



Solent Dredge Permit Byelaw Management Intentions Document

2019

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1.0 Introduction

As per paragraph (25) of the Solent Dredge Permit Byelaw (“Permit Byelaw”), the Authority, may, for the purposes of managing the sustainable harvesting of bivalves in the Solent, attach to a permit, remove from a permit or vary one or more flexible permit conditions.

This document seeks to provide clarity of intention and process, which will underpin future management decisions regarding the flexible permit conditions.

This document is to be read in conjunction with the Permit Byelaw and the Solent Dredge Permit Access Policy, which seek to collectively provide transparency with regard to the future management of the Solent bivalve stocks.

This document will be reviewed every three years or sooner in accordance with the procedures set out in paragraph (27) of the Permit Byelaw.

Any changes to flexible permit conditions will be made in line with the review procedure outlined in paragraph (27) of the Permit Byelaw.

1.1 Rationale

The facility to introduce flexible permit conditions under the scope of the Permit Byelaw is primarily to enable Southern IFCA to fulfil its obligations under paragraph 153(2) of the Marine and Coastal Access Act 2009, to:

- a) Seek to ensure that the exploitation of sea fisheries resources is carried out in a sustainable way;
- b) Seek to balance the social and economic benefits of exploiting the sea fisheries resources of the district with the need to protect the marine environment from, or promote its recovery from, the effects of such exploitation;
- c) Seek to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district.

In order to achieve these obligations, the flexible permit conditions will:

- 1. Assist in improving our understanding of the Solent bivalve fisheries, with regard to fishing effort;
- 2. Optimise all Solent bivalve fisheries through maintenance of broodstock to support stock recovery;
- 3. Facilitate sustainable harvesting of Solent bivalves;
- 4. Facilitate stakeholder compliance with relevant regulations;
- 5. Provide and maintain transparency in management decisions;
- 6. Enable the application of appropriate and bespoke management in the Solent bivalve fisheries in response to an up to date evidence base;

7. Assist and inform the planning of surveys and stock assessments.

1.2 Stakeholder Engagement

Any changes to flexible permit conditions will be made in consultation with permit holders as specified in Paragraph (27) of the Permit Byelaw.

In order to support this process, engagement with permit holders will be undertaken via an annual Solent Bivalve Community Forum. In addition to discussions surrounding any proposed changes to flexible permit conditions, this forum will provide an opportunity for the Authority to discuss the outcomes of the Solent Bivalve Stock Assessments.

Representatives from the Southern IFCA Technical Authority Committee will be present at the Forum, acting in an advisory role to facilitate communications.

A general invite will be sent to all permit holders and a call for agenda items will be sought prior to the forum.

2.0 The Solent dredge permit byelaw

2.1 The Scope

The following provisions have been introduced under the Permit Byelaw:

- a) Paragraph (10): A Category A Permit, for the harvesting of all bivalves (except oysters);
- b) Paragraph (11): A Category B Permit, for the harvesting of oysters only;
- c) Paragraph (25): The ability to introduce Flexible Permit Conditions under a Category A or Category B permit,
- d) Paragraph (2): Specified areas, known as Bivalve Management Areas;
- e) Paragraph (19): Specified information, in the form of Catch Returns;
- f) Paragraph (4): A specified period, in the form of a Daily Curfew.

3.0 The Solent dredge permits

3.1 The evidence base

The management decisions regarding the harvesting of Solent bivalves will be underpinned primarily by the outcomes of the annual (oyster) or biannual (clams) Solent stock assessments, which, as documented in paragraph (28, a) of the Permit Byelaw will take into consideration the following:

- a) The density of the bivalve stock within all or each of the Bivalve Management Areas;
- b) The catch rate of bivalves within all or each of the Bivalve Management Areas;

- c) The proportion of bivalves which are immature or below minimum landing size within all or each of the Bivalve Management Areas;
- d) The proportion of mature bivalves intended to promote recruitment within all or each of the Bivalve Management Areas;

or by any other pathway, as identified in paragraph (28) of the Solent Dredge Permit Byelaw.

3.2 The scope

As directed by Section (156) of the Marine and Coastal Access Act 2009, the flexible permit conditions introduced under either a Category A or Category B permit may relate to the following matters:

- a) Prohibiting or restricting harvesting of sea fisheries resources;
- b) Limiting the amount of sea fisheries resources harvested by a permitted vessel;
- c) Limiting the amount of time, a permitted vessel may spend harvesting;
- d) Prohibiting or restricting any method of harvesting;
- e) Setting the frequency of, deadlines for and content of catch returns.

3.3 The management 'toolbox'

In line with the scope described in Section 3.2, the following lists some of the management tools, which could be implemented under a flexible permit condition:

- a) The facility to open or close a Bivalve Management Area (BMA);
- b) The facility to delineate smaller areas within a BMA if required for finer scale management (individual beds);
- c) The ability to introduce 'broodstock reserves' in order to support the rejuvenation of the fishery on a seasonal and longer-term basis, as required;
- d) The ability to introduce quotas (this could include for example a bag limit);
- e) The ability to specify retention sizes (minimum¹ and/or maximum);
- f) The ability to introduce daily harvesting curfews, days at sea and rotational management;
- g) The ability to introduce sustainable methods of harvesting;
- h) The ability to introduce sustainable gear specifications.

¹ A minimum retention size must not be less than that listed in any applicable superseding Legislation

3.4 Management Intervention

For the purposes of this document, unsustainable will be determined by the Authority based upon a number of considerations which may include the Catch Per Unit Effort (CPUE) guidelines listed in this paper and any other evidence the Authority deems to be relevant.

Catch Per Unit Effort is a recognised measure for the long-term monitoring of a fishery, providing a measure of target species abundance. A decreasing CPUE would suggest that the target species are unable to support the current level of harvesting, whilst an unchanging CPUE would indicate sustainable harvesting based on the current efforts. An increase in CPUE would suggest an improvement in the stock abundance.

Consideration will be made for both the management of individual beds as well as for the wider BMAs (which are defined in the Schedule of the Solent Dredge Permit Byelaw). Management across a BMA seeks to provide fishers with the ability to manage their own harvesting across a wider area, this will also spread effort across a BMA.

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4.0 The Solent oyster fisheries

4.1 Annual oyster stock assessment

The Solent oyster stock assessment is carried out in the summer over a period of five to seven days and is designed to allow for maximum coverage across the Solent in order to provide a holistic understanding of the fishery (in 2018: 330 tows were undertaken, across 27 different beds). The survey uses a ladder dredge, which is towed by a chartered fishing vessel based in the Solent ports. The sampling is carried out using a grid of stations that had been previously developed on surveys carried out by CEFAs. In addition, sampling is also carried out at new sites in the Solent, which have been informed by industry engagement and consultation.

Given the nature of stock assessments, there are a number of caveats that should be considered:

- i. Oysters in the Solent are typically found in pockets and may not be present across entire beds; it is for this reason that the stock assessment aims to consider the presence of oysters across a bed. Therefore, the average CPUE figure may be slightly less than a typical catch rate as fishers would tend to focus on the areas of higher density. It is for this reason that BMA average thresholds have been introduced to inform the management of the wider fisheries (Section 4.4), rather than solely relying on the CPUE of an individual bed.
- ii. Tow lengths undertaken during the course of a stock assessment may vary, the stock assessment data is calibrated to take into account the distance of each tow, with the charter vessel aiming to tow for approximately 2 minutes, which is typically shorter than a commercial tow in some locations.
- iii. Due to management constraints, the biology of the fisheries (to enable a period of growth post season), consistency in data collection and to provide a timely and relevant picture of the stock abundance pre-season the IFCA are required to survey during the summer. It must be recognised that the conditions during these months will be different to those found between November-February when the Oyster fishery is open. This may include the increased presence of weed, which may blind the ladder dredge in the summer months.

4.2 Catch per unit effort

The CPUE for the oyster stock assessment is calculated using the following factors:

- The weight of oysters caught in the dredge (kg);
- The time spent on a tow (hours)
- The width of the ladder dredge (metres).

4.3 Baseline threshold guidelines:

Table one provides CPUE thresholds which will be used to guide the management of the Solent Oyster fisheries. In addition to CPUE thresholds the Authority may also consider any other evidence when considering management intervention options.

The thresholds have been set in year one with consideration of the following:

- a) The baseline CPUE averages following the 2017 and 2018 Solent Oyster Stock Assessments (these figures are provided in Annex 1);
- b) To ensure consistency in management across all of the Solent oyster fisheries:
 - i. Southern IFCA have previously used this threshold when implementing closures of the Solent oyster beds under the 'Temporary Closure of Shellfish Beds' Byelaw.
 - ii. Sussex IFCA use this threshold in the management of Chichester Harbour Oyster fishery to balance the economic benefits of fishing whilst ensuring some

target species remain on the seabed to breed. Baseline averages for individual beds.

The guideline thresholds may be reviewed on an annual basis to reflect the best evidence available at the time.

Table 1: Baseline CPUE thresholds for individual beds and BMAs

Area of Relevance	CPUE (kg/m/hour) Threshold	Action
Individual Bed	<15	Closure
	≥15	Consideration of management intervention
BMA	<5	Closure
	≥5	Consideration of management intervention

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5.0 The Solent clam fisheries

5.1 Biannual clam stock assessment

Following a pilot survey in Southampton Water in 2017, the Authority now undertake two Solent clam stock assessments annually (3 days in April and 3 days in October). The stock assessment uses a box clam dredge (width 1 m), which was originally used commercially in the Solent clam fishery. The dredge is towed by chartered fishing vessels based in each of the Solent ports.

The stock assessment surveys 13 sites in Southampton Water, 9 in Portsmouth Harbour and 6 in Langstone Harbour. Three tows are undertaken at each site. Sampling may also be carried out at new sites in the Solent, which are informed by industry engagement and consultation.

Given the nature of the stock assessments, there are a number of caveats that should be considered:

- i. The dredge used is designed specifically for the fishery and therefore the spacing between bars in the dredge basket is designed to minimise the retention of bivalves under the minimum landing size. Therefore, there is a degree of bias with larger class sizes retained;
- ii. The data does not factor in dredge efficiency. The efficiency of the box clam dredge is likely to be low, other studies with a range of different fisheries and dredge types have shown that dredge efficiency can vary from 2-35%. There are no comparable studies for the type of dredge used in these surveys; therefore, it is difficult to determine an efficiency coefficient, which could be applied to the data. As such the CPUE data should be treated with a degree of caution, assuming that it represents an underestimation of the population of shellfish on the seabed.

5.2 Catch per unit effort

CPUE is calculated for manila clams, as weight of manila clams caught in the dredge (kg) per hour based on the size of the dredge used. All tows completed have a duration of one minute. CPUE is calculated for the total weight of the clams, as well as the weight of those above and below the minimum size.

5.3 Baseline thresholds

It is the primary intention of the Authority to build a CPUE dataset for this fishery between the years of 2018 and 2022 in order to provide a better understanding of the fishery and allow for analysis of the fishery following the implementation of the Solent Dredge Byelaw in November 2017, which introduced a four-month winter season for dredge fisheries within Southampton Water, Langstone Harbour and Portsmouth Harbour.

If during this interim period, the evidence base presented to the Authority (as per Section 3.1 of this document) suggests that the harvesting of clams within the Solent is unsustainable then flexible permits conditions may be considered for introduction in line with the procedure listed in paragraph (27) of the Solent Bivalve Permit Byelaw.

6.0 Cost of permits

It is the intention of the Authority at year one to charge a fee of £215 for either a Category A or a Category B Permit. This value is based on administrative costs only, as such the value for both permits will be the same.

The £215 fee will be fixed for both Category permits until year three; at this point the Authority will review the suitability of the existing permit fees in line with the review procedure, as per paragraph (27) of the Permit Byelaw. As part of the review the Authority will consider any costs associated with management of the Solent bivalve fisheries in line with paragraph (28, g) of the Permit Byelaw.

Administrative costs have been calculated based on the costs associated with the administration of the Poole Harbour Dredge Permit. A total cost analysis is provided in Annex 2 of this document.

7.0 The number of permits

As laid out in paragraph (23) of the Permit Byelaw, the Authority may limit the number of permits that it may grant.

It is not the intention of the Authority to restrict the number of permits available in years one to three, however, in line with the provisions outlined in the Solent Dredge Access Policy, a number of Introductory Access Criteria must be met to enable fishers to be eligible to apply for a permit at the time in which the Permit Byelaw is introduced.

Any considerations for restricting the numbers of permits available in year three and beyond will be in accordance with paragraph (27) of the Solent Dredge Permit Byelaw.

In addition, the Solent Dredge Access Policy also outlines Annual Access Criteria and provides a New Entrant Policy, as well as offering clarification on the procedure followed in the event that access to the fishery is capped, changes in circumstance for permit holders and an appeals procedure.

Annex 1: Baseline Averages CPUE for Solent Oyster fishery

Individual Beds	Bivalve Management Area	Kg oysters/per m of dredge/per hour		
		2017	2018	Baseline Average (2017-2018)
Newtown	Area 1: Western Solent	4.3	1.8	3.1
Pennington		0	1.2	0.6
Sowley		0	2.7	1.4
Stanswood Bay		1.3	2.8	2.1
Yarmouth		1.6	3.1	2.4
Lepe		1.2	1.9	1.6
			2.3	1.8
Bramble	Area 2: Northern Solent	4.6	7	5.8
Browdown		6.5	0.8	3.7
Chilling		4.5	3.8	4.2
Lee-on-Solent		2.5	1.4	2.0
North Channel		4.3	6.7	5.5
Stokes Bay			0	0.0
Thorn Knoll		0.3	0	0.2
Calshot		6.1	1.7	3.9
		2.7	3.1	
Osbourne Bay	Area 3: Eastern Solent	0.7	1.3	1
Ryde Middle		14.6	18.4	16.5
Spit Sand		0	0.6	0.3
Sturbridge		26.8	2.6	14.7
		5.7	8.1	
Ashlett Creek	Area 4: Southampton Water		0	0.0
Itchen		3.6	2.7	3.2
Hamble		6.3	4.3	5.3
Test			0	0.0
Weston			0	0.0
		1.4	1.7	
Bomb Ketch	Area 5: Portsmouth Harbour	13.4	4.2	8.8
Fareham		5.5	9.2	7.4
Porchester		4.4	2.8	3.6
		5.4	6.6	
Langstone Main	Area 6: Langstone Harbour	1.9	1	1.5
			1	1.45

Annex 2: Cost calculations: years one to three

Administration	Cost breakdown	Poole Harbour Permit	Solent Dredge Category A Permit	Solent Dredge Category B Permit
	Number of permits	45	20	20
	Total No. Of Days per year	44.5		
	Total Cost (£) - Officer Time (@ £202 per day)	8989		
	Postage Total	97.8		
	Stationary Total	161.5		
	Photocopying Total	6.94		
	Venue Hire Total	400		
	Total administrative costs	9655.24	4291.22	4291.22

	Species/Month	Days	Staffing		Vessel	Equipment	
			Number	Cost	Charter	(Dredge)	
Stock Assessment	Clams (October)	1	3 x IFCO	606	400	400	
		2	3 x IFCO	606	400		
		3	4 x IFCO	808	400		
	Clams (April)	1	3 x IFCO	606	400		
		2	3 x IFCO	606	400		
		3	4 x IFCO	808	400		
				Total (clam) stock assessment costs			6840
	Oysters (July)	1	3 x IFCO	606	650	300	
		2	3 x IFCO	606	650		
		3	3 x IFCO	606	650		
4		3 x IFCO	606	650			
5 ²		3 x IFCO	606	650			
			Total (oyster) stock assessment costs			6680	

Category A	
Formula (administrative costs)/no. Of permits	214.56
Category B	
Formula (administrative costs)/no. Of permits	214.56

² Oyster Survey ran for 7 days in 2018, Southern IFCA financed 5 days and Blue Marine financed two days.

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