Devon & Severn IFCA
Inshore Fisheries and Conservation Authority

Fisheries in EMS
Monitoring and Control Plan for Amber and Green risk categories

European Marine Site: Severn SAC

D&S IFCA MCP ID	D&S IFCA HRA ID	Fishing Activity	Feature(s)	Sub-feature(s)
MCP_UK0013030_AJ36_2017	HRA_ UK0013030_ AJ36	Fyke and stake net	Twaite shad	
MCP_UK0013030_AJ24_2017	HRA_ UK0013030_ AJ24	Gill nets	Twaite shad	
MCP_ UK0013030_AJ25_2017	HRA_ UK0013030_ AJ25	Trammel nets	Twaite shad	
MCP_UK0013030_AJ26_2017	HRA_ UK0013030_ AJ26	Entangling nets	Twaite shad	
MCP_UK0013030_AJ27_2017	HRA_ UK0013030_AJ27	Drift nets (pelagic)	Twaite shad	
MCP_UK0013030_AJ28_2017	HRA_ UK0013030_AJ28	Drift nets (demersal)	Twaite shad	

Iteration 1: August 2019

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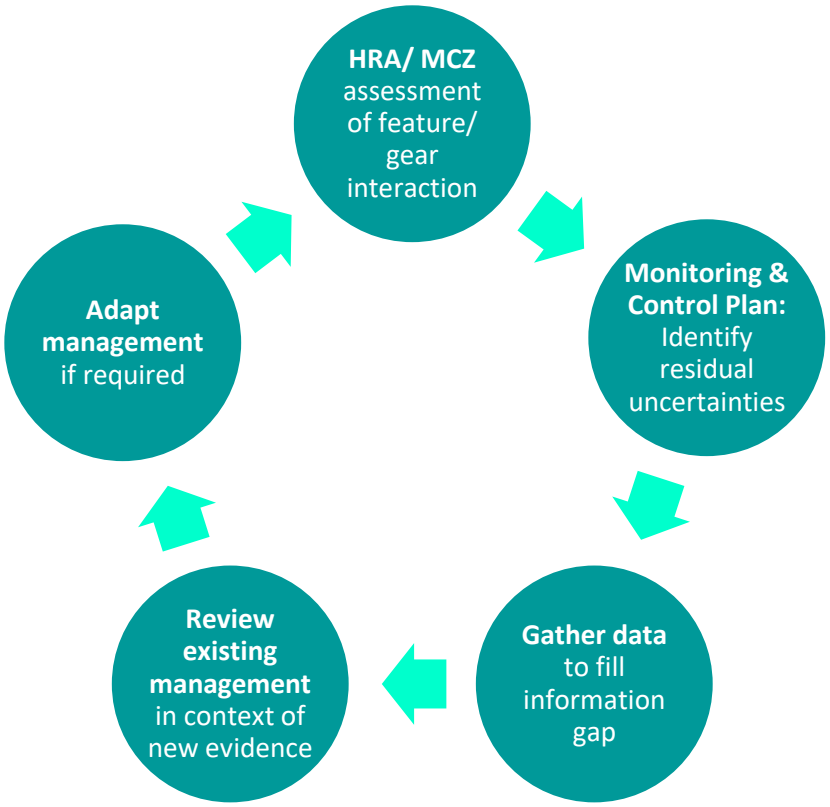
Iteration	Dates	Author/ Reviewer	Comments
1	January 2019	Libby West	
1.1	August 2019	Sarah Clark	QA'ing.

1.0 Introduction

Devon and Severn IFCA is committed to an Ecosystem Approach. Adaptive management is seen as a key tool for effectively implementing the Ecosystem Approach (Farmer et al. 2012). Adaptive management acknowledges the high levels of uncertainty in natural systems and the difficulties of making decisions based on this uncertainty. It provides a framework for a flexible and pragmatic approach to marine management, allowing sustainable development whilst adapting management and policies to respond to new information.

Monitoring and Control Plans (MCPs) are being developed by D&S IFCA for certain gear-feature interactions in Marine Protected Areas (MPA) where Habitat Regulations Assessments (HRAs) or Marine Conservation Zone (MCZ) assessments find large uncertainties in the scientific and/or fishing effort evidence. They will provide information on what monitoring will be undertaken, how this new information will be used, the timeframes for data collection and review of any current assessments. Crucially MCPs will identify suitable management mechanisms, should they be required following the outcomes of the data collection. The adoption of a permitting byelaw system by D&S IFCA allows for true adaptive management which can respond effectively when risks are identified.



The Monitoring and Control Plan should be read in conjunction with the original MPA assessment for which it was identified as being necessary.

2.0 Residual Uncertainties

2.1 Uncertainties Around Fishing Effort

The HRA for the interaction between fixed netting and twaite shad in the Severn Estuary concluded that commercial fishing effort using this gear type is currently very low and declining (Table 2). The HRA also reported low levels of interaction between the current levels of net fisheries and twaite shad and highlighted that commercial fishermen were aware of legislation which requires them to return all species of shad to the sea immediately. However, there were some uncertainties relating to the level of fixed netting effort in the Severn Estuary EMS and the conclusions of no LSE were largely based on the low level of effort.

Drift netting was concluded to have no likely effect at the TLSE level and NE agreed with this conclusion. Despite this, D&S IFCA proposes to include this activity within the Monitoring and Control Plan as there was relatively little information available about bycatch of shad in these fisheries.

2.2 Uncertainties Around Gear-Feature Interaction

Some uncertainty was identified around the levels of shad bycatch in the HRAs and in the subsequent advice from Natural England. Little evidence exists of bycatch rates in net fisheries in general, and little is known about movement patterns of shad.

3.0 Monitoring Requirements

3.1 Fishing Effort Monitoring

The original Fishing Activity Report for the Severn Estuary described two commercial fishermen fishing with static nets inside the European Marine Site and two fishermen who fish with static nets and drift nets outside the EMS (Ross 2016) and the HRA was based upon this information. The number of permits issued in 2019 will be monitored to compare to the original figures in the HRA.

3.2 Gear-Feature Interaction Monitoring

A shad bycatch reporting scheme was recommended by Natural England as way of improving understanding of the locations and seasonality of bycatch and will be instigated in 2019.

Additionally, Devon and Severn IFCA is working with Swansea University and the Blue Marine Foundation to collect biological data on herring in the Severn Estuary. During sampling Swansea University staff are collecting fin clips from 120-150 fish per sample, which represents approximately 25%-100% of a day's catch. These were taken during Autumn 2018 and Spring 2019. Swansea University staff were asked to record any incidences of shad bycatch. Any further sampling of this kind will also record any bycatch.

4.0 Trigger points

4.1 Fishing Effort Trigger Points

In the first iteration of the Monitoring and Control Plan Devon and Severn IFCA will compare the number of permits issued in the first instance to those predicted in the original HRA. If the predicted number of permits does not exceed those predicted, then no review of the HRA should be triggered. Because of the low level of commercial activity reported, if the number of commercial permits issued is higher than those predicted in the original HRA then a reassessment will be triggered.

Future reviews of netting effort in the Severn Estuary EMS should take place every three years on a timescale that allows the results to inform the triennial review of the netting permit byelaw permit conditions, unless information from elsewhere (e.g. officer observations, information from fishermen or the public) suggests trigger points have been reached before the three year review is due.

4.2 Gear-Feature Interaction Trigger Points

Natural England has requested that D&S IFCA start a voluntary reporting scheme, encouraging fishermen to report their catches of shad to D&S IFCA. The reporting scheme and observations will help to set a future trigger point for HRAs. However, in the interim any large single bycatch events (>10 fish) or regular small bycatch events of shad should trigger an HRA review.

Table 1. Monitoring activities and trigger points

Monitoring activity	Gear types	Trigger	Action	Management mechanism (if required)
Effort monitoring	Fyke and stakenets; Gill nets; Trammels; Entangling nets	Use estimated numbers in HRA as baseline. If numbers of commercial permit holders differ significantly from estimates, trigger an HRA. As commercial netting effort in the Severn is currently low if number of commercial permits exceed 5 the HRA is triggered.	1. Monitor fishery via number of permits issued to commercial and recreational netters in the Severn Estuary EMS	Netting Permit Byelaw
Effort monitoring	Drift nets (demersal); Drift nets (pelagic)	Use estimated numbers in HRA as baseline. If numbers of commercial permit holders differ significantly from estimates, trigger an HRA. As commercial netting effort in the Severn is currently low if number of commercial permits exceed 5 the HRA is triggered.	1. Monitor fishery via number of permits issued to commercial and recreational netters in the Severn Estuary EMS	Netting Permit Byelaw
Bycatch (shad) reporting	All netting types	Baseline data will be collected in 2019 to inform future Monitoring and Control Plan trigger points. However, any large single bycatch events (>10 fish) or regular small bycatch events of shad should trigger an HRA.	1. Work with Swansea University in Autumn 2018 and Spring 2019 to look at bycatch levels whilst sampling as part of the Bristol Channel Herring project.	Netting Permit Byelaw
Bycatch (shad) reporting	All netting types	Baseline data will be collected in 2019 to inform future Monitoring and Control Plan trigger points. However, any large single bycatch events (>10 fish) or regular small bycatch events of shad should trigger an HRA.	1. Set up by-catch reporting scheme for other net fisheries, as requested by Natural England	Netting Permit Byelaw

5.0 Management

Byelaws are local measures put in place to manage the fisheries within the D&S IFCA district. D&SIFCA inherited many byelaws from the predecessor organisation (Devon Sea Fisheries Committee); however, the responsibilities for the D&SIFCA have been increased and are more extensive to those of Devon Sea Fisheries Committee. As a result, D&S IFCA is reviewing all inherited byelaws to ensure the byelaws meet our duties under the Marine and Coastal Access Act and Defra's Change of Approach to Management of Fisheries in European Marine Sites. D&S IFCA has taken a view that a traditional model of byelaw making (in most circumstances) does not provide a suitable management structure. Inherited byelaws were identified as being too rigid to fit an ever-changing situation. D&S IFCA has developed Permit Byelaws where the management measures lie within the Permit of the Byelaw. . The new Permit Byelaws can replace multiple legacy byelaws related to a particular activity and provide the necessary flexibility for implementing adaptive management.

Permit based byelaws introduced to date include:

- Mobile Fishing Permit Byelaw
- Potting Permit Byelaw
- Diving Permit Byelaw
- Netting Permit Byelaw

Permit based byelaws provide scope for both fixed and flexible management measures via the conditions of use within the permits issued to fishers. The scope of the flexible conditions is limited to catch, gear, spatial and time restrictions. The review procedure of flexible conditions is detailed within the main Byelaw(s). D&SIFCA has a duty to review all of the flexible conditions (per byelaw) at least every three years but can review conditions within a shorter time period as considered necessary. Any new permit byelaw (the whole byelaw) needs to be reviewed within five years.

Permit based byelaws allow separation of different users (fishers) or slightly different types of fishing activity managed by a single byelaw. Separation is achieved by the issue of separate categories of permits dependent on the activity being managed. The permit byelaws often separate commercial fishers and recreational fishers, with the permit's conditions of use proportionate to their needs. By permitting fishers, D&S IFCA has a very direct way of monitoring effort. The permitting byelaws also allow for D&S IFCA to request any additional information for the management of the fishery.

Table 2. Audit trail summary for HRAs and Natural England advice for netting activities and shad in the Severn Estuary European Marine Sit

D&S IFCA interaction ID	Specific gear types	Stage of submission	NE Advice reference	IFCA HRA Conclusion	NE Advice summary	Inclusion in this Monitoring and Control Plan?
HRA_UK0013030_AJ27;HRA_ UK0013030_AJ28	Drift nets (pelagic); Drift nets (demersal)	Formal advice received14/03/16	175274 and 175355	TLSE no significant effect. Commercial drift netting occurs at low level and only outside EMS boundaries.	TLSE agreed by NE no further actions required	Yes
HRA_ UK0013030_AJ36; HRA_ UK0013030_AJ24; HRA_ UK0013030_AJ25; HRA_ UK0013030_AJ26	Fyke and stake net; Gill nets; Trammel nets; Entangling nets	Formal advice received 15/12/16	203609	Appropriate Assessment. Commercial static netting levels low but some potential for bycatch and anecdotal reports of occasional bycatch of individual shad. Some mitigation appropriate and asked for informal advice from NE. Informal advice incorporated into final draft of the AA.	Agreed via informal advice from Natural England that effort levels will be monitored via the permitting byelaw system and Devon and Severn IFCA will introduce a by-catch reporting mechanism for shad by commercial fixed-net fishermen and will undertake a shad awareness raising exercise which will involve developing and distributing information on the rules relating to shad and identification of the species. NE agreed with suggested management measures included in the final draft of the AA following this informal advice.	Yes
HRA_ UK0013030_AJ34	Beach Seine/ Ringnet	Formal advice received 11/08/2017	189975	TLSE no significant effect. Not occurring or very low level.	NE agreed with conclusions of TLSE. NE identified need to monitor netting levels, via permitting byelaw.	Yes
HRA_ UK0013030_AJ23	Fish traps	Formal advice received 14/03/16	175274 and 175355	TLSE no significant effect. Not occurring inside EMS. Effort levels just outside very low.	TLSE agreed by NE no further actions required	No
HRA_ UK0013030_AJ33	Purse Seine	Formal advice received 14/03/16	175274 and 175355	TLSE no significant effect. Not occurring inside EMS.	TLSE agreed by NE no further actions required	No

6.0 References

Farmer, A., Mee. L., Langmead, O., Cooper, P., Kannen, A., Kershaw, P. and Cherrier, V. 2012. The Ecosystem Approach in Marine Management. **EU FP7 KNOWSEAS Project. ISBN** 0-9529089-5-6