

Hythe Bay Permit Byelaw – Draft Management Plan

Introduction

Hythe Bay is a large, south-facing bay located on the South Kent Coast. It lies between Dungeness Point, a large shingle headland, to the South-West and a series of chalk cliffs Dover to the North-East. Hythe Bay was initially proposed as an MCZ by regional project Balanced Seas to be designated in the first tranche of MCZs. The decision was taken by Defra not to designate the site. This was to allow for further discussions between the local fishing community and conservation bodies to balance the conservation needs of the region with the social, economic and cultural importance of Hythe bay. It was proposed that a solution may be to develop a fisheries management area that could protect the important habitats that support a range of fish species while supporting local industry.

Aims of Management Plan

- i) Take steps to help support and enhance the importance of Hythe Bay and its associated habitats as a key area for young and juvenile fish.
- ii) Conserve the rare and important mud biotopes present in Hythe Bay, helping the bay to provide a robust, healthy ecosystem that supports a wide range of species.
- iii) Help maintain, facilitate and promote a viable, sustainable fishing industry in Hythe Bay.
- iv) Assess the impact of light towed fishing gear on the mud biotopes present in Hythe Bay.

Key principles of the plan

The plan will aim to use local knowledge and involve all parts of the community in developing a stakeholder led process that is as consensual as possible.

The plan will use the best available evidence and scientific knowledge to make informed management decisions to achieve the aims of the plan.

The plan will try to engage and promote best practice

Background to the site

Ecology:

The seabed of the large C-shaped bay at Hythe is home to subtidal mud that was deposited in the bay by the river Rother, which historically flowed into Hythe Bay. Glacial deposits after the last ice-age also contributed to the rich sediments within the bay.

This nutrient rich mud provides the ideal habitat to support rare species such as burrowing shrimps and worms. These communities are very rare in the UK especially in English waters and are not only important themselves but their burrows provide habitat for a wide range of other species, and they also act as a food source for fish and shellfish in the bay.

A range of prime fish species can be found in the bay. Sole, cod, bass, plaice and thornback ray are all present in the bay at varying times of year and it is important as both a nursery ground and a spawning area for these species.

During the summer months, the bay represents an important nursery ground for young plaice, as well as supporting high numbers of adult plaice. Plaice live on the seabed and favour sand and muddy substrate.

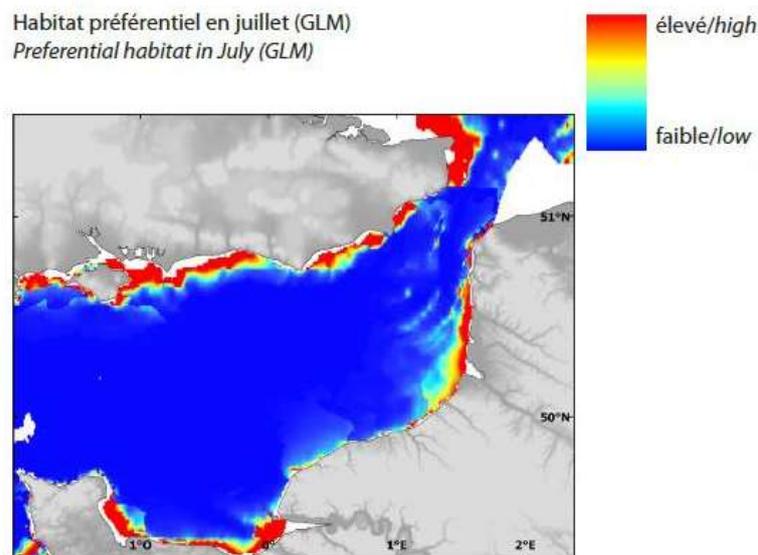


Figure 1: Chart showing most suitable habitats for Plaice younger than 1 year in English Channel

The habitat and species within Hythe Bay create an important and rare environmental network which supports a range of fish species. It is important that this site is preserved long term, to ensure that the wider ecosystem of the area is maintained. In recent years, surveys have shown a decline in numbers of burrowing animals living in the mud. The conservation aims of any management of activity in the site is to recover numbers of burrowing creatures to a level

which continues to benefit the ecosystem. The revised Common Fisheries Policy and Marine Strategy Framework Directive advocates the protection of nursery and spawning grounds for long term sustainability of fisheries management.

Fishing Fleet:

Hythe bay has been an important fishing ground for the local communities for many years and has provided key income for fishermen from Ramsgate, Dover, Folkestone, Hythe, Dungeness and Rye. Historically, the bay has been fished by smaller, inshore vessels although sporadically large, nomadic vessel have used it. The bay is traditionally a good mixed fisheries ground with boats targeting sole as well as other prime species like cod, bass, plaice and occasionally thornback rays. Other less valuable fish such as whiting and herring have also been targeted on the site. Some lobster and whelk potting is undertaken. Local vessels vary species targeted based on season, weather conditions, quota availability and a range of other factors.

Socio-economic background:

The number of vessels trawling in Hythe bay has fallen by approximately 50% in the last twenty years. One of the main reasons for this is the change in management over this time of boats under 10m in length. In the past, vessels under 10m did not adhere to the quota system while larger vessels that fished further offshore were heavily restricted. Many vessel owners changed their boats to under 10m boats to allow them more flexibility. Once quotas were introduced for smaller vessels, boats were restricted in what they could fish for and the amount of time they could spend at sea.

Over the last five years the number of trawlers using the site from the three closest ports have fluctuated from between four and seven vessels. In addition it is estimated that between five and six vessels from Rye, fish the MCZ site on a more adhoc basis as well as one to two vessels from outside the ports closest to the site (either vessels from Ramsgate or Whitstable or more nomadic vessels). In general the Hythe Bay site is seen as vitally important for the trawlers sailing from Folkestone as the site provides a generally reliable fishing ground that can be accessed easily (as it is only 2 nm away) and cheaply (have to spend very little in diesel sailing to the site). The site is also in the shelter of the land so it can be fished when weather conditions further out to sea would restrict a relatively small under 10m vessel. Throughout the whole MCZ process the Hythe Bay MCZ site has been flagged by local fishermen as an area of key commercial importance to the local fleet.

The cultural importance of the fishing fleets in areas such as Rye, Dungeness and Folkestone should not be underestimated. Local fishmongers, restaurants

and other businesses rely significantly on the unique attractions created by the historical fishing fleets' dependant on the bay.

How are we going to achieve it?

Hythe bay was originally put forward from the Balanced Seas regional project as a proposed MCZ site. Following from extensive stakeholder discussions regarding the site, Defra decided not to designate the MCZ in the tranche 1 process to allow for further research to be undertaken on features present in the bay. Defra also suggested the establishment of a fisheries management scheme in conjunction with stakeholders might be beneficial to the management of the site as an ecosystem, while allowing research to be undertaken into the impacts of bottom towed gear on subtidal mud habitats.

In July 2014, Kent and Essex IFCA established a working group to address the development of management for Marine Protected Areas in the district. The working group proposed the establishment of a management scheme as a priority while also progressing management measures at Folkestone Pomerania MCZ, a site adjacent to Hythe Bay.

KEIFCA propose to undertake management through a three step process.

- Develop a byelaw in conjunction with stakeholders to manage effort in Hythe bay.
- Design a research plan with a scientific advisory group to assess the impacts of fishing gear on subtidal features
- Create a review process to adjust management based on impacts.

Local fishing industry strongly supported the option of legislative management for the bay and in autumn 2014, KEIFCA officers worked closely with representatives of the local fishing industry to develop a series of management measures that fishermen considered suitable for reducing the impacts of fishing on the ecosystem of the bay.

Develop a byelaw in conjunction with stakeholders to manage effort in Hythe bay

As a designated MCZ, Folkestone Pomerania requires management measures in order to achieve the conservation objective of recover for designated features. A byelaw has been developed to remove the use of bottom towed gear within the site.

In conjunction with fishermen, a byelaw has been developed for the management of a permitted area within Hythe Bay. The byelaw applies to an area stretching from Dungeness Point to Folkestone where vessels would require a permit to trawl.

The key components of the byelaw include:

- **Vessels will be limited to: 12.5 metres in overall length.** *Limiting the overall length of vessel prevents larger vessels capable of towing heavy gear from fishing within the bay*
- **In order to apply for a permit, vessels will be limited to using otter trawl(s) only.** *This potential permit condition prevents any other towed gear from being used within the bay reducing potential impacts on the feature.*
- **In order to apply for a permit, vessels will require equipment to broadcast IVMS.** *This technology will enable vessel tracking to assist the enforcement of closed areas. IVMS likely to become available in spring 2015*

The following conditions would be flexible permit conditions and could be adapted based on scientific evidence into the impacts of gear on the ecological features of the site:

Under the permit, fishing gear will be limited by the following technical requirements:

- **Ground rope maximum aggregate length of 48m (26 fathom).** *Limiting the ground rope length prevents vessels towing large heavy nets through the area. Having an aggregate length is necessary as many vessels working in the district can tow more than one net at a time. This is known as twin or triple rigged.*
- **Ground ropes must be enclosed by rubber discs. Maximum rubber disc diameter 10 cm.** *Vessels will be required to enclose the entire ground rope in rubber discs. Without the discs exposed chain or cable has the ability to impact the sea floor. Restricting the size of disc limits the overall dimensions of the gear used and limits heavy rock hopper gear from being towed through the site.*
- **Maximum chain link thickness throughout gear 10mm.** *Limiting the thickness of chain links would reduce the weight of the gear. This, in combination with the 48m ground rope limit makes it possible to restrict overall size of gear that can be used.*
- **No tickler chains. No attachments ahead of the ground rope. All ground rope attachments including weights must not exceed a diameter of 10cm.** *These restrictions help to reduce the interaction between the trawls and the sea bed.*
- **Specified areas within Hythe Bay (Areas 1, 2 and 3) would be closed to bottom towed gear.** *These closed areas allow for the development of research into the impacts of bottom towed fishing gear on the habitats in the bay.*

Design a research plan with a scientific advisory group to assess the impacts of fishing gear on subtidal features

Aim of research: To assess the impact of light towed fishing gear on the mud mega faunal rich communities present in Hythe Bay.

A range of studies over three years could be undertaken, working with local fishermen, the Kent Wildlife Trust, the Environment Agency, Natural England, CEFAS, DEFRA and KEIFCA. After three years depending on the outcome of the initial research a smaller ongoing monitoring programme focusing on the key research could be continued.

The resource for these proposed projects has not been identified, although indications of willing have been made by key partners, with the minister indicating his prioritisation and commitment to this research in his 7 April 2014 press statement.

The potential research projects outlined form a wish list of the kinds of projects that could be undertaken in Hythe Bay resources will ultimately dictate the projects that will be commissioned.

Long term study comparing the mud biotopes inside and outside the no-trawl area.

Outline of research: Grab samples stations would be agreed inside and outside the no-trawl area. Effort would be made to develop a good baseline before the trial starts. The species from the grabs would be recoded allowing the areas to be compared and the value of a closed area to be assessed. The survey would be repeated a regular intervals over the three years.

What will this tell us? A well planned detailed survey over three years would help indicate whether trawling has an impact on the mud biotope or not. If there was an impact the survey might help inform future management.

Key variables to take account of in the design of the project:

- Frequency/ time of year/ location of grab samples in and out of the site
- The biological tools/ the resolution of the tools that would be used to assess and quantify any change.

Resource requirements: HIGH

The need to get a scientifically robust experimental design

Significant sea time and grab sample analysis.

Using underwater videoing techniques to count the number/and size of burrows. Comparing trawled with non-trawled areas

Outline of research Spoonworms are difficult to sample as they have deep burrows. Using underwater video cameras to record the number and size of burrows would help more accurately quantify the number of key burrowing species. Identifying video transect areas inside and outside of the non-trawled area would help assess any impact of trawling.

What will this tell us? A well planned detailed survey over three years would help indicate whether trawling has an impact on the mud mega fauna or not. If there was an impact the survey might help inform future management.

Key variables to take account of in the design of the project:

- Frequency/ time of year/ location of video transect in and out of the site

Resource requirements: The wildlife trust have undertaken previous surveys in the past.

The need to get a scientifically robust experimental design and be clear as to what the outputs might show.

Analysis of IVMS data/ catch returns

Outline of research: The byelaw will require vessels to fit IVMS, this will give a very high resolution data for the location, number and intensity of trawling geographically in the bay. The byelaw could also require/ voluntary scheme to record the exact type of gear used.

What will this tell us? This would allow very detailed analysis of exactly how big an area is interacting with the trawl and the frequency of interaction. Depending on the type of system trackers can be set up on specific trawls to give a finer resolution. This information can be overlaid on to the biological sampling information to give an idea of the course impact of different fishing intensities.

Key variables to take account of in the design of the project

- The IVMS system would run continuously for the period of the byelaw.
- Would need to discuss with industry how data would be used (resolution of data).

Resource requirements: Initial high capital costs. Smaller on running costs.

The cost of setting up the system (capital and officer hours) and recording the results.

Trawl by-catch survey

Outline of research: A qualified individual will accompany fishermen when trawling in Hythe Bay and record everything that is caught in the trawl including all the species and sizes of fish as well as any other species caught.

What will this tell us? Analysis of the fish sizes will tell us detailed information that could be used to develop catch per unit effort fisheries information for the Bay. Detailed recording of any other species caught will help record if species like spoonworms are caught in trawls.

Key variables to take account of in the design of the project.

- Different fishing gear set ups (Single/ double/ triple rigging)
- Day /night
- Different times of year (per season?)
- Different years
- Different habitats trawled in the bay - Sand /mud

Resource requirements: Low cost – 10 officer days per year (30 days total)

Individual to assess by- catch (one individual per trip/ an officer per trip).

Basic recording equipment/ camera

Accurately measuring the height of the seabed

Outline of research A clear issue expressed from the local fishermen is that the bay is a very dynamic and that the natural sediment movements in the bay has a far greater impact than their gear. Using accurate benthic sonar equipment in conjunction with fishermen's knowledge could help measure change on the seabed.

What will this tell us? Having a clear picture of how dynamic the bay is naturally will help give a background to understanding how adaptive/ vulnerable the biotopes are to change. Addressing this key concern of the fishermen would help address and possibly mitigate this issue.

Key variables to take account of in the design of the project:

- Resolution of equipment
- Frequency of surveys.

Resource requirements: HIGH (depends on getting and being able to used equipment)

Boat time and equipment. Ability to statistically compare the results.

Possibility of using fishermen's olex equipment and/or fishing boats

Using survey equipment to assess if trawl marks are left after trawling

Outline of research: Working in cooperation with fishermen a fishing boat could trawl along a predetermined route that was surveyed using high resolution multi-beam before the trawl and then surveyed afterwards and at a later date.

What will this tell us? Comparison of the two surveys could then help to indicate if the trawl impacts the sea bed. A further follow up survey could then help indicate if there might be any longer term effects.

Key variables to take account of in the design of the project:

- Different fishing gear
- Different habitats
- Resolution of survey equipment
- Accuracy of location recording systems.

Resource requirements: Depends on cost of survey equipment. If can be effectively deployed from KEIFCA vessel or other fishing boat then costs could be kept low.

Cooperation from the fishermen. Use and then subsequent analysis of multi-beam sonar equipment.

Small fish survey

Outline of research: Undertake a standard CEFAS/EA small fish survey.

What will this tell us? To build up our knowledge of the bay as an important nursery/ juvenile fisheries area and to try and develop an idea of the wider functions the key habitats in the bay a small fish survey would help develop key evidence.

Key variables to take account of in the design of the project:

- Frequency/ time of year/ location of the small fish samples
- How the data will be used to inform management

Resource requirements: HIGH

The need to get a scientifically robust experimental design

Significant sea time and sample analysis.

Create a review process to adjust management based on impacts.

As the evidence from the different research streams starts being produced meetings of the different stakeholders could be held to discuss the results and review the appropriateness of the byelaw. The recommendations from such meetings would then be presented to the Authority to discuss and review.

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