

<b>Title:</b> Shellfish Permit Byelaw <b>IA No:</b> SXIFCA002  <b>Lead department or agency:</b> Sussex Inshore Fisheries and Conservation Authority <b>Other departments or agencies:</b> Marine Management Organisation, Defra, Natural England	<b>Impact Assessment (IA)</b>		
	<b>Date:</b> 01/04/2015		
	<b>Stage:</b> Development/Options		
	<b>Source of intervention:</b> Domestic		
	<b>Type of measure:</b> Secondary legislation		
<b>Contact for enquiries:</b> Tim Dapling, admin@sussex-ifca.gov.uk, address 12a Riverside Business Centre, Shoreham by Sea, West Sussex BN436R, 01273 454407			
<b>Summary: Intervention and Options</b>		<b>RPC Opinion:</b> Not Applicable	

Cost of Preferred (or more likely) Option			
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, Two-Out? Measure qualifies as
N/A	N/A	N/A	No   NA

**What is the problem under consideration? Why is government intervention necessary?**

This byelaw is proposed in accordance with the duties of the IFCA as set out in the Marine and Coastal Access Act 2009, such that the exploitation of sea fisheries resource is carried out in a sustainable way. Government (Sussex IFCA) intervention is required to redress the concenquence of economic incentive that is causing over exploitation of the fishery.

**What are the policy objectives and the intended effects?**

To move towards a Maximum Sustainable Yield.  
 To promote sustainable fisheries while conserving the marine environment.  
 To prevent further over exploitation of the fishery.  
 To enable a flexible approach to the management of the fisheries using an adaptive management method based on sound evidence.

**What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)**

Option 0. do nothing.  
 Option 1. Voluntary measures taken up by the fishing interests.  
 Option 2. A closure of the fishery.  
 Option 3. Management of fishing activity through a regulatory byelaw.

Option 3 is the preferred option which will promote sustainable fisheries and conserve the marine environment. The objectives are achievable through progressive introduction of management measures. Prior community engagement on elements of the management proposals and production of evidence base underpins measures and a regulatory byelaw.

<b>Will the policy be reviewed?</b> It will be reviewed. <b>If applicable, set review date:</b> 03/2020					
Does implementation go beyond minimum EU requirements?				No	
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.		<b>Micro</b> No	<b>&lt; 20</b> Yes/No	<b>Small</b> Yes	<b>Medium</b> No
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)				<b>Traded:</b>	
				<b>Non-traded:</b>	

*I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.*

Signed by the responsible SELECT SIGNATORY: \_\_\_\_\_ Date: \_\_\_\_\_

# Summary: Analysis & Evidence

# Policy Option 1

## Description:

### FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2013	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: £27M

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	£60k	£118K	£1.24M

#### Description and scale of key monetised costs by 'main affected groups'

The proposed cost of the permit is £100 per annum, with additional payment for permit holders for pot tags. Using an estimated up take figure of 150 permits the cost is estimated at £15,000 per annum. With additional administrative costs for the industry the total cost per annum is estimated at £450k.

Enforcement costs are estimated at £730k per annum.

#### Other key non-monetised costs by 'main affected groups'

The introduction of new practices and conditions on configuration of fishing gears will result in time cost in implementation but these are not considered substantial.

Enforcement cost efficiencies are expected to be made by carrying out multipurpose patrols, but these costs cannot be quantified as yet.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	£0	£500k	£3.18M

#### Description and scale of key monetised benefits by 'main affected groups'

Prevention of stock reduction and loss of resulting economic benefit - combined fishery is valued over £2.7M. With economic benefits from shellfish stocks increasing toward MSY conditions, relatively modest changes in stock condition could result in benefit exceeding £500K, e.g. modelling of effort reduction on lobster fisheries show significant improvements in potential recruitment.

#### Other key non-monetised benefits by 'main affected groups'

Increased catch per unit effort resulting in use of less capital to achieve greater output from the fishery.  
Reduction in fishing time for same catch  
Higher quality catch in respect to size and sustainability status.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5
That evidence and fisheries models are sufficient to reflect predicted outcomes.		

### BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:	In scope of OITO?	Measure qualifies as
Costs: £118k	No	NA
Benefits: £500k		
Net: £382		

# Evidence Base (for summary sheets)

## Introduction

Inshore Fisheries and Conservation Authorities (IFCAs) have been established as the lead regulator for the sustainable management of inshore fisheries. As such, Sussex IFCA is the most appropriate Authority to implement, manage and enforce fisheries management measures within 6 nautical miles.

IFCAs have a nationally agreed high level objective of completing a review of all legacy byelaws by April 2015. As a result of the review, some byelaws will be remade, some will be amended, others will be amalgamated and those that are irrelevant or no longer needed will be revoked.

Sussex IFCA believe that the review provides the opportunity to introduce a new approach to inshore fisheries and conservation management. Through permitting byelaws Sussex IFCA will introduce greater flexibility in the way it manages the coastal and estuarine waters in the district. The marine environment is a dynamic system, there is high natural variation in some fish and shellfish stocks and fishing gear technology and practices continue to evolve. Inherited byelaws have been identified as being too rigid to fit this ever changing situation. Those affected by the new legislation will be safeguarded by the creation of an open and inclusive management review system. The Byelaw describes the process by which changes to permit conditions will be made.

One of the outcomes delivered by the new proposed byelaw will be the ability of Sussex IFCA to collect detailed fishing data enabling it to understand more about potting in the district. Where good data is unavailable, the new Byelaw mitigates the risk of creating unintended consequences by having an extremely flexible approach to management.

## The Evidence for Shellfish Fishery management

The below information describes the environmental evidence that has informed the decision to manage the Sussex inshore shellfishery through the proposed byelaw. The evidence is presented by shellfishery type.

### Lobster

The Cefas Stock Status 2011 report details the state of the European lobster (*Homarus gammarus*) stock in the Southeast & South Coast;

<http://www.cefas.defra.gov.uk/media/580120/lobseter%20south%20east%20and%20south%20coast%202011.pdf>

It indicates that spawning biomass is at 50% target MSY and that fishing mortality is approximately twice the required level for MSY.

The status of the stock of lobster in the South East South Coast area is low; Spawning Stock Biomass levels are around the minimum recommended level, below which there is greater risk of reduced future recruitment. Exploitation level is moderate to high and around the maximum recommended level. Fishing effort would need to decrease significantly in order to fish at FMSY. The status of the stock has not changed since the last assessment in 2010.

Management needs identified in the Sussex SFC Sustainable Inshore Fisheries Assessment 'Navigating the Future'. The report identified weakness in the effort control management system to achieve sustainable fisheries in respect to FAO principles. Absence of any harvest control rule as achieved through management restrictions would fall short of IFCA core duties in respect to s153 MaCAA 2009.

The benefits to lobster stock and associated fishery were modelled from management measures on full exploited lobster fisheries by Dr. J Addison, Ex Head Shellfish Division Cefas. It was found that effort reduction figures and potential benefit in percentage egg production per recruit were likely, i.e. a 25% reduction in effort leads to a 58% increase in egg production, and a 10% reduction in effort leads to an 18% increase in egg production. The following table details the results.

Berried lobster ban data from Cefas advice (Julian Addison 2005)

<b>Management Measure</b>	<b>Percentage increase in egg production per recruit, Inshore fishery data</b>
<b>Berried ban</b>	113
<b>50% reduction in effort</b>	201
<b>25% reduction in effort</b>	58
<b>10% reduction in effort</b>	18

## Crab

For crab, the Cefas 20011 assessment tells us that the stock is approaching sustainable limits. A previous report from 2009 shows overexploitation and an increasing exploitation in our District.

Final Report: Future Management of Brown Crab in UK and Ireland, December 2009, prepared for: The UK & ROI Brown Crab Working Group by: Nautilus Consultants

'In the first instance the basis of management is broad recognition of the need to stop the continuing escalation in overall fishing effort for crab – the total number of pot days. On the one hand as long as no cap is put on effort, owners are encouraged to increase fishing capacity and the number of pots fished. On the other there is wide expectation across the industry that some form of effort cap will be put in place.

There is no clear rationale as to the level at which caps should be set. Information from the monitoring of stock condition does not provide clear guidance on this, primarily because insufficient data are available on which to base rigorous assessment, but also because assessing stock condition in crabs is particularly difficult.

One logical approach would be first to cap effort at current levels – but there is not as yet clear nomination of the number of pots being fished by each vessel (though there is disclosure by some elements of the fleet as part of normal catch reporting procedures – mainly those fishing inshore waters - and regulations do allow for the capture of pot number data, but this option is not widely applied).

On the basis of the above, there are a number of areas where immediate action is required to move the management of the crab fishery, and capping of fishing effort, forward.

The first is for industry and government to reach broad agreement on how the sector is to be managed.

To provide for the development of more specific proposals as to how pot limits and landing limits can be allocated across the fleet, further analysis of brown crab fleet métiers needs to be undertaken. Defra holds the relevant data-sets for such analysis for the UK. The Irish Sea Fisheries Protection Authority holds such data-sets for Ireland.

It will also be necessary to give further consideration to the impact of any of the proposed management changes on those vessels that currently target lobster, whelks, nephrops, and velvet crab – where in some if not most cases they will retain at least some entitlement to switch effort onto brown crab at any time in the future should they so wish. In most cases this can probably be addressed through local inshore management regimes, but this needs to be thought through carefully.

Pot limits, per vessel, should be established based on the outcome of the further analysis of fleet métiers described above.

## Whelk

The exploitation of whelks has largely developed since the mid 90's as market demand from South East Asia stimulated an expansion in the fishery throughout the UK. Within Sussex inshore waters there has been a rapid increase in fishing effort throughout this period and notably since 2000.

In summary Annual UK Fisheries Statistics on major ports in Sussex shown landings of whelk for 2013 at 2,261MT and subsequent downward trend in landings from a peak in 2007 of approx. 3,500MT.

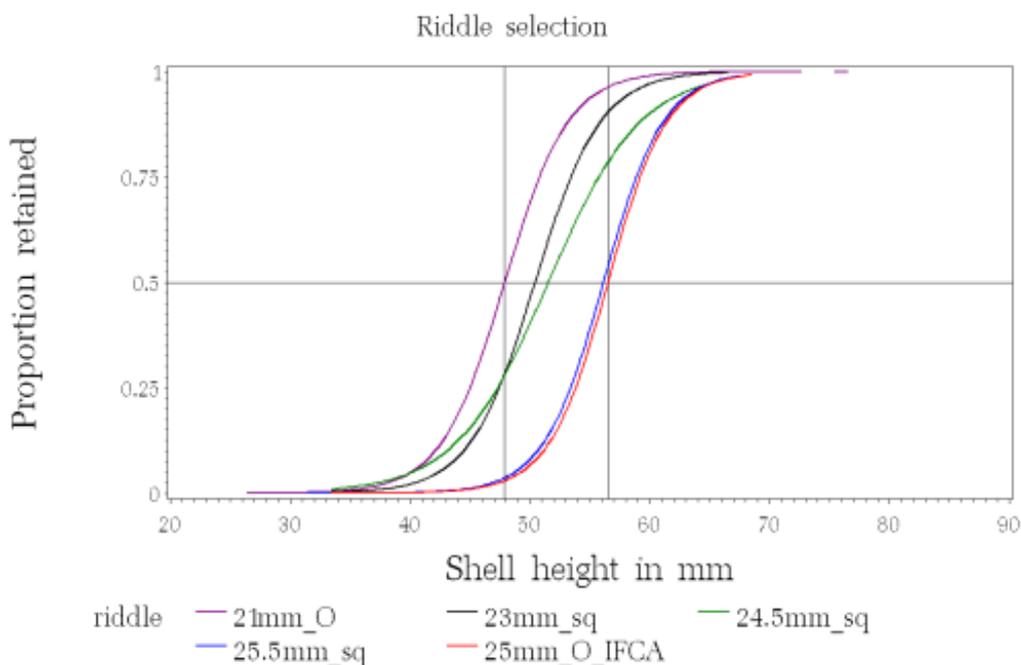
Furthermore the whelks are increasingly associated with offshore grounds and depletion of inshore stocks. The reproductive biology of whelks does not enable large recovery of year classes following successful spawning as found with broadcast spawning bivalves such as mussels. Whelks are far less fecund and juveniles remain local to egg masses that are laid on sea bed features. The gastropod is vulnerable and considered to be subject to localised over fishing in Sussex IFCA District. Exploitation patterns show two key features that reflect unsustainable levels of fishing within the District. The CPUE has declined and resulted in increased effort to compensate the reduction. The fisheries have moved increasingly seaward to exploit new fishing grounds and populations.

The proposed management measures are intended to introduce a cap and ability to introduce effort control within the fishery. As with lobster pot limitation the impact of effort control will be monitored against CPUE to identify any trends to inform future management. The Authority is aware the number of whelk pots is growing into new offshore fisheries and future displacement inshore needs to be recognised. The basis upon which it is proposed to limit the number of pots is:

1. Data on landing figures in Sussex and associated effort and CPUE figures.
2. Cefas and Sussex SFC/IFCA fisheries science partnership study in 2009/10

In their 2010 report on whelk biology, Andy Lawler and Belinda Vause (Cefas, Lowestoft and Sussex Sea Fisheries Committee (SFC)) examined two inshore fisheries within the Sussex IFCA District off Selsey and Eastbourne the whelk fisheries were characterised by heavy fishing activity over the past decade. The populations exhibited some variation in size of maturity and both demonstrated that the MLS of 45mm for whelk is well below the size at which 50% are mature. The size of maturity of whelks from the Eastbourne fishery is approximately 56mm shell height for both sexes. The SOM for male and female whelks from the Selsey fishery were estimated to be 60 and 58mm

To achieve approximately 50% fishing mortality at these sizes all vessels engaged in whelk fishing will be required to carry a riddle with a 25mm bar gap. All whelks that pass through the gap shall be returned to the sea.



Riddle size and whelk retention relationship (Cefas, A. Lawler)

The full report can be viewed at;

<http://www.cefas.defra.gov.uk/media/358431/whelkfspfinalreport.pdf>

## Cuttlefish

Management needs were identified in the Sussex SFC Sustainable Inshore Fisheries Assessment 'Navigating the Future'. The report identified weakness in the effort control management system to achieve sustainable fisheries in respect to FAO principles. Absence of any harvest control rule as achieved through management restrictions would fall short of IFCA core duties in respect to s153 MaCAA 2009.

Stock status was described by Carleton et. al. in 2009. They stated that there is no formal stock assessment, and limited management in the Sussex cuttlefish fishery. Although there is licensing and reporting requirements, there is no TAC, no minimum landing size and few directly applicable gear restrictions. There are EU technical measures related to towed and fixed net fishing for this species, this includes restrictions on mesh size ranges and on the catch percentage applicable to the use of a single mesh size range. In addition, the Fishing Instrument byelaw states that fishing is only permissible if it is conducted by a method which is specified in the byelaw. There is no restriction on the number of cuttlefish pots which can be used when targeting the species with static gear.

There are particular issues with regard to this species, such as potting activity generally occurring in inshore areas during the breeding season, and the need for alternative measures to prevent the females from laying eggs on the traps, and these being damaged (thus affecting recruitment to the fishery in the long term) as traps are hauled and emptied.

## Community Engagement

### Whelk Summit

Individuals associated with the whelk fishery throughout the District were invited to attend a Whelk Summit which was held in Shoreham-by-Sea on 2nd December 2008. The attendees included; 12 whelk fishermen, 3 merchants, 3 Sussex sea fishery officers, 2 CEFAS scientists, the Deputy Director of the Shellfish Association of Great Britain (SAGB), the Southeast facilitator for the European Fisheries Fund (EFF) and the Deputy Chairman of the Sussex Sea Fisheries Committee. The meeting was introduced by the Chief Fishery Officer Mr Tim Dapling which was shortly followed by two presentations from the guest CEFAS scientists. Dr Peter Walker gave the first presentation on 'Whelk Biology: their reproduction, growth and feeding behaviour' (see appendix 1) followed by Mr Phillip Whelpdale who presented on 'Whelk fisheries in England and Wales: National landing records and current management methods in England and Wales' (appendix 2). Following this the Senior Fishery Officer gave a brief synopsis of the information available on the Sussex whelk fishery and the measures the Committee uses to regulate the fishery (appendix 3). Discussions and questions during this period of the meeting largely concerned the biological aspects of the fishery, its sustainability and application of existing management measures. Of particular note was the scale of whelk fisheries in the England and the Sussex area and their economic significance to inshore fisheries when compared with many commercial finfish species. The meeting then moved into a workshop period. The attendees divided into three equal sized groups to allow everyone the opportunity to contribute to a discussion on three core topics. All factors discussed were listed under the relevant topic and at the end the groups were asked to identify which factors they considered to be the key issues. The results were as follows:

#### 1. What? Are there problems in the whelk fishery? If so, what are they?

- There is inadequate scientific data in two areas; the biology of the local whelks and inaccuracies in the catch/landing information which the 'decision makers' rely upon.
- There has been increased fishing effort on whelks because of displacement and profitability. In part this has occurred due to the increasing restrictions on other fisheries (i.e. TAC's) and limited profitable fishing opportunities.
- There has been a decline in whelk stocks in some areas of the district (reflected in reduced catch per unit effort) in some instances this has resulted in vessels being sold as they did not deem it profitable enough.
- Lack of compliance to the MLS was thought to be an issue by some operators. One particular concern was about vessels that fish within but land outside the Committee's District retaining and landing undersize whelks.

## 2. Why? Why do these problems exist?

- There is insufficient investment in shellfish research and monitoring. In particular whelks do not seem to be considered a priority area for UK or EU fisheries research.
- In the areas where a decline in catches was reported the cause was thought to be an overall increase in fishing effort. This results in a further increase in fishing effort i.e. more pots per boat to enable the vessels to catch the same amount as before, thus further increasing the fishing pressure on the stock.
- The current programmes that monitor the extent of the whelk fishery are inadequate (whelk fisheries are not included within the presentation national shellfish licensing scheme).
- There is insufficient access to pressure stock species due to the present quota management regime, this leads to greater effort on less regulated fisheries such as whelks.
- There is not enough enforcement to ensure full compliance.

## 3. How? How can the Committee provide solutions?

- A formal request from the Committee to DEFRA/CEFAS to conduct more scientific research on English and local whelk fisheries and suggestions that the Committee could assist CEFAS where possible through the provision of vessels and officers.
- Raise the data deficiency issue with SAGB who constantly try to encourage further science investment in shellfish research; the SAGB's 'Mollusc Committee' could be a suitable forum to raise the matter.
- Higher finfish TAC's for the inshore sector in other fisheries would reduce the pressure on the whelk fishery (note: this is beyond the powers of the Committee, however the Committee did respond in detail to DEFRA on the recent 2008 under 10 metre consultation process and emphasised the importance of TAC species to the sector and the potential impact of effort on non TAC stocks).
- Amend regulations to require all whelk fishing vessels to carry and use a riddle.
- Increase enforcement and develop a multi-agency approach to ensure full compliance on the south coast.
- Increase the MLS/riddle size.

## Review of Management by the Authority

The Sussex IFCA Authority approved a strategy for reviewing management under common themes that ran parallel with the byelaw review. And also the development of management options in respect to one of those themes (shellfish) that included a draft shellfish permit byelaw. The Technical Subcommittee was provided with and subsequently approved a draft Shellfish Permit Byelaw that included explanatory notes, a series of questions and the opportunity for comments and a poster designed to promote an informal public consultation process (please refer to Appendix one for the draft Shellfish Permit Byelaw and Appendix two for the poster). An informal consultation period commenced from 19 June 2014 to 18 July 2014 that included;

- Three public meetings
- Information on the Authority website
- Leaflet drops and posters in all angling shops, clubs, ports etc
- Notification to angling clubs, fisherman societies, individual commercial fishermen and key stakeholders
- Social and viral media (Facebook, twitter)

Three consultation meetings were conducted along the Sussex coastline focusing on persons with a particular fisheries interest and designed to be informal drop in sessions. A 'rolling' introductory presentation, various displays and a number of committee members and officers were present to encourage attendees to discuss their views and collate feedback on our draft shellfish permit byelaw. Feedback was collated by way of comments sheet that contained each heading of the draft byelaw and a

series of questions. Another option was downloading the draft permit byelaw and explanatory notes from the website and forwarding comments back to the Authority for persons unable to make the meetings. 33 stakeholders in total attended the meetings.

A total of 22 people have provided comments/feedback to the Authority either by the comments sheet, feedback on the draft byelaw document itself or by email/letter. The following tables demonstrate a summary of that feedback that can be used to discuss and progress this theme management at the next technical subcommittee meeting. All comments sheets and feedback are available for future reference.

The following table demonstrates the most positive feedback comments.

Q3 escape hatch	15	13	1		Majority support plus enforcement of 300 pots inside 3nm, one no but wants biodegradable latches
Q8 maximum size dahns/buoys	13	13			Various sizes according to tides from 4 to 4ft dhans, 8" or 9" trawl key, 20-30lt cans, A1 30" buoy
Q5 25mm riddle gap	17	12	1	3	Unanimous agreement but 3 thought 22-23mm also if 25mm alongside 22mm escape holes I n0 – cannot riddle for length and disproved whelk breed at 58mm, round bar
Q1 riddle dimension	11	11			No negatives - 22-25mm spacing, variable size, 18"x30" or 2ft x 1ft >7m funnelled straight through to sea
Q4 selectivity for whelk escape holes	14	9		4	Most agreed, varying placement and size of holes, n/a holes don't make a difference
Q15 Pot limitation related to vessel capacity/size/power	15	7	8		7 yes all large cats outside 3nm, 500 pots per boat 300 pots inside 1nm 300 1-6 cap of 600 same As current 3nm max 300 over 12 mts inside limit, limit pots whelk inside 3nm to 300 8 no should be same/especially small boats/no but limit inside 3
Q6 cuttle traps no removal of eggs	17	6	8	3	Most disagree, cuttle won't enter, not practicable with trawlers, gear loss and damage, 1 ban cuttle traps, left out until 1/9
Q10 min/max size on permit	10	5	3	2	5 yes increase lobster 90mm max 120mm max size for lobster/crab and whelks same size outside 6nm raise size lobster/crab 3 no Happy with current MLS/no/none fisherman care about future needs 2 n/a needs explaining min not max no spiders caught in nets
14 Commercial	9	5	3	1	5 yes 1 unworkable if work outside 6nm, self-managed, no if whelk sized increased then not needed, ridiculous
2.1 a) v notched	6	5	1		5 agreed, one practising for 2 yrs, 1 not necessary
Q9 renewal of permits	6	5		1	Varying from 1-2 to 5yrs like licence, 1n/a why do have to renew on a commercial vessel
Q2 comments on listed prohibitions	7	4		3	Agree, wants spiders crabs used, why throw away crabs in nets, berried and v notch agree
Fees	7	4	3		4 yes – if moderate, cheap as possible, 150 -170 tags inclusive, £100 for cat two and £10 tag 3 no's – too many expenses already/not necessary already paid for bait licences
Revocation	6	4	1	1	4 ok 1 no unnecessary as fisherman look after the stocks/not sure?
2.1 b) berried hens	5	4	1		4 totally support, 1 no (with no explanation)
6 Recreational boat and bags limits	5	4	1		i,ii and iii all ok 1 no – too high should 5 lobster and 10 crab per week
Other comments	5	4	1		4 ok, durable plastic card or wheelhouse sticker 1 no not necessary we pay for licence
7 Recreational storage	4	4			All yes
12 Marking of gear	4	4			3 ok but difficult to enforce 1 mark with permit number
Spatial Restrictions Q17 would you trial spatial closed areas	11	3	7	1	2 yes – agree in principle small localised breeding areas 7 no's – displacement, lead trawlers full access, not good management just check number of pots fished, needs open discussion
Other comments	4	3		1	Good idea/correspond to registration 5 yrs or transfer/agree 1yr rec/hope issued fairly and pot limitation 1n/a not sure don't close anymore
3.4 riddling whelks	3	3			22mm agree riddle certain size

The following table table demonstrates the most negative feedback comments.

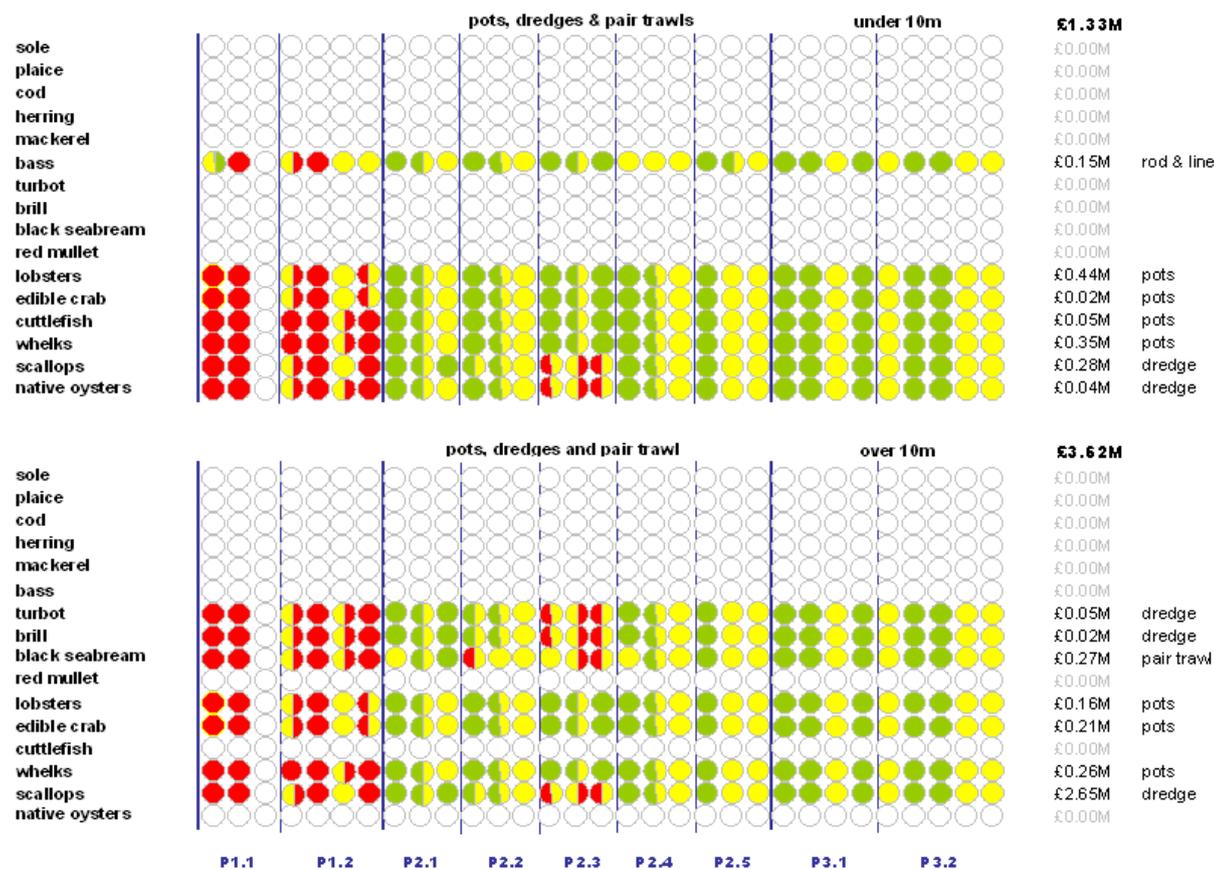
Q16 categorised pot/trap dimension	11	2	9		majority no Yes based on volume/whatever people want 8 no's financially crippling to standardise etc
Q6 cuttle traps no removal of eggs	17	6	8	3	Most disagree, cuttle won't enter, not practicable with trawlers, gear loss and damage, 1 ban cuttle traps, left out until 1/9
Q15 Pot limitation related to vessel capacity/size/power	15	7	8		7 yes all large cats outside 3nm, 500 pots per boat 300 pots inside 1nm 300 1-6 cap of 600 same As current 3nm max 300 over 12 mts inside limit, limit pots whelk inside 3nm to 300 8 no should be same/especially small boats/no but limit inside 3
Spatial Restrictions Q17 would you trial spatial closed areas	11	3	7	1	2 yes – agree in principle small localised breeding areas 7 no's – displacement, lead trawlers full access, not good management just check number of pots fished, needs open discussion
Q7 do you agree bait restrictions on crab etc	13	2	4	7	No need, don't include flounder, happy with frozen crab, fresh huss, mackerel dogs must, don't agree have to break claws when caught in net, keep spiders as bait, no comment
2.1 c) parts of crab/lobster	5		4	1	4 no, contradicts EU, broken crabs in nets, 1 fully understands why but what about claws already entangled
Q10 min/max size on permit	10	5	3	2	5 yes increase lobster 90mm max 120mm max size for lobster/crab and whelks same size outside 6nm raise size lobster/crab 3 no Happy with current MLS/no/none fisherman care about future needs 2 n/a needs explaining min not max no spiders caught in nets
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Fees	7	4	3		4 yes – if moderate, cheap as possible, 150 -170 tags inclusive, £100 for cat two and £10 tag 3 no's – too many expenses already/not necessary already paid for bait licences
39 iVMS	4	1	3		1 yes but whom paying? 3 nowhere on small vessel/if laws for <12m then wary of legislation
34 Hauled relevant to permit	3		3		Ambiguous/dual owner issues with need to pull pots for each boat/take to sea fisherman who has broken down to pull pots
26 Fee	4	1	2	1	1 provided modest, 2 no small boats <8m exempt, more realistic cost of £200 could double with loss of tags, in/a cat two should cost more
3.3 escape hole whelk	3	1	2		1 already use, other as above unintended consequences
4.1 bait restriction edible crab etc	3	1	2		Yes in theory or re-wording to stop the use of locally caught u/s crabs
15 Recreational	3	1	2		1 agree 1 what about larger boats landing into Sussex 1 never agree
13 Lash and stowed	2		2		Can't lash on small and ridiculous
Permit in principle	2		2		Both consider money making scheme/ threat to take away or attempt to reduce burden of proof. Fisherman could loose right to fish for other species if removed for example for a whelk infringement. Should legislate for each fishery individually. Argued IFCA could gain vital landing info and effort data, could be just as effectively gathered from logbook and VMS for >12m

## Navigating the Future, Developing Sustainable Inshore Fisheries

According to the 2010 'Navigating the Future' report, all static gears deployed within the Sussex IFCA area are expected to pass the overall standard of "good practice". But such a pass would also be expected to carry conditions applying to each fishery – where current practice falls short of "good practice" at the level of Performance Indicator. In general, static gears are benign in their impacts on the marine environment. Retained bycatch and discards species mix and levels are expected to be within the realms of what is reasonable, and habitat and ecosystem impacts are minimal. But where practice is considered to fall short of expectation is in the active demonstration of what the levels of impact are, and what strategies are applied to minimise or reduce such impact. Such information is not routinely collected or analysed, and little to no effort is made to put in place mitigation strategies. This simply

indicates that the systems to manage environmental impacts of fishing are weak, and efforts need to be significantly strengthened. So saying, however, much work has been undertaken in examining the impacts of fishing on the marine environment, but maybe not in the Sussex IFCA area

Fig 1 - Indicative pre-assessment scoring ranges of single gear fisheries in the Sussex SFC area.



In undertaking pre-assessment of the fisheries, three main areas of management were identified as needing attention:

### 1, Stock management

Most effort would be needed to collect and collate the information necessary to undertake simple assessments of each of the stocks being fished (international stock assessments are already undertaken for sole, plaice, cod, herring and mackerel, and also for turbot and brill, but their main focus is on North Sea stocks and stocks in the English Channel / Western Approaches – the extent to which these are likely to meet the requirements of local Sussex SFC MSC assessments needs to be carefully re-examined);

### 2, Management of environmental impacts

Further effort is needed to monitor and manage environmental impacts. Some information is available on bycatch and discards but it is not sufficient or routinely used for management purposes. There is a wealth of information available on the marine environment in the SFC area, but it is not drawn together as a coherent whole, nor is it routinely used as a management tool;

### 3, Fishery management

There remain some fundamental structural weaknesses and inconsistencies in responsibilities for management of the region’s fisheries. Policy, plans and monitoring of fishing outputs remain with central government, whilst monitoring of (most but not all) technical measures and environmental impacts of fishing (and other activities) are managed at the local level. Management by central government relies on large-area legal instruments that take many years to modify; management by SFC relies on local byelaws which also take time to modify – neither of these systems are particularly attuned to adaptive management at a local level.

In turn, these findings prompt three high level strategic issues:

1, To what extent is it sensible to contemplate undertaking stock modelling and management at the level of a single SFC (we know it is inappropriate for some, and we know it is achievable for others, but there

are some species for which the answer is less clear)? This has a fundamental bearing on how to approach Principle 1 issues.

2, There is a wealth of environmental (and particularly spatial) data available for the Sussex SFC district, but it comes from a wide diversity of origins (different institutions, different funding mechanisms, different purposes). As a result, using and interpreting these data beyond their original purpose can, in their current form, be problematic. In addition, there is current focus on the increased use of zonal systems for the management of the marine environment (including fisheries) through a mosaic of fisheries and marine conservation areas – which are likely to incorporate the increased use of vessel tracking technologies. It therefore makes sense, leading to a multitude of benefits, to draw together all currently available information within a single GIS (Geographical Information System) integrated with catch position and landings data sets (not currently collected or routinely used by the SFC).

### 3, Strengthening management of Sussex fisheries

With the then remodelling of the SFCs as IFCA (Inshore Fisheries and Conservation Authorities), and the incorporation of increased responsibilities for environmental monitoring and management, it is now the time to clearly establish how the IFCA can fully participate in the management of the fisheries under their jurisdiction using an “adaptive fishery management regime” (linking management decisions to knowledge of the status of the particular stock under management). Improvements suggested are:

- 1, The setting of long-term and fishery specific management.
- 2, The structure and operation of decision-making systems (outstanding issues relate to clear and transparent allocation of responsibilities between national and regional structures, integration of fishery management responsibilities, and tightening up of co-management systems)
- 3, The establishment of monitoring and evaluation systems to assess and re-assess the fishery management plans and systems against long-term and fishery specific management objectives.

### Rationale for intervention

With the above in mind we can move to a forward look. IFCA have duties to ensure that fish stocks are exploited in a sustainable manner, and that any impacts from that exploitation in the marine environment, particular where protected by designation, are reduced or suitably mitigated, by implementing appropriate management measures (e.g. this Byelaw). Implementing this Byelaw will help ensure that fishing activities are conducted in a sustainable manner and that the marine environment is suitably protected.

Fishing activities can potentially cause negative outcomes as a result of ‘market failures’. These failures can be described as:

Public goods and services – A number of goods and services provided by the marine environment such as biological diversity are ‘public goods’ (no-one can be excluded from benefiting from them, but use of the goods does not diminish the goods being available to others). The characteristics of public goods, being available to all but belonging to no-one, mean that individuals do not necessarily have an incentive to voluntarily ensure the continued existence of these goods which can lead to under-protection/provision. Sussex IFCA must seek to ensure that the exploitation of sea fisheries resources is carried out in a sustainable way.

Negative externalities – Negative externalities occur when the cost of damage to the marine environment is not fully borne by the users causing the damage. In many cases no monetary value is attached to the goods and services provided by the marine environment and this can lead to more damage occurring than would occur if the users had to pay the price of damage. Even for those marine harvestable goods that are traded (such as wild fish), market prices often do not reflect the full economic cost of the exploitation or of any damage caused to the environment by that exploitation.

Sussex IFCA must 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 the recovery from, the effect of such exploitation.

Common goods - A number of goods and services provided by the marine environment such as populations of wild fish are ‘common goods’ (no-one can be excluded from benefiting from those goods however consumption of the goods does diminish that available to others). The characteristics of common goods mean that individuals do not necessarily have an individual economic incentive to ensure

the long term existence of these goods which can lead, in fisheries terms, to potential overfishing. Furthermore, it is in the interest of each individual to catch as much as possible as quickly as possible so that competitors do not take all the benefits. This can lead to an inefficient amount of effort and unsustainable exploitation.

Sussex IFCA must seek to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district

In summary, the management process aims to redress these sources of market failure in the marine environment through the following:

- Management measures designed to conserve designated features of EMSs and MCZs will ensure negative externalities are reduced or suitably mitigated.
- Management measures will support continued existence of public goods in the marine environment, by restricting the catch taken.
- Management measures will also support continued existence of common goods in the marine environment by reflecting the needs of the commercial and recreational sectors.

### Policy Objectives and intended effects

The policy objectives pertinent to this byelaw are as follows:

- To move towards a Maximum Sustainable Yield for the key Sussex shellfish caught by pots and traps.
- To promote sustainable fisheries while conserving the marine environment.
- To prevent further over exploitation of the fishery.
- To enable a flexible approach to the management of the fisheries using an adaptive management method based on sound evidence.

The proposed byelaw continues the process by which the Authority intends to replace all its inherited byelaws with activity based byelaws where possible. The introduction of the Byelaw's permit conditions will enable Sussex IFCA to flexibly manage fishing activity using a number of the measures summarised below;

- catch restrictions,
- gear restrictions and design,
- spatial restrictions,
- time restriction.

The Byelaw creates a localised system of management by which those affected (permit holders) have a real opportunity to participate in continuing management decision making process. Permit holders will be contacted directly and provided with the information that underpins the proposed changes to permit conditions. Permit holders will be invited to comment on and suggest alternatives to the management proposals. This helps the permit holders to understand the reasons for the proposed changes and allows the permit holders to express their opinions more freely than is sometimes possible in public meetings. Sussex IFCA in turn is better informed and improves its decision making. Continued engagement with stakeholders reduces the likelihood that emergency measures (byelaw/ Statutory Instrument) need to be used to deal with unforeseen issues.

All the local restrictions applicable can be found in one document. Permit conditions can be more readily translated into plain English helping the fisher to understand more easily fisheries legislation that is inherently complicated.

The Byelaw is designed to accommodate future management needs therefore reducing the cost associated with developing new legislation to deal with emerging issues.

In future Sussex IFCA will be able to effectively capture relevant data to better inform its decision making through permit conditions.

## Calculation on monetised costs

The following table shows how we have attempted to define the monetised costs. The calculations relate to the criteria set out in the Impact Assessment template.

All calculations (except transition costs) for a 10 year period

	transition cost			Average annual (x10)			total		
	low	high	best estimate	low	high	best estimate	low	high	best estimate
fisher time admin	20000	120000	30000	100000	600000	300000	120000	720000	330000
IFCA time admin	7500	15000	30000	75000	300000	150000	82500	315000	180000
IFCA enforcement FTE	0	0	0	75000	600000	300000	75000	600000	300000
IFCA enforcement boat	0	0	0	100000	3000000	280000	100000	3000000	280000
cost of permit	0	0	0	50000	1500000	150000	50000	1500000	150000
	<b>27500</b>	<b>135000</b>	<b>60000</b>	<b>400000</b>	<b>6000000</b>	<b>1180000</b>	<b>427500</b>	<b>6135000</b>	<b>1240000</b>
<b>TOTALS</b>									

transition				average				annual permit unit cost £			
calculations low	day rate £	days required	total £	calculations low	day rate £	days required	total £	annual permit unit cost £	50	100	500
fisher time admin	100	200	20000	fisher time admin	100	100	100000	number of permits			
IFCA time admin	150	50	7500	IFCA time admin	150	50	75000	100	5000	10000	50000
IFCA enforcement FTE	150	0	0	IFCA enforcement FTE	150	50	75000	150	7500	15000	75000
IFCA enforcement boat	500	0	0	IFCA enforcement boat	500	20	100000	300	15000	30000	150000

calculations high				calculations high			
calculations high	day rate £	days required	total £	calculations high	day rate £	days required	total £
fisher time admin	100	1200	120000	fisher time admin	100	600	600000
IFCA time admin	150	100	15000	IFCA time admin	150	200	300000
IFCA enforcement FTE	150	0	0	IFCA enforcement FTE	150	400	600000
IFCA enforcement boat	2000	0	0	IFCA enforcement boat	2000	150	3000000

calculations best				calculations best			
calculations best	day rate £	days required	total £	calculations best	day rate £	days required	total £
fisher time admin	100	300	30000	fisher time admin	100	300	300000
IFCA time admin	150	200	30000	IFCA time admin	150	100	150000
IFCA enforcement FTE	150	0	0	IFCA enforcement FTE	150	200	300000
IFCA enforcement boat	700	0	0	IFCA enforcement boat	700	40	280000

## Landing statistics

Indicative figures on the scale and value of shellfish landings into major Sussex ports are given below. The figures include catches taken from outside the six mile boundary in ICES rectangles 30F0 and 30E9 and will not show a true picture of what is caught inside of six, therefore the figures are likely to be greater than that actually taken from the Sussex IFCA waters.

UK fleet landings 2014, tonnes in ICES rectangles 30E9 and 30F0						
Species	Tonnes			£000s		
	30E9	30F0	Total	30E9	30F0	Total
<b>Crabs</b>	119.7	199.7	<b>319.4</b>	168.4	227.2	<b>395.6</b>
<b>Cuttlefish</b>	107.6	75.6	<b>183.1</b>	208.8	153.4	<b>362.1</b>
<b>Lobsters</b>	50.7	19.0	<b>69.6</b>	472.2	181.6	<b>653.9</b>
<b>Whelks</b>	1705.2	1820.0	<b>3525.2</b>	1466.2	1728.0	<b>3194.2</b>
<b>Total</b>	<b>1983.2</b>	<b>2114.2</b>	<b>4097.3</b>	<b>2315.5</b>	<b>2290.3</b>	<b>4605.8</b>

Figures from Marine Management Organisation

## The Proposed Shellfish Permit Byelaw

We can now go on to describe some detail of the proposed elements of the permit in respect to fees and flexible conditions. For purpose of clarity relevant provisions of the proposed byelaw that enable both charging of permit fees for commercial and recreational activity and the specified flexible conditions are summarised with associated proposed information. The below should be read in conjunction with the byelaw text itself. Numbering of items relates to the byelaw numbering system.

The new Sussex IFCA Shellfish Byelaw contains provisions concerning both flexible conditions and charging of fees for commercial and recreational access to the shellfish stocks within the Sussex IFCA District. This information has been summarised and should be read with reference to both the full byelaw text and associated impact assessment.

The following information takes the form of summary points which relate to relevant part of byelaw. To help reference purposes paragraph numbering (underlined) reflects each part of the full byelaw text.

## **Permit Fees**

### **Commercial Permits**

20. A fee for a Commercial Permit and tags is payable on application.

- Proposed fee for permit issued for a period of two years £200
- Cost of tags issued up to maximum permitted number 15p/tag

21. A fee is payable for the replacement of lost or destroyed permits, certificate discs and tags.

- Replacement Permit £10
- Replacement Disc £10
- Replacement tags, fixed administration charge £3
- Replacement tags 15p/unit

A tag allocation of 20% above the maximum limit (if applicable) will be retained by the Authority for anticipated requirements to replace lost tags. Large scale tag loss may result in the reissuing of a full tag allocation. A clear policy and process in regard to the application, assessment and replacement of lost tags will be established provided to permit holders.

Those permit holders who do not hold the maximum limit can apply for additional tags at standard price per unit.

### **Recreational Permits**

28. A fee for a Recreational Permit and tags is payable on application.

Proposed fee for permit issued for a period of one year £10

No charge will be made for initial tags issued

**A permitted maximum number of the following types of pots can be used:**

5 crab/lobster  
5 whelk  
5 prawn  
2 cuttlefish

29. A fee is payable for the replacement of lost or destroyed permits and tags.

- Replacement Permit £5

- Replacement tags, fixed administration charge £2
- Replacement tags 15p/unit

Cost recovery for specific administration services is an adopted principle for local government. It is therefore necessary for the IFCA to achieve cost recovery for both the administration and any items issued to permit holders. Full cost recovery on all aspects of shellfish management is not proposed. Fees are intended to support the following activities:

### **Administration**

- Reviewing applications for a shellfish permit
- Issuing of commercial and recreational permits to applicants
- Handling of catch and effort data required by the Authority (this may include the submission of returns as hard copy or online)
- Provision of permit holders with summary data on their return information and the collated report for the entire fishery.
- Ensuring correct information is received in accordance with permit conditions
- Development and management of appropriate database
- Development and management of online systems

### **Shellfish Permit equipment issued to holders**

- Pot Tags
- Permit Disc
- Lobster/Crab and Whelk Gauge/s

### **Costs not associated with permit fees include:**

- Shellfish research
- Compliance monitoring
- Development and review of byelaw

### **Permit Conditions**

Permit conditions are defined as:

- **General Permit Conditions:**

That apply to both commercial and recreational permit holders

- **Commercial Permit Conditions:**

That apply to commercial Permit holders only

- **Recreational Permit Conditions:**

That apply to recreational permit holders only

All of the above conditions are intended to be long term measures that would require an amendment to the byelaw to be removed or modified.

- **Flexible Permit Conditions**

As implied by the term 'flexible' these conditions are not necessarily defined for the long term. As flexible conditions they enable the Authority to implement adaptive management in response to the status of the stocks and associated fisheries.

An example is the intended approach toward managing the amount of fishing effort in shellfish fisheries by means of a limitation on maximum pot numbers. Pot limits will be periodically reviewed against the status of the stock and trends in key indicators such as catch per unit effort.

The Authority will be seeking to achieve a stock biomass at or approaching a level at which maximum sustainable yield (MSY) for the inshore fishery is achieved. Maximum economic yield (MEY) targets can be achieved at a lower stock biomass approaching MSY.

22. A Commercial permit is subject to:

- (a) the general permit conditions in paragraphs 31 to 41;

In addition to the following information reference can be made to the full byelaw text and associated impact assessment for details of general permit conditions

- (b) the Commercial Permit conditions in paragraphs 42 to 44; and

In addition to the following information reference can be made to the full byelaw text and associated impact assessment for details of general permit conditions

- (c) any flexible permit conditions attached to the permit in accordance with paragraphs 46 to 48.

30. A Recreational Permit is subject to:

- a. the general permit conditions in paragraphs 31 to 41;

- b. the Recreational Permit conditions in paragraph 45; and
- c. any flexible permit conditions attached to the permit in accordance with paragraphs 46 to 48.

### **General Permit Conditions**

- 31. The permit holder must not fish for crab or lobster using a pot which has a chamber with an entrance designed to restrict escape, unless the pot is fitted with an escape gap located in the exterior wall of the pot or (in the case of a multiple chambered pot) an escape gap located in the exterior wall of each individual chamber.
- 32. The escape gap referred to in paragraph 31 must be of sufficient size so that a rigid box shaped gauge 80 millimetres wide by 46 millimetres high and 100 millimetres long may be passed through the gap.

Escape hatches have been used on a voluntary basis in Sussex District for several years. The Sussex SFC/IFCA secured project support and have issued free escape hatches to pot fishermen throughout the District who wished to fit them. The initiative was received with considerable support and good uptake meaning that many pots are already fitted with escape hatches.

Estimated cost per unit to fishermen direct from manufacturer is 37p (ex. vat) maximum cost to fisher assuming none already fitted £166.50 for 450 pots with single chamber (escape hatch life exceeds that of the pot).

The Authority will explore the opportunity to reduce costs to fishermen through bulk ordering and direct allocation with pot tags.

- 33. The permit holder must not use a pot to fish for whelk unless the pot is fitted with the specified number of escape holes.

A minimum of 4 holes are proposed - as the number of holes are 'specified' the number can be changed to reflect future needs.

- 34. The escape holes referred to in paragraph 33 must:
  - a. be positioned at least 150mm from the inside base of the pot or no more than 50mm from the top of the pot;

The position of the hole ensures the whelks come into contact with escape holes

- b. be of a size that a cylindrical bar of the specified diameter will pass freely through the hole;

The proposed diameter of cylindrical bar is 25mm - as the 'specified' diameter of the bar is a 'flexible measure' this can be changed to reflect future needs.

For rationale refer to the evidence reflecting size of maturity for 50% of population and selectivity for whelk riddle

c. not be obstructed

Intentional blocking escape hatches is an offence

35. The permit holder must pass all whelks removed from the fishery over or through a riddle which has sufficient space between bars so that a gauge of a specified size will pass through; and a whelk which passes through the bars of the riddle, or which is of a size below the minimum size for whelks as contained in provisions within European or national legislation must be returned immediately to the sea.

Proposed gauge width is 25mm which corresponds with the selective 'escape holes' - as the 'specified' gauge size is a 'flexible measure' this can be changed to reflect future needs.

#### **Flexible Permit Conditions**

49. The Authority may introduce, remove or vary a flexible permit condition which falls within one or more of the following categories:

(a) Catch restrictions;

**No restrictions are proposed on the quantity of shellfish that may be removed by commercial permit holders.**

The approach the Sussex IFCA has adopted toward shellfish management through the Shellfish Permit Byelaw is to the application of input controls (i.e. effort management and technical measures), as opposed to output controls (catch quota type systems). The strategy intends to address both existing recruitment and growth of over fishing in shellfish fisheries notably for whelk and lobster.

(b) Bait restrictions:

**No bait restrictions are proposed at this time**

(c) Gear restrictions:

Paragraphs 34, 35 and 36 contain specified measures which are considered flexible. See references in the general conditions referring to:

Number of escape holes – 4 specified

The proposed diameter of bar to measure escape holes - 25mm specified

Proposed gauge width to measure riddle bar gap – 25mm

**Pot limitation proposed**

## **Commercial Permit Holders**

### **Lobster and Crab Pots**

The Authority terms a lobster and crab pot as a single type irrespective of whether it is none parlour, single or double 'parlour' or 'inkwell' in design.

Proposed limit:

Within 3 nautical mile limit - retention of the pre-existing 300 pot limit.

Within 6 nautical mile - a maximum of 600 pots

### **Whelk Pots**

Proposed limit:

Within 3 nautical mile limit – a maximum of 300 pots

Within 6 nautical mile - a maximum of 600 pots

### **Cuttlefish Pots**

Proposed Limit

Within 6 nautical mile - a maximum of 300 pots

The proposed management measures are intended to introduce a cap on an individual's pot numbers and ability to introduce effort control within the fishery where no existing targeted management occurs in any part of the cephalopod's life cycle.

Similar to lobster and whelk pot limitation the impact of effort control will be monitored against CPUE to identify any trends to inform future management.

The Authority is aware that certain measures concerning the protection of cuttlefish eggs laid on set pots would be beneficial. The conclusion is that these measures would be achieved through codes of practice.

### **Prawn Pots**

There are no present proposals regarding limitations on prawn pots or individual tags. Although Dahns and buoys would need to be suitably marked.

### **Configuration of gear**

It is proposed that all commercial and recreational gear associated with lobster/crab, whelk and cuttlefish will be configured with a marker buoy/dahn at both ends of the string of pots or traps. Where more than one pot or trap is fished on a single string the float element of the markers shall not be less than 250mm in diameter. Where a single pot or trap is used the float element of the markers shall not be less than 150mm in diameter. The Authority may define geographic exceptions where tidal flow is too high for markers of this size.

Further marking of gear to define the pair of buoys on each string and orientation of gear may be explored through voluntary measures.

(d) Spatial restrictions;

**No spatial restrictions are proposed for fisheries management or conservation needs.**

(e) Time restrictions;

**No time restrictions are proposed**