

Vision

The Eastern Inshore Fisheries and Conservation Authority will lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry



29 March 2017

Emergency Bass Byelaw - Impact Assessment and Recommendation

Executive Summary

Bass stocks are in a poor state and European Regulations have been implemented which aim to reduce bass fishing mortality. A stated aim of the European measures is to provide protection to spawning aggregations which is reflected in a prohibition of hook and line fishing activity (the only means by which bass can be targeted in 2017) during the 'typical' spawning period, February and March.

Bass have been found in spawning condition within Eastern IFCA's district during May and evidence indicates that bass spawning aggregations occur between March and June in the Southern North Sea. As such, an Emergency byelaw is being considered which would prohibit hook and line fishing during this period for the protection of these spawning aggregations.

Legal advice has indicated that it would be lawful to introduce such a byelaw using the emergency byelaw procedure but that the introduction of further restrictions using this process would be 'amenable to challenge.'

Consultation has been undertaken to determine the potential for impacts on the industry and to determine whether the proposed byelaw would be proportionate. In addition, further information has been sought from Cefas and the MMO to help inform the final decision.

The impact assessment has indicated that the impacts (costs) on the fishers would be disproportionate and would outweigh the beneficial effects of the byelaw. This is primarily a reflection of following:

- The low levels of bass fishing mortality contrasted by the high economic importance of bass landings to fishers (particularly smaller scale fishers) which contributes a significant proportion of annual income;
- Hook and line fishing is unlikely to have a significant impact on the bass stocks resultant of relatively low fishing mortality which is evidenced by historical landings data. This reflects the inefficiency of the gears used (demersal long-lines);
- New advice has indicated that bass will enter the district primarily to feed but leave to spawn. As such any benefits of the byelaw would be degraded given that most fishers have indicated that they would fish outside of the six-nautical-mile boundary or in neighbouring IFCA districts (which limit the overall reduction in fishing mortality);

- New advice has indicated that the ‘later’ spawning period is not unique to the EIFCA district, which undermines the rationale that there is a distinct driver which applies within the district to justify additional burdens on fishers within the district.

Therefore, this report concludes that the Emergency Bass Byelaw should not be implemented.

Introduction

Bass (*Dicentrarchus labrax*) are thought to be particularly vulnerable to over-fishing and recent assessments of bass stocks show that stocks have continued to decline year-on-year. Advice published by the International Council for the Exploration of the Sea (ICES) has, since 2013, recommended reductions in commercial landings. Prior to this, in 2012, it was recommended that there should be no increase in commercial landings. The ICES advice for 2017 indicates that Spawning-stock biomass is now below B_{lim} (limit reference point for spawning stock biomass i.e. the lowest level) and that when a precautionary approach is applied there should be a zero catch (commercial and recreational) in 2017.

European measures for fishing opportunities in 2017 further restricted fishing opportunities with regards to bass¹ but fell short of the ‘total closure’ recommended by ICES advice. The measures allow targeting of bass only by hook and line, with a prohibition on that method during February and March, with a stated aim to protect spawning aggregations during this period.

Driver for Eastern IFCA intervention

Evidence indicates that bass spawn until the end of June in the southern North Sea and as such, the European Regulations will not prevent fishing mortality of bass in spawning condition. The Authority agreed in principle to implement an Emergency Byelaw at the 27th Eastern IFCA Meeting (15th February 2017) the intended effects of which is to prevent targeted fishing mortality on bass whilst they are forming spawning aggregations, essentially extending the European prohibition as per the stated aim of the European proposal.

Members also agreed to delegate the final decision with regards an emergency byelaw to the Chair, Vice-Chair and CEO and that such will be informed by an associated impact assessment and consultation with the fishers likely to be effected by a byelaw.

Consultation with potentially impacted stakeholders

Officers contacted all fishers for whom contact details were available by post or email, informing them of the consultation and providing a questionnaire. The questionnaire was designed to provide information to assist in the production of the impact assessment.

In addition, the questionnaire was published on the Eastern IFCA website (<http://www.eastern-ifca.gov.uk/bass-emergency-byelaw-consultation/>) and officers

¹ Council Regulation (EU) 2017/127

attended meetings where the matter was discussed (including one meeting arranged specifically to discuss the measures).

The outputs of the consultation include a combination of responses by way of completed questionnaires, letters, meeting summaries and telephone conversations.

Outputs of the consultation

The consultation included acquisition of quantitative and qualitative information. Fishers were asked to provide 'sensitive' economic information which was, for the most part, not provided. However, almost all responses included comments / narrative regarding the potential impacts (including at meetings and during other dialogue).

The outputs of the consultation are considered in two parts; concerns raised by fishers and an assessment of potential costs derived from data provided by fishers and in the context of other available evidence.

Key concerns

The key concerns raised by fishers are summarised below:

- *There are limited 'other' fishing opportunities for the majority of fishers*

Four main species make up the majority of catch for fishers who also take bass; cod, skate, sole and dogfish. Cod have not migrated into inshore waters this year and the 'typical' peak in catch during the winter months was entirely missed. Skate quotas are very low for under 10m and non-sectors (currently 200kg per month). Furthermore, dogfish are of low economic value and the most abundant species (spurdog) is a 'no-take' species at present (EU Regulations).

- *Fishers typically take relatively small amounts of bass but this has a disproportionately large economic impact*

Consultation responses and dialogue with the industry has indicated that hook and line fishers rarely target bass but catch them as part of a mixed fishery. Given the high value of bass (£14 per kilo, Jan 2017 – Area 3 Report), fishers have indicated that they often rely on bass by-catch to make a trip profitable. Several responses indicated that a prohibition between April and June would effectively put them out of business and/or require them to stop fishing for that period.

- *Wider impacts of the prohibition*

In addition to the direct impacts on fishers (i.e. loss of earnings), responses indicated that there is the potential for wider impacts. Several respondents indicated that a prohibition on bass fishing would likely increase pressure on other fisheries and most notably, the sole fishery.

Sole are generally targeted using trawls or nets, both of which have a greater 'ecosystem impact' than hook and line fishing. In addition, by-catch mortality of bass is thought to be greater for these two methods which could ultimately increase fishing mortality of bass without any economic benefit to the fishers.

Representation was also made that fish markets could be impacted (again in the context of other fisheries performing poorly) which could result in impacts on associated staff (e.g. delivery drivers, market officers etc.).

- *Not enough evidence to support the prohibition*

Several fishers indicated that there was not sufficient evidence to implement an emergency byelaw to protect bass stocks. In particular, the ICES advice was called into question given a) the limited number of surveys conducted to infer a status of the entire stock and b) that bass abundance has increased in the Eastern IFC District over the last ten years.

Costs to the fishing industry

Tables 1 and 2 below indicate the importance of bass in the context of the 'main fisheries' highlighted in the consultation.

The relative importance of bass has increased during the period 2010 to 2015 (inclusive) with a higher proportion of a fisher's overall catch being made up of bass.

Table 1 highlights the relatively small amounts of bass landed by hook and line within the Eastern IFC District². The total landed by this metier peaked in 2014 at 9 tonnes; noting that the allowance as per the European Regulations is 10 tonnes per vessel per year. This is likely to be an under-estimate of total landed weight given that bass landed in quantities of less than 30kg (previously 25kg) do not require reporting to the MMO (via Registered Buyers and Sellers) and are therefore unrecorded.

Further Cefas advice and dialogue with fishers has indicated that the low levels of bass landings are a reflection of the fishing methods employed by East coast fishers. Bass caught by hook and line within the EIFCA district are caught as a by-catch within a mixed fishery (which primarily targets cod) using demersal long-lines. Bass are thought to be relatively generalist with regards to feeding (and particularly during spawning periods) but generally target mid-water or surface-water prey. On the East coast, bass have been noted to target herring shoals near the surface (pers comms – Cefas).

It is worth noting also, during the 2015 C-Bass tagging study³, Cefas commissioned a local fisher to locate productive bass fishing grounds in order to capture and tag bass. The fisher is reported to have taken two weeks to locate such grounds using long-lines given the inefficiency of the method.

² ICES statistical rectangles 35F1, 35F0, 34F1, 34F0, 33F1, 32F1

³ C-Bass study – unpublished, pers coms Victoria Bendall, Cefas

Table 2 indicates the economic importance of bass catch given its high value. The proportion of the total catch is likely to over-estimate their importance as several other species contribute to the income of fishers which were not highlighted in the consultation. The Fleet Economic Performance Dataset (2008-2015)⁴ indicates that circa 24% of annual fishing income is generated by bass catch. This is further corroborated by analysis of MMO landings data which indicate that, with regards to vessels which have an authorisation to fish for bass by hook and line⁵, the percentage contribution is likely to range from 0 to 76% with an average of 18.3%. Bass accounted for more than 24% of total annual landings for 17 out of the 24⁶ vessels with bass authorisations for hook and line fishing.

Table 1. showing landed weight (in tonnes) of the 'main' fisheries (as highlighted in the consultation) caught within ICES statistical rectangles 35F1, 35F0, 34F1, 34F0, 33F1, 32F1⁷ by hook and line (MMO landings data release 24/11/2016). The last row indicates the percentage of landings which were bass.

Fishery	2010	2011	2012	2013	2014	2015
Skates and Rays	29.84	26.58	35.69	38.97	29.85	16.58
Dogfish	4.02	3.89	13.71	17.08	12.38	12.04
Cod	168.04	31.90	49.55	21.72	17.09	39.88
Sole	5.42	0.06	0.27	0.38	0.68	0.62
Bass	6.06	2.51	3.06	4.80	9.04	6.78
Total	213.37	64.95	102.28	82.94	69.05	75.89
<i>% of total which is bass</i>	<i>2.84</i>	<i>3.87</i>	<i>2.99</i>	<i>5.78</i>	<i>13.09</i>	<i>8.93</i>

Table 2. showing landed value (£) of the 'main' fisheries (as highlighted in the consultation) caught within ICES statistical rectangles 35F1, 35F0, 34F1, 34F0, 33F1, 32F1 by hook and line (MMO landings data release 24/11/2016). The last row indicates the percentage of value attributable to bass.

Fishery	2010	2011	2012	2013	2014	2015
Skates and Rays	£70,070.27	£58,812.61	£81,566.50	£80,958.81	£60,209.80	£32,930.20
Dogfish	£3,906.39	£1,893.45	£5,328.65	£4,294.70	£4,102.90	£3,890.52
Cod	£392,669.11	£93,201.80	£132,569.11	£59,432.08	£40,743.15	£87,788.99
Sole	£36,984.87	£574.13	£2,229.61	£3,034.26	£4,240.60	£3,916.37
Bass	£50,207.53	£25,644.16	£28,222.18	£45,539.17	£86,227.62	£71,736.30
Total	£553,838.17	£180,126.15	£249,916.05	£193,259.02	£195,524.07	£200,262.38
<i>% of total which is bass</i>	<i>9.07</i>	<i>14.24</i>	<i>11.29</i>	<i>23.56</i>	<i>44.10</i>	<i>35.82</i>

⁴ The Fleet Economic Performance Dataset 2008-2015 (SeaFish) - http://www.seafish.org/media/Publications/Seafish_Fleet_Economic_Performance_Dataset_Digital_Version.pdf results from the consultation indicate that the vessels associated with the bass fishery fit within the 'under 10m hooks' segment of the assessment (based on vessel size and activity trends).

⁵ MMO data release 09/03/2017 – provisional authorisations for EU bass Regulations

⁶ MMO landings data was only available for 24 of the 28 vessels identified as having bass fishing Authorisations (hook and line) which may fish within the Eastern IFC District.

⁷ MMO landings data releases do not provide sufficient spatial granularity to distinguish fishing activity within the EIFC District only. The ICES statistical rectangles used in the analysis are likely to over-estimate fishing activity and reflect a precautionary approach.

The consultation indicates a range of business models with regards to bass, with some fishers landing £200 of bass per year and others indicating a landed value of £16,000.

Given the relatively small profit margins of vessels within this fleet, estimated as between (less than) £5,870 and £16,350 per annum⁸, it is clear that bass form an important part of annual income. The potential impacts of an Emergency Byelaw are compounded by the seasonality of bass landing. Table 3 indicates that circa 40% of annual bass were landed during April, May and June of 2015.

Given that some fishers annual landings rely heavily on bass landings and that this period is thought to constitute a significant proportion of annual bass landings (second to late Summer - September and October) there is the potential that some vessels would be unlikely to be profitable during the year in the context of an emergency byelaw. This is compounded by the relative poor performance of the cod fishery (during Winter 2016/17).

Table 3. showing landed weight (tonnes) and value (£) of the bass fishery during 2015 by month, caught within ICES statistical rectangles 35F1, 35F0, 34F1, 34F0, 33F1, 32F1 by hook and line (MMO landings data release 24/11/2016).

Month	Landed weight (tonnes)	% of landed weight	Landed value (£)	% landed value	number of different vessels	Proportion of fleet active
1	0.04	0.64	£441.07	0.61	2	10.53
2	0.07	0.96	£665.00	0.93	3	15.79
3	0.63	9.29	£6,373.49	8.88	6	31.58
4	0.89	13.16	£7,387.02	10.30	13	68.42
5	1.75	25.86	£17,479.22	24.37	15	78.95
6	0.28	4.13	£3,450.10	4.81	11	57.89
7	0.35	5.22	£4,056.78	5.66	7	36.84
8	0.39	5.72	£4,806.02	6.70	4	21.05
9	0.63	9.28	£7,497.34	10.45	5	26.32
10	1.64	24.18	£18,467.00	25.74	11	57.89
11	0.10	1.52	£1,093.26	1.52	5	26.32
12	0.00	0.03	£20.00	0.03	1	5.26
<i>Total</i>	<i>6.776</i>	<i>n/a</i>	<i>£71,736.3</i>	<i>n/a</i>	<i>19</i>	<i>n/a</i>

⁸ The Fleet Economic Performance Dataset 2008 (SeaFish) indicates average annual net profit of £5,870 for 'low activity over 10m vessels'. Vessels identified during the consultation were found to best fit within the 'low activity under 10m' or 'under 10m passive gear' segments however, no profit was provided for 'low activity under 10m' and so the similar 'low activity over 10m' segment was used to provide an estimate. Only an annual 'operating profit' was provided for 'under 10m passive gears' and as such, this is likely to be an overestimate of profit (i.e. does not take into account depreciation and interest as is the case for the 'low activity over 10m segment').

Nine respondents to the questionnaire had authorisation to fish for bass by hook and line and of these, 5 indicated that they would fish outside of the district. In addition, 20 fishers were asked if they were able to transit outside of the district at a meeting (Aldebrugh, 14 March 2017) and 14 indicated that they would (although not all of these had authorisations). There is likely to be an increase in vessel overheads associated with moving further offshore to fish (i.e. increased fuel etc.) although this cannot be monetised using the available evidence. The increased vessel costs could be offset by increasing catch. Other vessels will not be able to fish outside of the district.

An estimated monetary 'low' cost to the industry is £14,849. This is based on the landed value of bass catch taken within the district⁹ during April, May and June of 2016 (noting that 2016 data is still provisional).

An estimated 'high' cost to the industry is £57,320. This is based on 2015 landings for April, May and June of 2015 and adjusted to account for all 28 vessels with Authorisations fishing within the district during this period. It is conceivable that all Authorised vessels could take the estimated 40% of their annual allowance of 10 tonnes (per vessel) during this period (which, given the price of bass was £14 per kilo, (Jan 2017) would have a cost of £1,568,000) however this is very unlikely given the capabilities of the fleet and the historical levels of effort (as set out above).

It should be noted that both the 'low' and 'high' estimates are likely to be affected by factors such as the potential for unrecorded landings (i.e. those of less than 30kg) and the fact that the majority of fishers are thought to be capable of fishing outside of the district. Additionally, the figures do not reflect the wider costs associated with the prohibition (market workers, delivery driver etc.) or the indirect impacts of making individual fishers unprofitable for the year.

A best estimate is provided as the mean between the high and low cost - £36,085. Given that 28 vessels (at time of writing) are likely to exploit this fishery, the potential impact per vessel is estimated as £1,288. This is a modest economic impact however, in the context of a poor cod fishery (and low quotas of skate), variable reliance on bass (as a high proportion of annual income) and an estimated annual profit of between £5,870 and £16,350 per vessel within this fishery¹⁰, the relative scale of the impact is considered significant.

Benefits of Emergency Bass Byelaw

Ultimately the proposed Emergency Byelaw aims to enhance the long-term sustainability of the bass fishery. Given the reliance of many fishers on bass, long-term benefits of a sustainable bass fishery will be reflected in better economic returns within the fishery.

The basis of the proposed Emergency Bass Byelaw is, following the stated aim of the measures within the EU proposal to prevent fishing mortality on spawning aggregations, prohibit hook and line fishing during the 'later spawning period within the Eastern region'.

⁹ ICES statistical rectangles 35F1, 35F0, 34F1, 34F0, 33F1, 32F1

¹⁰ 2008 SeaFish – 'Low activity over 10m' and 'under 10m passive gear' – see footnote 7 above.

When forming spawning aggregations, bass are 'easier' to catch although this is primarily true of net-based fishing methods as opposed to hook and line fisheries. That said, a fisher is more able to take more bass if they manage to fish a spawning aggregation using hook and line.

Analysis of the available data (including from the consultation) and based on advice from Cefas, hook and line fishing mortality within the Eastern region, and particularly within the Eastern IFCA district, is thought to be of limited impact to bass stocks given the relatively small amounts taken during the spawning period.

MMO data indicates that circa 2.92 tonnes of bass will be landed during the period April to June (inclusive), based on 2015¹¹ landings. In the wider context of UK landings, this is not a significant amount (noting that each authorised vessel is permitted to land 10 tonnes of bass during 2017). However, bass from the Southern North Sea stock are thought to show a degree of 'site fidelity' within the eastern region. As such, the degree of impact fishing mortality may be underestimated by considering this in a UK context.

There is the potential that fishers increase bass fishing effort, partly in response to poor performance of other fisheries and given the 10-tonne annual allowance for bass (for Authorised vessels), there is significant latent capacity within the fleet. However, a significant increase is considered very unlikely due to the inefficiency of the fishing methods employed. Cefas advice has indicated that demersal lines are not an effective way to capture bass which primarily feed on small pelagics off the east coast (Lowestoft to Southwold).

In addition, bass are only thought to enter the 'inshore area' (i.e. within Eastern IFCA's District) to feed whilst in spawning condition. Such bass are thought to potentially form aggregations to do such (making them 'easier' to catch) but crucially, will be subject to fishing pressure when they form spawning aggregations outside of the district.

Ultimately the 'benefit' in terms of a reduction in fishing mortality will only be a reflection of that associated with vessels which cannot fish outside of the spawning grounds. This reduction may however be degraded as fishers take more bass to cover additional vessel overheads (i.e. fuel, wages etc.) related to a longer fishing trip.

As such it is unlikely that an emergency bass byelaw will have the intended beneficial impact on bass stocks.

Summary of cost versus benefit

- Income generated from bass landings form a significant proportion of total fishing income to the extent that some fishers would be unlikely to be 'profitable' over the year given that circa 40% of annual bass landings will be landed during April, May and June (during the proposed prohibition);

¹¹ MMO data for 2016 is still provisional and as such, the whole year is not considered in the assessment. Provisional landed weight of bass for Apr, May and Jun 2016 is 2.36 tonnes.

- Relatively small volumes of bass (circa 2.5 tonnes) are likely to be landed via hook and line which reflects that bass are typically caught as by-catch in a mixed demersal fishery;
- Bass are thought to enter the inshore area to feed whilst in spawning condition but move further offshore (i.e. outside of EIFCA district) to spawn. As such, bass protected by an EIFCA byelaw within the district will be subject to fishing pressure when they ultimately leave to spawn;
- Many fishers who will be effected by an Emergency Byelaw will transit outside of the district to target the same bass, degrading the benefits of the byelaw.

Proportionality

Written legal advice has indicated that an Emergency Byelaw implemented on the premise of the paper presented at the 27th EIFCA Meeting (15th February 2017) would be proportionate and reasonable. However, further analysis of available evidence and consideration of the outputs from the consultation indicate that the byelaw would not be proportionate.

To impose additional burdens beyond those generally imposed (by the European Regulations) would need justification with respect to why such measures are required within the district above and beyond those outside it is required. A key element to such justification was initially the later spawning period of bass within the Eastern Region. However, this justification is degraded by further Cefas advice which has indicated that spawning during April, May and June is not distinct to the Eastern IFCA district. This has an impact on the proportionality of the measures.

Furthermore, given the above assessment of the potential costs and benefits of the measures above, the proposed prohibition appears to have the potential to disproportionately impact fishers within the Eastern IFCA district with only limited (or negligible) benefit.

Conclusion

Bass are an important commercial species within the Eastern IFCA district, particularly in relation to smaller vessels and in the context of a poor cod fishery. The 'monetised' economic impact of an Emergency Byelaw is considered to have the potential to have significant impacts on the industry.

The potential for impacts on the stock as a result of hook and line fishing are considered to be limited given the low levels of fishing mortality. The potential benefits of the byelaw are limited by the spatial extent of the district – bass protected through the bylaw will be subject to fishing mortality when they leave to spawn. This is compounded by indications that most fishers will likely fish outside of the district to target bass (increasing vessel overheads and potentially increasing overall fishing mortality).

On balance, the potential benefits of the emergency byelaw do not offset the potential for cost to the industry.