

What are the potential management measures for mixed fisheries?

Marine Theme Objective: Human impacts and pressures on the marine environment

What's the problem?

Most important fisheries in UK waters are managed by setting total allowable catches (TACs) to limit the quantity of fish removed each year. These help to limit fishing pressure if vessels stop fishing once they have taken their quota of fish of a particular species. In cases where different species of fish are caught together, in mixed-fisheries, TACs are less effective in managing fishing, as vessels will carry on fishing even though their quota for one species is exhausted. This means that they still catch that species, so it is still subject to fishing pressure even though it cannot be landed legally.

As TACs are less effective in managing mixed fisheries, other measures such as changes to the gear in use or closed areas can be used. To determine how effective these measures might be in a particular fishery is not straightforward, but one approach is to use information collected from that fishery by scientific observers.

What are the aims of the project?

The study will consider the mixed whitefish fisheries off of the English East coast. The aims of the study are to identify possible tools that could be used in the management of these fisheries which account for the problem of different species being caught at the same time. These might include, for example, closed areas or seasons.

Each of these tools will work most effectively under a different set of circumstances. For instance, a closed area might be most effective if areas can be identified that consistently hold concentrations of undersized fish. The study will identify the conditions required for each possible management measure to work effectively.

The next step will look at data on catches, and locations fished collected by scientific observers onboard vessels participating in the fishery. The data will be used to investigate whether the conditions required for each possible management measure to be effective actually happen in the fishery. From this it should be possible to identify how effective each management measure might be.



Figure 1: Vessel at sea. (Source: Crown Copyright Cefas)

Which policy areas will the research inform?

Defra's vision of fisheries in 2027 envisages that rights of access to fisheries will be coupled with clear responsibilities for the rights holders. This will require both the involvement of rights-holders in the decision-making process, and that those who access or manage fisheries quota have clear responsibilities and are held accountable for their actions.

The research will inform these developments by improving understanding of the effects of quota management at a local scale.

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What are the results from the project and how will they be used?

Current developments in both UK and European Union fisheries policy envisage a much greater role for stakeholders in the management of marine fisheries. This will require less emphasis on stock-based fisheries management and more recognition of the importance of local conditions and management measures. The results of this project will help inform this change of focus.

Traditional fisheries management is based on assessments of single stocks. Considerable effort and resources go in to collecting data to service these assessments, particularly for the complex, international multi-gear fisheries characteristic of European waters. At the same time, many of the problems in managing these fisheries arise from inconsistencies between stock-level management measures (i.e. TACs) and the local conditions encountered by fishing fleets.

This project will illustrate the advantages of changing the perspective, so that management is viewed from a fishery, rather than a stock, point of view. In particular, the project will consider the use of management measures which are fishery-based and/or fleet-based alongside the more traditional stock-based approaches.

While the project is not focusing on stock-based approaches to fisheries management, it will nonetheless use data collected for that purpose. Data collected by scientific observers on board fishing vessels are normally used to estimate total quantities of fish discarded. Here these data are used as a random sample of fishing activity within the study area, so can be used to give insight into the local conditions experienced by fishers in this area.

One advantage of using data collected from fishing vessels in this way is that they reflect the experience of fishers much more closely than biological data. This helps communication, and facilitates the involvement of fishers in discussions of management options.

The main result of the project will be an improved understanding of the tools available to manage fisheries at a local scale, and the circumstances under which they are most effective. Under current developments in fisheries policy, these tools are likely to be of increasing importance; hence the project should help contribute to the long-term sustainability of relevant fisheries.



Figure 2: Aboard a fishing vessel. (Source: Crown copyright Cefas).

Where can I find further information about this and related research?

For more information, please contact Stuart A. Reeves: at stuart.reeves@cefas.co.uk or see www.cefas.co.uk.

Please also see:

<http://www.ices.dk/reports/ACOM/2009/WKMIXFISH/WKMIXFISH%202009.pdf>

Alternatively, please contact Defra's Marine and Fisheries Science Unit: marinescience@defra.gsi.gov.uk

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