

Success Criteria: 4, 5 and 6

By: Chief IFC Officer

To: Kent and Essex Inshore Fisheries and Conservation
Authority – 21 November 2014

Subject: **SEA BASS MANAGEMENT**

Classification: Unrestricted

Summary: to update Members on the progress made on the management of
bass stock

Since the last Quarterly meeting

In mid-December the Fisheries Minister George Eustice represented the UK in Brussels at the annual EU Fisheries and Agriculture Council. In a press statement from the meeting the minister stated

"Despite pressing hard for measures to address declining sea bass levels we were disappointed not to leave negotiations with an agreement on specific measures to tackle this issue. The UK government has led on action to improve these stocks and has now secured a commitment from the Commission to work with Member States to reduce fishing pressure at the start of the season in 2015."

Commenting from Brussels UK Fisheries Minister George Eustice said:

"I was disappointed no decision was reached this year to improve bass stocks but will be following up on the Commission's commitment to work with Member States in the New Year. The UK has been a lone voice on this issue and it is essential we achieve a balanced approach which reflects the contribution of both commercial fisheries as well as recreational anglers on declining bass numbers."

Since this meeting, a further extraordinary EU meeting is going to be held to discuss emergency bass measures on 14th January. This will be after the quarterly Authority papers go to press so efforts will be made to try and

communicate any decision to Authority members before the meeting and an oral report will be given. Without knowing the extent of any EU management measures it makes it considerably harder to plan detailed KEIFCA management measures. In an effort to best coordinate this approach DEFRA was contacted and invited to attend the KEIFCA Authority meeting in January as well as the lead representative from CEFAS (Appendix 1).

Bass landings and fishing activity

ICES advice

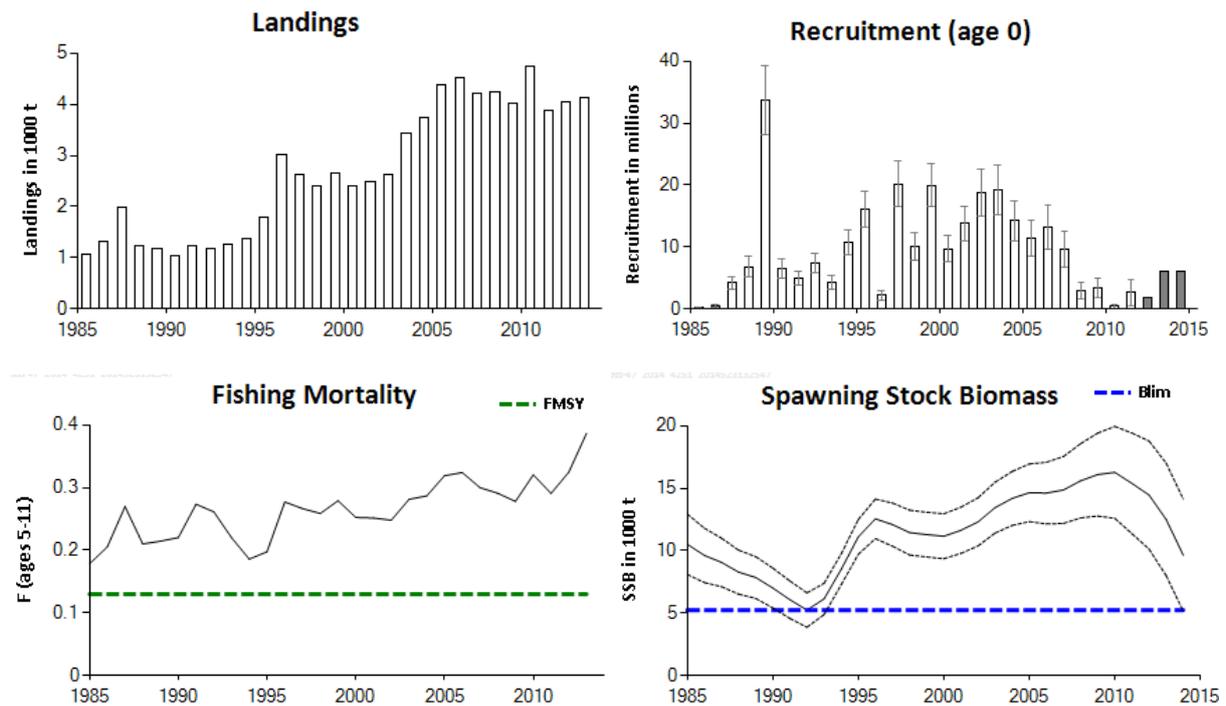


Fig. 1. European sea bass in Divisions IVbc, VIIa, and VIId–h. Summary of stock assessment (weights in thousand tonnes). Fishing mortality for combined commercial and recreational fisheries. Predicted values are shaded. Top right: SSB and F over the time-series used in the assessment.

Current advice from ICES is that the level of fishing mortality for bass is above target and that as a result “ICES advises that a management plan is urgently needed to develop and implement measures to substantially reduce fishing mortality throughout the range of the stock”. ICES advice is that discarding is an issue, especially with otter trawlers using 80-90mm mesh in areas of greater juvenile bass abundance and also that improvements to selectivity are needed to allow fish to spawn at least once before capture which could include gear design changes and spatial management approaches (Fig.1).

ICES has the following data requirements:

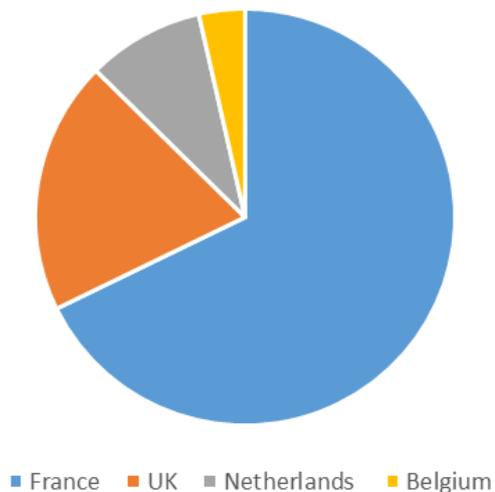
- Temporal data on abundance throughout the range of the stock
- Adequate and representative sampling of fleets including recreational fishery catch, effort and catch composition.
- Tagging, genetics and stock marker studies to define stock boundaries

- Survival studies to estimate survival of recreationally catch and release bass

EU landings and data

Landings of bass have increased across Europe since the late 1980s as shown in Fig. 1, however the total catch (not landings) of bass and level of discards is poorly understood by ICES at present. In the UK and France, 58% of all commercial landings are by mobile gear vessels such as trawlers and 13% of landings are from static gear vessels operating fixed and drift nets.

EU landings for 2013 by country



As can be seen by Fig.2, almost 70% of the bass landed in 2013 was by France and around 20% was by the UK. This situation would support EU level management measures to manage bass stocks at a scale appropriate to their geography and range.

In 2013, 4132 tonnes of bass were landed across the EU by commercial vessels and it is estimated that approximately 1500 tonnes of bass are removed annually by recreational fishermen from

France, UK, Netherlands and Belgium.

Fig. 2. Pie chart showing landings of bass by EU country for 2013

KEIFCA District landings and data

As bass has increased its presence in the KEIFCA district, it has become a regularly targeted species by both commercial and recreational fishermen. Landings into KEIFCA district ports have increased in recent years as indicated by Fig.3 below. There was an initial rise from the early to mid 2000s peaking at 130 tonnes in 2010. For the following three years landings dropped slightly but were stable at around 100 tonnes. In 2014, the estimated landings (as the final figures are not yet available) is around 133 tonnes (similar to 2010).

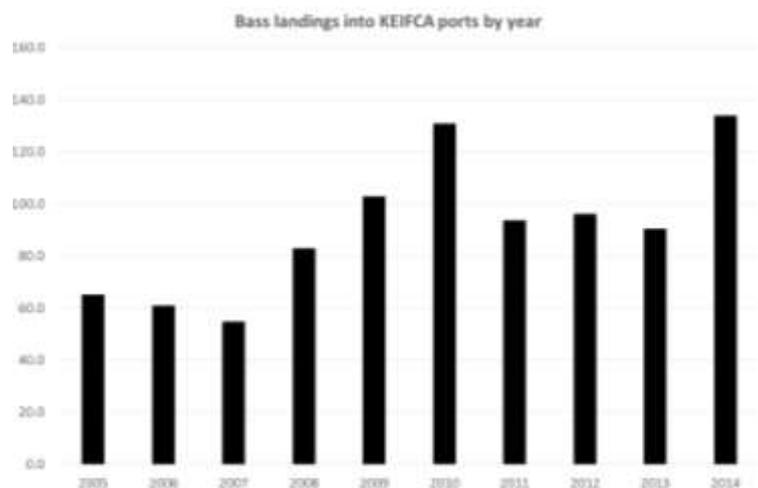


Fig. 3. Histogram showing commercial bass landings (in tonnes) into KEIFCA district ports from 2005-2014 (MMO landings data).

As shown in Fig. 4, although in recent years landings within the KEIFCA district have increased, the amount which these landings contribute to the total stock is very small. In 2013, fish landed into ports within the KEIFCA district was 15% of the total landed in the UK and only 3% of the total EU landings. This would suggest that introducing management measures solely within the KEIFCA district would have a limited benefit to the overall stock.

Commercial Bass Landings - 2013

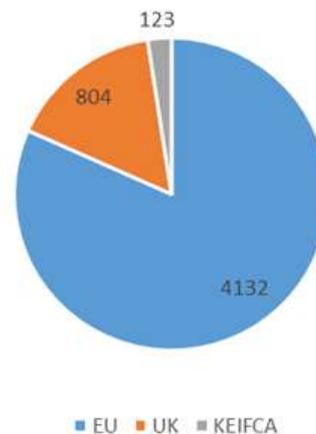


Fig. 4. Pie chart showing the percentage contribution of landings in KEIFCA district to EU landings (2.9%).

Following an international management plan and working with others in a coordinated way and would best focus resource. Without such a plan at present there are a number of options available to KEIFCA to help manage bass stocks.

1) Nursery areas

Background

A nursery area is defined as a habitat that supports a greater than average number of individuals to the adult population on a per-unit-area basis than other habitats used by juvenile fish (Beck et al., 2001). Methods for surveying nursery areas include beam trawls which catch fish typically age two and above or small fish surveys using nets deployed from shore or boats to target younger fish.

Current Bass Nursery Area provision in the KEIFCA district

All of the four bass nursery areas in our district designated under The Bass (Specified Areas) (Prohibition of Fishing) (Variation) Order 1999 were located next to power station hot water outfalls (as the bass were attracted by the raised water temperature). At present only one power station is still operational and thus generating hot water, the rest have been decommissioned (Fig. 5). In the light of these changes the current legislation seems to be in dire need of reviewing and updating to sufficiently protect bass stocks. An immediate step which is being widely suggested by IFCA's with Bass Nursery Areas in their district is to improve the protection of these sites by requesting to Defra that a deeming clause could be added to the current Order. Introducing a deeming clause would mean that anyone with found with a bass in the Nursery Area would be deemed to have caught it there. This dramatically reduces the burden on the Authority to prove that the fish was caught in the area, leading to far more effective enforcement of the legislation. The effect of this would be significant, especially as it would be for all sites and it could be achieved

relatively quickly by Defra as it is effectively addressing a potential loophole rather than developing a new piece of legislation.

The need for a systematic district wide review of Bass Nursery Areas in the KEIFCA district

As sea water temperatures have gradually increased over the last few decades the distribution of bass has spread ever further northwards up the eastern coast of England and bass stocks in the KEIFCA district have become more established. This gradual movement north combined with better scientific data, especially for small fish, starts to provide a clear picture of how sea bass use the estuaries and the shallower waters of our district. As the current management measures need to be radically improved and updated it is proposed that KEIFCA undertake a district wide review of the nursery area provision in our district.

It is suggested that the review would take place in two sections; the first would be the development of an evidence base and a dialog with the local communities for the estuarine and bay waterbodies identified below in Fig. 5 (create a longlist). It is suggested that the IFCA would run a consultation with the local communities over a number of months and ask for comment and feedback on the possible management options suggested. At the end of this period a technical panel would be held that would review the evidence gathered for each site and would prioritise an initial list of sites (two to three) to go forward for more detailed development of management and legislation (create a short list). It is suggested the technical panel would review the evidence for each site and to make recommendations for the Authority meeting. Members of the public would be encouraged to attend the meeting and to provide evidence to the technical panel. The shortlisted recommendations would then be discussed by the Authority a quarterly meeting, hopefully with the instruction to draft specific wording for a byelaw and associated impact assessment. Following this the statutory byelaw process would be followed.

In suggesting that significant time and resource should be allocated to the development of the evidence pack for each site and the associated consultation documents with potential management options, although the Authority has made it clear that management measures for bass need to be developed quickly, it is vital that we try and get as many people as possible on-board with this process and the reasons why the Authority are taking this action. Without spending time developing such agreement, enforcement of any proposed management measures will always become more challenging.

Experience from the MCZ process shows that having a clear, concise, well thought out consultation with potential management measures that people can understand and comment on is critical to success. Spending time developing and agreeing this process, the tone and structure of the documents as well as the methods of engaging with people is key to the success of this project. The advantage however is that once undertaken, it allows us to move quickly with

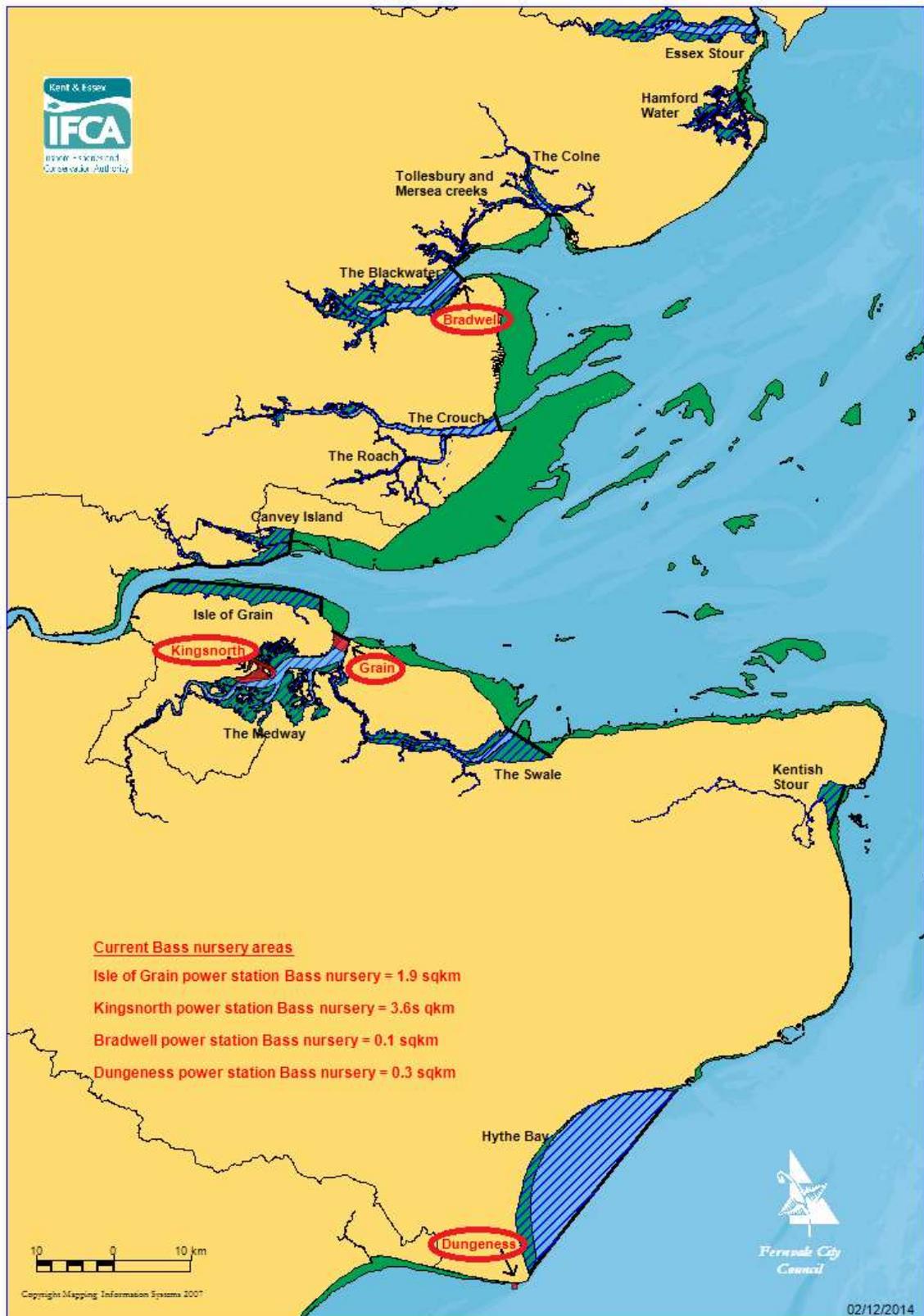


Fig. 5 Chart showing the current bass nursery areas in the KEIFCA district and the long list of possible sites to start discussions with local communities.

any resulting legislation as we would have already gathered the scientific data and socio-economic evidence needed by the Authority to make an informed decision. Undertaking this process is very resource intensive and will utilise the same people in the organisation as undertaking the European Marine Sites review. Committing both work streams will inevitably impact on the speed of delivery of the other and this would need to be clearly articulated to Defra and the Minister.

Working with partners to help gather more information

At present the Environment Agency carries out sampling of small fish in some of our key estuaries in our district as part of the Freshwater Framework Directive. In the past KEIFCA officers have offered adhoc support for these samples especially in areas like the Kentish Stour. Funding for some of these surveys has come under increasing strain as funding cuts have taken hold. Working with the Environment agency, who have expertise in small fish surveys, KEIFCA could survey potential fish nursery areas in the estuaries in order to determine the abundance and age structure of young fish populations. This survey would need to be carried out over a number of years in order for useful data regarding the populations to be obtained. At present the survey for the Medway is under specific threat and KEIFCA officers could help provide officers (10 officer days a year) to help resource this survey.

2) Bass Spawning Areas

Review of bass spawning

European sea bass (*Dicentrarchus labrax*) are batch spawners, with adults migrating south and west in autumn aggregating in spawning grounds before returning to discrete feeding grounds in the eastern channel and southern North Sea in spring and summer (Pawson et al., 1987, 2007). Sea bass feed nocturnally in winter during the spawning season whereas this pattern is reversed during spring and summer where they feed during the day (Villamizar et al., 2012).

Mature females produce 0.25 to 1.0 million eggs per kg of body weight which are fertilised in the water and eggs hatch 4-9 days after fertilisation. Larval stages last 2-3 months during which time larvae drift from the offshore spawning areas into inshore and estuarine nursery areas where juvenile fish remain for 4-5 years (Pickett and Pawson, 1994).

Water temperature is the main control over the timing of spawning with day length also being important. Warmer temperatures in the last few years have enabled bass to travel further up the North Sea, although this is the most northerly range for this species. Spawning occurs at night in cultivated stocks (Villamizar et al., 2012) and is likely to be the same in wild populations.

Cefas conduct egg and larvae studies for several commercially important EU quota species, however sea bass eggs are not currently monitored at the national or European level.

Spawning area survey methods

The total number of eggs released is proportional to the spawning stock biomass. In order to identify spawning areas and quantify the spawning stock biomass, surveys must find eggs and larvae and these can be caught using



Fig.6 towed plankton recorder used by Cefas for fish egg surveys.

plankton nets or a towed plankton sampler as shown in Fig. 6.

Eggs collected must then be identified to see how many, if any, are sea bass eggs. This will require microscopic analysis which is time consuming, or a genetic or biochemical assay which requires laboratory equipment and incurs greater financial costs. Larvae can also be aged and counted to give an idea of time since hatching.

due to wind, currents and tides. Typically fish egg surveys are conducted at several points over a large area due to the very patchy distribution caused by planktonic drift.

Sea bass eggs are less than 1.4 mm in diameter (Devauchelle and Coves, 1988) and can move large distances

The sexual condition of mature adult fish can also be assessed although there is a lack of previous research linking sexual condition to spawning areas or spawning rates.

Future research

Given the large geographical scale of an effective spawning area, eggs and larvae study, it is proposed that we work along with other national and international agencies such as Cefas, Defra, other IFCAs and the French and Dutch governments and research centres to establish an effective survey programme. Specific funding opportunities are available for international projects, e.g. Interreg EU funding which we may be able to use for a project of this scale. By collaborating with national and international agencies, a much larger area could be studied and the results would be more scientifically robust. Undertaking this work in this way would help provide key evidence if the pair trawling fleet moves further up the channel after possible EU measures ban them from the Western Approaches.

3) Increasing the minimum landing size for bass

The debate on increasing the minimum landing size for bass was reflected on greatly at the Parliamentary Bass Stock Management debate held on 3rd December 2014. With a number of ex-fishery Ministers reflecting on the potential opportunity to nationally increase the minimum size. The reply from the current minister was:

"On minimum landing size, once we have seen the shape of any deal that comes out of the December Council, I will consider what supplementary measures we could introduce nationally. I understand the frustration of Mr Bradshaw, whose successor not only did not bother seeing his proposal through, but actually got the knife out and cut it. Revoking an order that has already been signed is quite a big step. Listening to him and others, I was reminded of the episode of "Yes Minister" in which Jim Hacker goes to talk to his previous opposite number to try to get the lowdown on an issue.

There could be a role for minimum landing size. In the first instance, I want the negotiating team to focus on getting the deal right at European level. We should also recognise that just increasing the minimum landing size without changing net gears, for instance, might be counter-productive, and we could end up with more discards, which is something we want to avoid. Finally, a minimum landing size does not deal with the problem of mortality caused by pair trawling taking place in spawning areas. That typically affects larger fish, but it can be particularly damaging." George Eustice (The Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs; Camborne and Redruth, Conservative)

The full transcript can be viewed at

<http://www.theyworkforyou.com/whall/?id=2014-12-03a.115.0&s=speaker%3A24933#g136.0>

The debate concerning increasing a minimum size for bass and IFCA's role in taking forward this specific management measure is being held around the coast at IFCA Authority meetings. Several IFCA's are currently reviewing this management measure, however all parties recognise that such a measure works best on as large a scale as possible. Without a broad scale approach (international, national or regional (several IFCA districts)) the burden of the management measure falls disproportionately on a specific local fishermen. All these factors are weighed against the facts that the science behind increasing the minimum size for bass is well understood and that increasing the minimum size would apply to all sectors fishing for bass. Writing to the Minister on this issue might help focus efforts.

4) Small Mesh Fisheries – KEIFCA District

Background

The district is an important spawning and nursery area which contributes to the abundance of important species, including bass, within an area extending beyond the district.

There are a number of small mesh fisheries taking place within the district. The extent and level of fishing effort directed at these small mesh fisheries has without exception, declined over recent decades.

It is suggested that the likely impact of these small mesh fisheries, on juvenile bass and other species, is reviewed and that consideration is given to the benefits and losses of restricting some of these fisheries.

Shrimp Trawling - Mesh size 16mm – Beam Trawl and Otter Trawl: This fishery can take place in any part of the district, but mainly inshore, and any time of the year. Trawling for brown (*Crangon spp*) and pink shrimps (*Pandalas montagui*) was undertaken on a large scale until the 1960's. Since that time there have been occasions when a hand full of boats have produced moderate catches but generally speaking the fishery has remained at a low level. A large fishery for shrimps has continued in the Wash and some local vessels move north to take part in the fishery.

Sprats - Mesh Size 16mm – Pair Trawl and some Otter Trawl: This fishery has taken place mainly in coastal parts of the district during December – March. In the 1980s and 1990s large catches were made in some years, being sold mainly for fishmeal. Until 2006 catches continued at a lower level and were sold for canning. The fish caught were part of large shoals that moved around the North Sea, in some years these moved into the Thames estuary seemingly influenced by weather conditions. Sprats have not been reported in such large quantities since the 1990s. A further factor is that there are now very few larger trawlers that have the capacity to be able to fish for sprats. A couple of pairs of vessels continue to land commercial quantities.

Whitebait (juvenile sprats) – Mesh size 16mm – Pair Trawl: This fishery takes place in the inner Thames estuary. The number of vessels engaging in the fishery has declined in recent decades. There are now only one or two pairs of vessels engaging in the fishery and quantities taken are now much lower than in the past.

Herring – mesh size 50 -55mm – Pair Trawl and some Otter Trawl: This fishery uses a larger mesh size than the other 'small mesh fisheries' taking place in the district. The fishery takes place from October – March which is governed by MMO licencing and KEIFCA byelaw closure which are subject to TAC uptake. Trawling for herring is prohibited in the northern part of the district by MMO licence conditions. Trawling for herring is now undertaken by a handful of boats, two of which are particularly dependent upon the fishery.

Eels – 16mm – Pair Trawl and some otter Trawl: This was once a large and profitable fishery within the district. In early 1990s the previous SFC considered concerns that large quantities of juvenile cod were being taken at certain times of the year and this resulted in the current 'Small Mesh Trawl Nets Byelaw' being made to enable the Committee to prohibit the use of pair-trawls with a mesh below 75mm. Since the making of the byelaw the eel fishery declined and reportings of catches of juvenile cod were not on the scale previously observed. Current legislation (MaCAA) more clearly defines the Environment Agency's responsibility for managing the eel fishery. European eel are now recognised as a species in serious decline. No eel trawl licences are now granted by the EA and the fishery has now ceased.

Smelt -16mm – Pair Trawl: This fishery takes place in the inner Thames estuary during summer. Pair Trawling for smelt has been at a low level and has now declined as a result of reduced catches. This species is now the responsibility of the EA from whom authorisation is required. The fishery continues at a low level with mostly no more than a couple of vessels taking part.

Summary

The Thames and the estuaries on the Kent and Essex coast feeding into the greater Thames are now widely regarded as a key nursery area for bass but also for a wide range of commercial fin fish species. Reviewing the management of small meshed gear in the district and developing subsequent management options could help provide additional protection across our district for small and juvenile fish, thus helping make our whole district into a nursery area. If the Authority are minded to take forward this proposal more detailed information regarding numbers of vessels, times of use and specific management options would need to be developed.

Letters from stakeholders

Bass is a notably cross-industry species, having equal importance to both the commercial and recreational sectors, the former due to its non-quota status which means that when the quota of other species has been used up they can still fish for a relatively valuable species, the latter because of the fight and sport attached to this fish. Attached are two letters as Appendix 2, one from Mr Michael Sharp, an angler who is an Authority member and one from Mr Johnny and Andrew French who are commercial netters from West Mersea, both of these outline their respective views and where they feel progress could be made regarding bass management.

Recommendation

It is recommended that the Authority **discuss** the possible bass management options laid out in this paper and make **recommendations** as to which measures should go forward and be discussed in more detail at the proposed technical panel meeting due to be held in late February/ Early March. It is proposed that the technical panel would make more recommendations concerning the implementation and time line for delivery of these options for the May Authority meeting to discuss and if minded approve.

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