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

European Marine Site: Lundy SAC

D&S IFCA MCP ID	D&S IFCA HRA ID	Fishing Activity	Sub-feature(s)
MCP_UK0013114_A1_2018	HRA_UK0013114_A1	Beam trawl (whitefish)	Subtidal coarse sediment
MCP_UK0013114_A2_2018	HRA_UK0013114_A2	Beam trawl (shrimp)	Subtidal coarse sediment
MCP_UK0013114_A3_2018	HRA_UK0013114_A3	Beam trawl (pulse/wing)	Subtidal coarse sediment
MCP_UK0013114_A4_2018	HRA_UK0013114_A4	Heavy otter trawl	Subtidal coarse sediment
MCP_UK0013114_A5_2018	HRA_UK0013114_A5	Multi-rig trawls	Subtidal coarse sediment
MCP_UK0013114_A6_2018	HRA_UK0013114_A6	Light otter trawl	Subtidal coarse sediment
MCP_UK0013114_A7_2018	HRA_UK0013114_A7	Pair trawl	Subtidal coarse sediment
MCP_UK0013114_A8_2018	HRA_UK0013114_A8	Anchor seine	Subtidal coarse sediment
MCP_UK0013114_A9_2018	HRA_UK001311_A9	Scottish/fly	Subtidal coarse sediment
MCP_UK0013114_A10_2018	HRA_UK0013114_A10	Towed (demersal/pelagic)	Subtidal coarse sediment

Iteration 2.1: May 2019

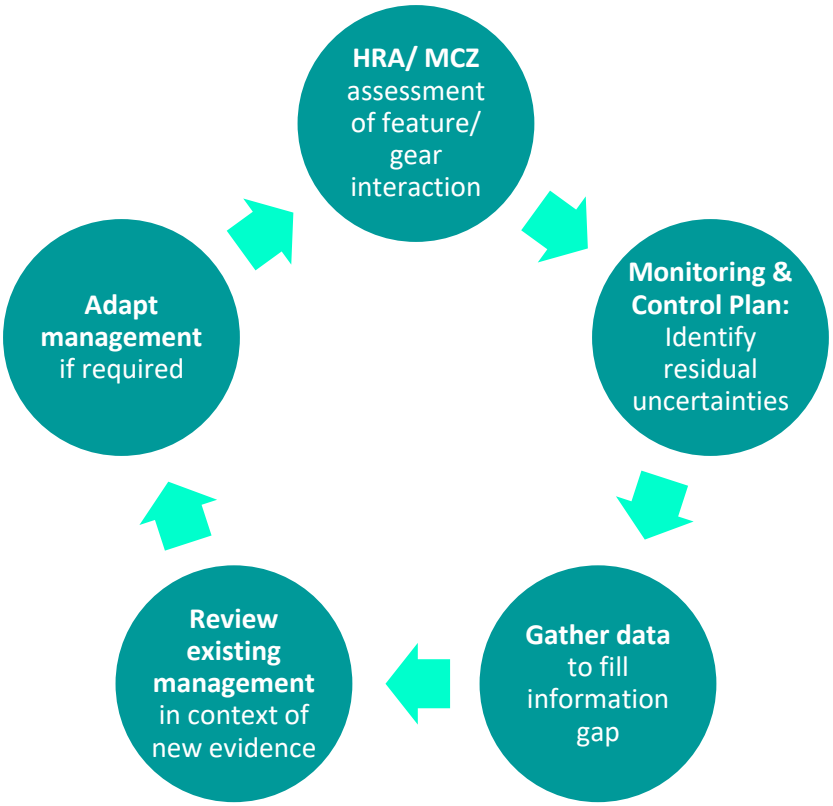
Contents

Version	Date	Author(s)	Comments	Reviewer(s)
1	December 2018	Lauren Parkhouse		Elizabeth West
	December 2018			Sarah Clark
2	July 2019	Lauren Parkhouse	Changes made due to informal advice from NE on version one	Sarah Clark August 2019
2.1	October 2019	Lauren Parkhouse	Minor changes made from formal comments by NE.	

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 Cycle can be seen below.



This Monitoring and Control Plan should be read in conjunction with the original HRA (Version 3 2016) for which it was identified as being necessary. An updated version of the HRA (Version 4 2018) has also been produced in response to other points raised under Natural England's Formal Advice of 25th November 2016.

2.0 Residual Uncertainties

In carrying out a Habitat Regulation Assessment for towed demersal gear on sub-tidal coarse sediment, D&S IFCA concluded that for the current number of vessels, which fish seasonally, there would be no significant effect on this feature.

Natural England (NE) advised that due to uncertainties surrounding the level of effort and the uncertainties of possible impacts of otter trawls on coarse sediment, a Monitoring and Control Plan should be developed for towed demersal gear on the coarse sediment sub-feature.

2.1 Uncertainties Around Fishing Effort

There is uncertainty surrounding the effort levels of the fishing activity at the site. The initial HRA determined there were five vessels potentially fishing in the area. Since this time, due to the sale of some of the vessels operating, D&S IFCA is now aware of only two vessels which fish within the site during the squid season. This, however, does not exclude other vessels from fishing this area in the future. Although the IFCA knows the number of vessels and the season which the fishing takes place, there is uncertainty relating to how often these vessels target the area within the SAC.

2.2 Uncertainties Around Gear-Feature Interaction

The current evidence available for impacts of trawling on subtidal sediment has a focus on subtidal sand, with very few studies considering the effect on subtidal coarse sediments. The HRA used the best available evidence at the time however, there are some uncertainties surrounding the impact demersal trawl gear may have on subtidal coarse sediment.

3.0 Monitoring Requirements

D&S IFCA has undertaken an amended HRA for towed gear on sub-tidal coarse sediment to address some of the points raised by Natural England. Due to the uncertainties documented above, D&S IFCA has also developed this Monitoring and Control Plan. This is split into two sections; fishing effort monitoring, and gear-feature interaction.

3.1 Fishing Effort Monitoring

The squid fishery is sporadic. It did not occur for the two years prior to the initial HRA being carried out (since 2014). The vessels that operated in the area informed the IFCA that they had attempted the fishery during this time, but since no squid were caught, they didn't continue in the area or pursue the fishery further.

In the first instance, D&S IFCA will determine the number of Mobile Fishing Permit holders which could potentially fish in the Lundy area. This will give officers a list of vessels which need to be monitored. In 2018 D&S IFCA was aware of two vessels that operate in this area.

In the summer of 2018, one of the two vessels, which operate in the area, had an operational VMS system onboard. During the entire squid season this vessel entered the Lundy SAC only five times over a two-week period.

D&S IFCA now has the means to monitor the level of fishing effort within the site using both iVMS and VMS via the Mobile Fishing Permit Byelaw permit conditions. From 28th August 2018, there is a requirement for all mobile gear vessels greater than 6.99m, which operate within the district, to have operational units on board and be reporting every three minutes under a permit condition of the byelaw. D&S IFCA can track vessels in real time, investigate tracks retrospectively for each vessel, and set up an area in which to monitor vessel activity. This information will allow the IFCA to know exactly how often the site is used, and by how many vessels.

In the first instance these effort data will be used to establish a baseline. Once a baseline of effort is established, D&S IFCA will monitor if this level changes each year.

Analysis will include number of passes by each vessel, the level of multiple exposures, and the area and percentage of the feature which is exposed to the trawling activity. These data will be used to review the HRA and any likely impact to the feature and communities present, and amendments to the assessments will be made if required. Any revised assessments will be sent to Natural England for advice. If necessary, the new HRA and NE advice will be presented to the D&S IFCA Byelaw and Permitting Sub-Committee to review any changes in management.

3.2 Gear-feature Interaction Monitoring

As the fishery did not occur for two years prior to the initial HRA, and NE had planned baseline survey work within the Lundy SAC, there was the opportunity to carry out some sediment grabbing work in the fishery location. The objective was to characterise the habitat in the squid fishery area to provide information for any possible future impact study. At the time of writing the report has not be produced for the work undertaken. Once the report is available, D&S IFCA will review the results of the grabbing work and review the HRA if deemed necessary. Any revised assessments will be sent to Natural England for advice. If necessary, the new HRA and NE advice will be presented to the D&S IFCA Byelaw and Permitting Sub-Committee to review any changes in management.

D&S IFCA and NE would work together to determine how any future gear-feature interaction monitoring (which might involve further grabbing or camera work) could take place if an increase in effort was identified.

4.0 Trigger Points for HRA Review

4.1 Fishing Effort Trigger Point

An accurate level of effort for each vessel needs to be obtained via fishing effort monitoring during the 2019 squid fishing season. The effort will be assessed to confirm that the level will not compromise the conservation objectives of the site. This baseline will then be used to monitor changes in effort level and a trigger point will then be set.

Each year the fishing activity level will be monitored and if there are increases, a review of the HRA will be triggered.

4.2 Gear-feature Interaction Trigger Point

The results from the survey, which was undertaken by the EA in 2017, will be reviewed once available. If there is new evidence available from these results, the HRA will be reviewed.

Monitoring activity	**Gear types**	**Trigger**	**Action**	**Management mechanism (if required)**
Effort monitoring	Beam trawl (whitefish), Beam trawl (shrimp), Beam trawl (pulse/wing), Heavy otter trawl, Multi-rig trawls, Light otter trawl, Pair trawl, Anchor seine, Scottish/fly, Towed (demersal/pelagic)	The HRA will be reviewed at the end of season, if fishing has occurred.	1. Monitor fishery via number of permits issued to vessels in the north of the district. 2. Monitor these vessels using iVMS and VMS. Monitor number of vessels, and effort of each vessel. The effort levels in 2019 will be used as a base line.	The conclusion of the any HRA review will determine if new management measures need to be put in place. This will be done via the Mobile Fishing Permit Byelaw and could include gear restrictions, temporal or spatial closures, or prohibition of the activity from the feature.
Gear-feature impact	Beam trawl (whitefish), Beam trawl (shrimp), Beam trawl (pulse/wing), Heavy otter trawl, Multi-rig trawls, Light otter trawl, Pair trawl, Anchor seine, Scottish/fly, Towed (demersal/pelagic)	The HRA will be reviewed if there is new evidence from the 2017 survey report.	1. Grab samples were carried out in 2017 for habitat characterisation. Fishing had not taken place from 2014 onwards. 2. Review results from grab work when available. Review HRA if new evidence is presented.	The conclusion of the any HRA review will determine if new management measures need to be put in place. This will be done via the Mobile Fishing Permit Byelaw and could include gear restrictions, temporal or spatial closures, or prohibition of the activity from the feature.

5.0 Management Mechanisms

Devon and Severn IFCA is working towards a system where all fisheries activities are managed by permit byelaws. Those introduced so far are:

- 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 includes catch, gear, spatial and temporal restrictions. D&SIFCA has a duty to review all the flexible conditions (per byelaw) at least every three years but can review conditions within a shorter time period if considered necessary (for example following an HRA review triggered by a Monitoring and Control Plan).

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 which may be necessary for the management of the fishery.

The permit byelaw system can therefore fully accommodate the adaptive management approach being outlined by this Monitoring and Control Plan.

6.0 Flow Diagram of Monitoring Process

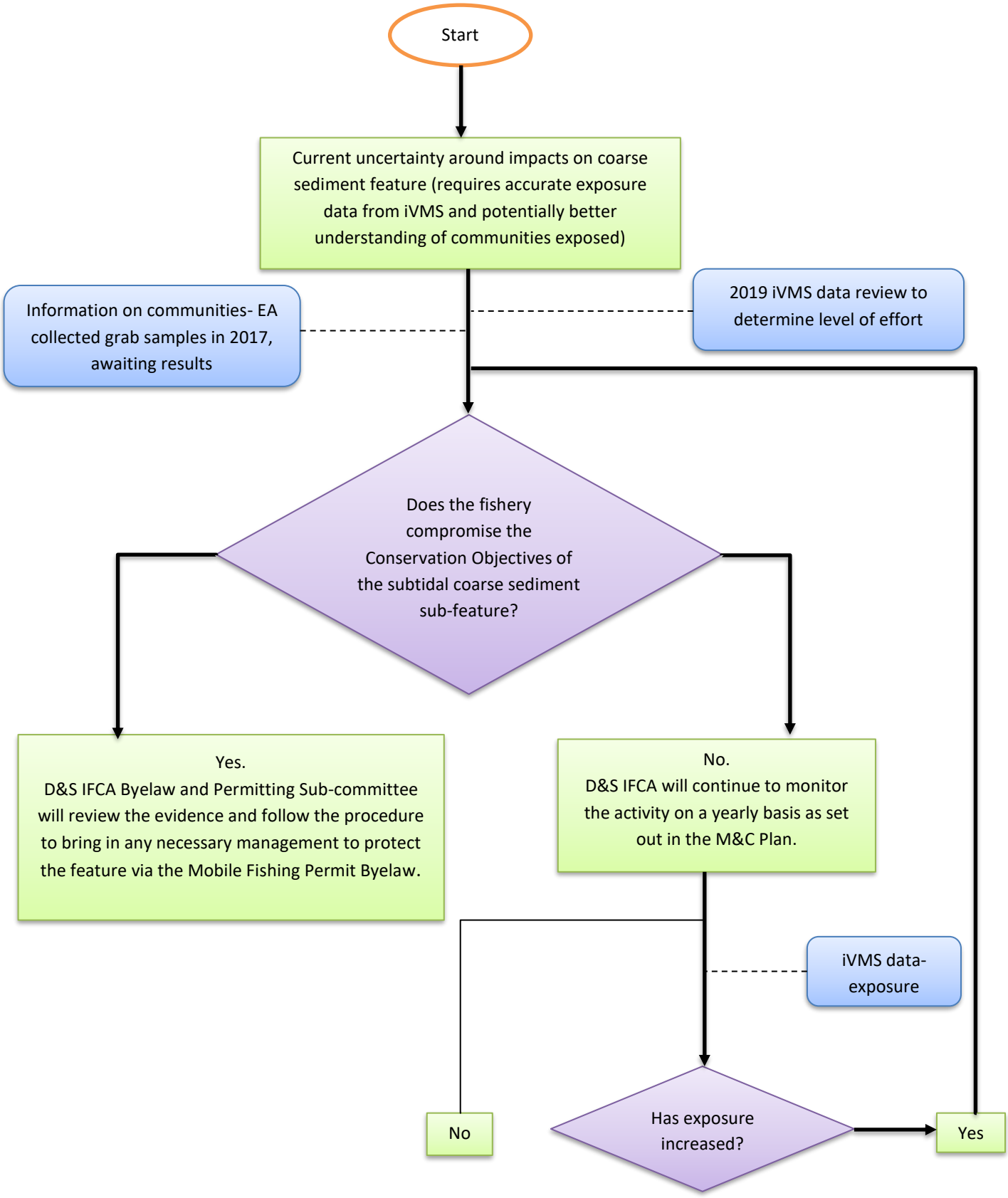


Table 2. Audit trail summary for HRAs and Natural England advice for towed gear and sub-tidal coarse sediment in the Lundy European Marine Site

D&S IFCA interaction ID	Specific gear types	Stage of submission	NE Advice reference	IFCA HRA Conclusion	NE Advice summary	Inclusion in this Monitoring & Control Plan?
HRA_UK0013114_A1 HRA_UK0013114_A2 HRA_UK0013114_A3 HRA_UK0013114_A4 HRA_UK0013114_A5 HRA_UK0013114_A6 HRA_UK0013114_A7 HRA_UK0013114_A8 HRA_UK0013114_A9 HRA_UK0013114_A10	Beam trawl (whitefish), Beam trawl (shrimp), Beam trawl (pulse/wing), Heavy otter trawl, Multi-rig trawls, Light otter trawl, Pair trawl, Anchor seine, Scottish/fly, Towed (demersal/pelagic)	Formal advise received 25/11/2016	200747a	Appropriate Assessment. Due to the current level of activity which takes place for three months a year, D&S IFCA concluded that it is unlikely to have a significant effect on the extent, distribution, structure or function of the features.	NE advised that the conclusion made in the assessment were subject to a high level of uncertainty. NE advised that a monitoring and control plan should be developed, with the first step to collect more accurate information on the effort.	Yes

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

D&S IFCA Fisheries in EMS HRA for Amber and green risk categories – Lundy SAC, Qualifying features: sandbanks and subtidal coarse sediment. Fishing activity assessed: towed (demersal) and towed (demersal/pelagic). **Version 3 October 2016**

D&S IFCA Fisheries in EMS HRA for Amber and green risk categories – Lundy SAC, Qualifying features: sandbanks and subtidal coarse sediment. Fishing activity assessed: towed (demersal) and towed (demersal/pelagic). **Version 4 December 2018**