conducted over five days. Ninety-nine samples were taken over an area of approximately 39.3 km^2. The survey was conducted using FPV Tamesis and a crew of KEIFCA officers. The survey methodology is described in more detail in the 2019 Native Oyster Report.

2.2.2 Results

Analysis of the results of the 2019 survey show that there has been little overall change in the total number of oysters in the MCZ overall since 2015. Data from 2016 to 2019 (spring surveys) is shown in Figure 1 overleaf. This data comes from PhD surveys conducted by Dr Lown and KEIFCA between 2016-18. Survey data is manipulated through Inverse Distance Weighting in order to estimate total numbers of oysters within each of the seven areas, and in total for the MCZ. This method was developed by Dr Lown during her PhD.

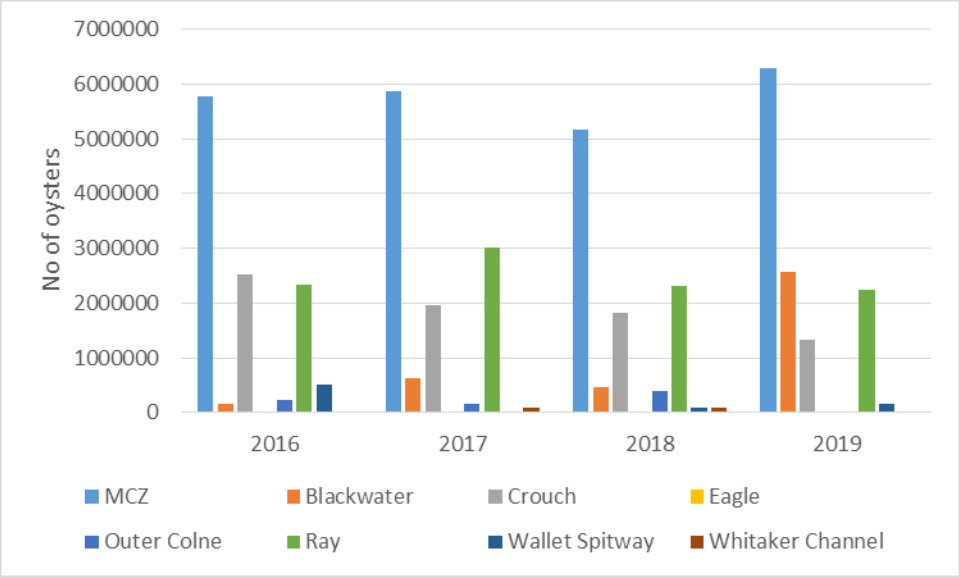


Figure 1: Numbers of oyster in BCRC MCZ, 2016-19

While overall stock numbers have not changed significantly since 2016, some areas have exhibited changes. Most markedly, numbers in the Blackwater have increased from 2018-19, driven by a significant number of smaller oysters found. In total, 593 native oysters were found during the 2019 survey. Size classes of oysters found in the MCZ show a lack of smaller individuals, with only 22 out of 593 oysters measuring below 39mm shell length. The size class distribution of the oysters found during the spring 2019 survey is shown in Figure 2 below.

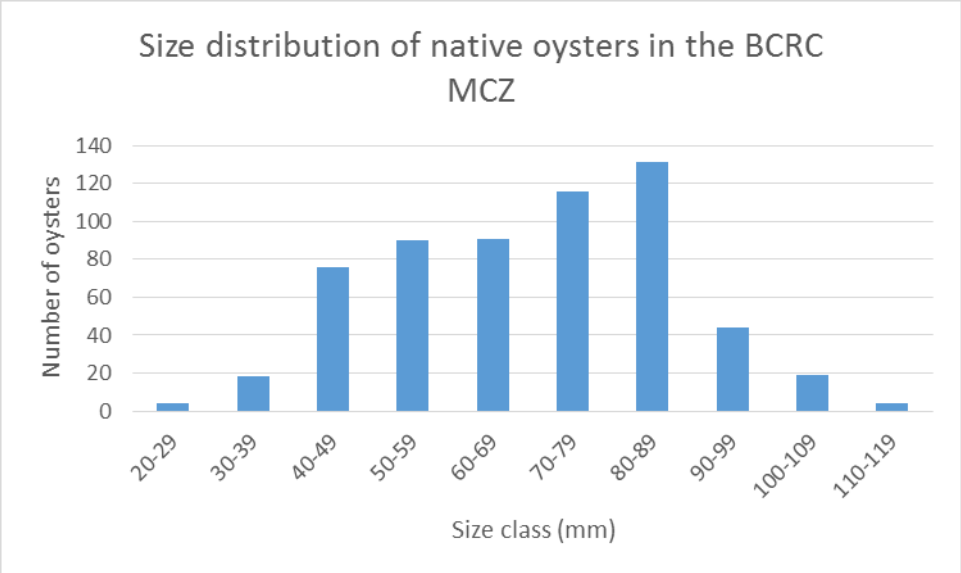


Figure 2: Size distribution of oyster in BCRC MCZ, 2019

2.2.3 Conclusion

Analysis of the survey data indicates that there is insufficient evidence of the recovery of native oyster stocks in the MCZ. As a result, there is little practical purpose of undertaking a Habitat Regulations Assessment and the MCZ equivalent needed to open the fishery and thus under byelaw it is determined that the fishery is to remain closed.

2.3 2019 Fishery Management Recommendations

(a) Taking into consideration the survey evidence in the KEIFCA 2019 Oyster Survey Report it is **RECOMMENDED** that the BCRC MCZ Native Oyster Fishery remain closed in 2019.

(b) Taking into account the requirement for sustained levels of recovery as per the management plan it is **RECOMMEDED** that the BCRC MCZ Native Oyster Fishery remain closed in 2020. However, it is **RECOMMEDED** that at the November 2020 KEIFCA meeting consideration is given as to the future management and opening of the native oyster fishery within the BCRC MCZ site.

3. Planned work for 2020

3.1 Stock Predictions

Following on from the stock model suggested by Dr Lown during her PhD work, Natural England and KEIFCA jointly funded a small project to validate the modelling work already undertaken. This work, rooted in the dredge surveys of the BCRC MCZ and the growth and survival experiments conducted by Dr Lown, allowed predictions to be made on future stock levels within the MCZ. The model, containing assumptions on a variety of parameters of spatfall, growth and survival of native oysters allows us to extrapolate oyster populations into the future. While this model can only be as good as the underlying data, Dr Lown is still working at the University of Essex to refine the model further. Some outputs from this model will be the subject of a presentation on 29 November.

3.2 Expanded Survey Area

In 2014, a full site survey of the MCZ was conducted to identify where native oysters were located. In subsequent years (2015-2019) only those sites that had been identified in 2014 as containing oysters were surveyed. Surveys were conducted in spring and autumn of 2016, 2017 and 2018 as part of the data collection for Dr Lown's PhD. In 2019, only a spring survey was conducted and it is the intention going forward that there will only be a spring survey each year to assess stock numbers (although this decision can be reviewed as the oyster stock approaches a level where it is considered to be recovered).

Following on from the native oyster workshop in July, it was decided that it would be appropriate to widen the survey area again, and resurvey on a wider scale in the same way as the 2014 survey. KEIFCA has initiated such a survey, and to date has identified five locations in the MCZ where native oysters can be found, where none were found in 2014. This survey has not yet been completed and, as such, results are not included in the annual oyster report being published this year. However, these extra sites where oysters have been identified will be added to the spring 2020 survey schedule.

There has been a request from the local oystermen that they would like to be more involved in the surveying procedure for native oysters within the MCZ. KEIFCA and the local industry will be working together and learning from each other on a project to identify further areas where native oysters may be found.

Through joint planning of potential sites, local oystermen in their own vessels will be tasked with surveying sites according to the KEIFCA survey protocol with the hope of identifying additional sites to add to the full KEIFCA spring survey.

3.3 Native Oyster Report

The format of the newly released Native Oyster Report was created as a result of discussions held at the workshop in July 2019. KEIFCA would welcome feedback from Authority members on this report which because of its length will be emailed to you separately. This report will be issued on an annual basis following the completion of the spring survey each year.

4. Recommendation:

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

(a) Taking into consideration the survey evidence in the KEIFCA 2019 Oyster Survey Report it is **RECOMMENDED** that the BCRC MCZ Native Oyster Fishery remain closed in 2019.

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