

<b>Title:</b> <b>Southern IFCA ‘Poole Harbour Shellfish Hand Gathering’ Byelaw</b>  <b>IA No: SIFCA 010</b> <b>Lead department or agency:</b> <b>Southern Inshore Fisheries and Conservation Authority (SIFCA)</b>  <b>Other departments or agencies:</b> <b>Natural England</b>	<b>Impact Assessment (IA)</b>
	<b>Date:</b> 26/11/2014
	<b>Stage:</b> Development/Options/consultation
	<b>Source of intervention:</b> Domestic
	<b>Type of measure:</b> Secondary legislation
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## Summary: Intervention and Options

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

Much of Poole Harbour is environmentally designated as a Special Protection Area (SPA)<sup>i</sup>, a Ramsar site<sup>ii</sup> and a Site of Special Scientific Interest (SSSI)<sup>iii</sup> because it supports wildlife and/or habitats that are of European or National importance. This site contains some of England’s most vulnerable marine wildlife and habitats including for example seagrass beds, over-wintering and nesting bird populations. When important social and economic activities such as fishing, recreation and other industries take place within environmentally designated sites it is important that we ensure that these activities occur in a manner that is consistent with the protection of the site.

Under Article 6 of the EU Habitats Directive<sup>iv</sup>, within European Marine Sites including SPAs and RAMSAR sites, fisheries regulators are required to ensure that fisheries do not damage, disturb or have an adverse effect on the wildlife or habitats for which the site is legally protected. In a similar manner, under the Wildlife and Countryside Act 1981<sup>v</sup>, fisheries regulators must take reasonable steps, consistent with the proper exercise of the authority’s functions, to further the conservation and enhancement of features for which the is designated. The Conservation of Habitats and Species Regulations 2010<sup>vi</sup> requires that the IFCA exercise its functions, which are relevant to marine conservation so as to secure compliance with the requirements of the Habitats Directive. Furthermore, the functions (including any power to make byelaws) of Southern IFCA, as the relevant authority, are to be exercised under the management scheme established for Poole Harbour (Poole Harbour Aquatic Management Plan<sup>vii</sup>) so as to secure in relation to the site compliance with the requirements of the Habitats Directive.

The ‘Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour’ byelaw<sup>viii</sup> was introduced on 18<sup>th</sup> January 2007 and is a Southern Sea Fisheries District Committee (SSFDC) legacy byelaw. This byelaw prohibits the use or carriage of a shellfish dredge, scoop or handrake throughout the year in certain areas of Poole Harbour identified as being sensitive to overwintering and nesting bird species. The ‘Carriage of Clams’ byelaw<sup>ix</sup> was introduced on 10<sup>th</sup> July 2003 and is a SSFDC legacy byelaw that supports the Poole Fishery Order (1985), which is set to expire on 30<sup>th</sup> June 2015.

Southern IFCA intends to create the ‘Poole Harbour Dredge Permit’ byelaw<sup>x</sup> in order to manage the fishing for shellfish through the use of a dredge in Poole Harbour. The ‘Poole Harbour Dredge Permit’ byelaw will include measures to ensure the protection of environmentally designated species, including overwintering and nesting bird species. To ensure that there is no duplication in legislation and that shellfish gathering activities are compatible with Poole Harbour’s environmentally designated features it is necessary to consider the revocation and amendment of the ‘Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour’ byelaw and the revocation of the ‘Carriage of Clams’ byelaw.

The subject of this IA is the revocation and amendment of the ‘Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour’ byelaw, the revocation of the ‘Carriage of Clams’ byelaw and the proposed introduction of a Southern IFCA ‘Poole Harbour Shellfish Hand Gathering’ byelaw<sup>xi</sup>. The proposed byelaw will in part fulfil Southern IFCA’s duties in MaCAA (2009)<sup>xii</sup> and as the relevant and competent authority for the purposes of the Habitats Regulations 1994<sup>xiii</sup> as amended.

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

1. To review Southern IFCA's legacy byelaws against current evidence base and ensure that redundant and duplicate byelaws have been removed and gaps covered.
2. To introduce effective, robust and consistent management for Poole Harbour's shellfish fisheries.
3. To further the conservation objectives of Poole Harbour's environmentally designated areas through protecting over-wintering and nesting bird populations within Poole Harbour.
4. To enhance the environmental, socio-economic and fisheries sustainability of Poole Harbour.

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

1. Do nothing.
2. Create a SIFCA 'Poole Harbour Shellfish Hand Gathering' byelaw to spatially and temporally manage the hand gathering of shellfish in Poole Harbour.
3. Voluntary measures.
4. MMO management measure.

The preferred option is **OPTION 2**. A byelaw to spatially and temporally manage the hand gathering of shellfish within Poole Harbour is the most effective approach for Southern IFCA to secure compliance with the provisions of the Habitats Directive and Birds Directive and the Conservation of Habitats and Species Regulations 2010. This approach will enable Southern IFCA to fulfil their obligations under Section 153 of the Marine and Coastal Access Act, 2009. IFCAs are the lead fisheries management authority in inshore waters.

**Will the policy be reviewed?** It will be reviewed. **If applicable, set review date:** 01/01/2017

**What is the basis for this review?** Duty to review. **If applicable, set sunset clause date:** Month/Year

**Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?**

Yes

*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 Chairman: \_\_\_\_\_ Date: \_\_\_\_\_

# Summary: Analysis & Evidence

# Policy Option 2

Description:

## FULL ECONOMIC ASSESSMENT

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

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	£3,000	1	-

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

The effect of the recommended byelaw to commercial and recreational fishermen is described in this section as a non-monetised cost. It is estimated that the administrative and legal costs incurred by Southern IFCA in introducing the recommended byelaw will be approximately £3,000. This is discussed further in section 7.

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

Under the recommended byelaw the activity of hand gathering shellfish within Poole Harbour would be prohibited between the period of 1<sup>st</sup> November to 31<sup>st</sup> March each following year within areas of Keyworth, Arne, Middlebere and Wych Lakes, Ower and Newton Bays, Brands Bay, Blue Lagoon, Holes Bay and Lychett Bay. The recommended byelaw will come into effect on 1<sup>st</sup> July 2015 upon the expiry of the Poole Fishery Order (1985). At this point the 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw and the 'Carriage of Clams' byelaw will be revoked.

There is the potential for recreational and commercial hand gatherers of shellfish to experience a reduction in access to the fishery between 1<sup>st</sup> November and 31<sup>st</sup> March the following year, potentially resulting in a loss of catch and income. The commercial hand gathering of shellfish is not known to take place within Poole Harbour at this time, however suitable and most regularly used areas, notably Whitley Lake and Shore Road, remain open during this period.

It is not possible to estimate the additional cost to enforcement as likely levels of compliance are not known. This is discussed further in section 7.

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	-	-	-

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

The quantification of the potential benefits to the sustainability of shellfish stocks within Poole Harbour as a result of the recommended option is difficult. This is discussed further in section 7.

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

The recommended byelaw has significant environmental benefits through the protection of sensitive features that may be otherwise vulnerable to potentially damaging fishing techniques. Under the recommended byelaw there will be increased access to some areas of the fishery, potentially increasing catches and income. It is not possible to estimate the potential increase in income through increased catches. This is discussed further in section 7.

### Key assumptions/sensitivities/risks

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Information gathered from IFCA officers' and members' personal knowledge is anecdotal. A key assumption of intervention is that levels of compliance will be high and that the byelaw will lead to habitat protection and a potential increase in the sustainability of the Poole Harbour shellfish fisheries. Comparisons have been made in this assessment between the impacts of bait digging and the hand collection of shellfish due to the similarities in techniques used. As a fishing license is not required for commercial hand gathering of shellfish there is a lack of data available to fully understand the level and extent of this activity within Poole Harbour. IFCA officer's sightings data, supported by face-to-face communications with hand gatherers has been used to inform this assessment.

### BUSINESS ASSESSMENT (Option 2)

<b>Direct impact on business (Equivalent Annual) £m:</b>			<b>In scope of</b>	<b>Measure qualifies</b>
<b>Costs:</b>	NA	<b>Benefits:</b>	NA	NA
		<b>Net:</b>	NA	No
				IN/OUT/Zero net cos

### Evidence Base (for summary sheets)

1. Introduction
2. Rationale for intervention
3. Policy objectives
4. The options
5. Evidence base
6. Sectors affected
7. Analysis of costs and benefits
  - Costs
    - Analysis of fisheries costs
    - Analysis of administration costs
  - Benefits
    - Analysis of fisheries and environmental benefits
    - Analysis of socio-economic benefits
8. Summary
- References

## Evidence Base

### 1. Introduction

- 1.1 The nationally agreed vision of the IFCAs is that they will *“lead, champion and manage a sustainable marine environment and inshore fisheries within their Districts by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry”*.
- 1.2 Section 153 of the Marine and Coastal Access Act, 2009 (MaCAA) requires that for the management of inshore fisheries:-
  - (1) The authority for an IFC district must manage the exploitation of sea fisheries resources in that district.
  - (2) In performing its duty under subsection (1), the authority for an IFC district must:
    - (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) Take any other steps which in the authority's opinion are necessary or expedient for the purpose of making a contribution to the achievement of sustainable development, and
    - (d) Seek to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district.
- 1.3 As a direct consequence of Section 153, the ten Inshore Fisheries and Conservation Authorities (IFCAs) in England are obliged under a nationally agreed high level objective (HLO) to demonstrate that by April 2015, all legacy byelaws have been reviewed and evaluated against current evidence base; redundant and duplicate byelaws have been removed and gaps covered.
- 1.4 Under article 6(2) of the EU Habitats Directive and Birds Directive *“Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive”*.
- 1.5 Under section 28G of the Wildlife and Countryside Act 1981, fisheries regulators must take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of features for which the is designated.
- 1.6 The Conservation of Habitats and Species Regulations 2010 requires that the IFCA exercise its functions, which are relevant to marine conservation so as to secure compliance with the requirements of the Habitats Directive. Furthermore, the functions (including any power to make byelaws) of Southern IFCA, as the relevant authority, are to be exercised under the management scheme established for Poole Harbour (the Aquatic

Management Plan) so as to secure in relation to the site compliance with the requirements of the Habitats Directive.

- 1.7 The Poole Fishery Order (1985) is a hybrid Several Order and Regulating Order which allows for the development and promotion of aquaculture and the regulation of wild shellfish harvesting for oysters, mussels and clams. The present Order was originally created in 1915 under the Sea Fisheries (Shellfish) Act 1967<sup>xiv</sup> with the last renewal in 1985.
- 1.8 The 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw was introduced on 18<sup>th</sup> January 2007 and is a Southern Sea Fisheries District Committee (SSFDC) legacy byelaw. This byelaw prohibits the use or carriage of a shellfish dredge, scoop or handrake throughout the year in certain areas of Poole Harbour identified as being sensitive to overwintering and nesting bird species. The 'Carriage of Clams' byelaw was introduced on 10<sup>th</sup> July 2003 and is a SSFDC legacy byelaw that supports the Poole Fishery Order (1985) through prohibiting the carriage of clams whilst fishing for other species within the area of the Poole Fishery Order.

## **2. Rationale for intervention**

- 2.1 The Poole Fishery Order (1985) is due to expire on 30<sup>th</sup> June 2015, making the 'Carriage of Clams' byelaw redundant. In order to effectively manage the fishing for shellfish through the use of a dredge in Poole Harbour following the expiry of the Poole Fishery Order (1985) Southern IFCA intends to create the 'Poole Harbour Dredge Permit' byelaw. The permit issued under the proposed byelaw will include measures to ensure the protection of environmentally designated species. These measures include the temporal and spatial restriction of shellfish dredging activities within areas identified under the Poole Harbour Aquatic Management plan as being sensitive to overwintering and nesting bird species, representing a partial duplication of the 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw.
- 2.2 Poole Harbour supports substantial clam and cockle fisheries, producing combined vessel landings values of £420,067.50<sup>xv</sup>. The Native oyster (*Ostrea edulis*) fishery within Poole Harbour experienced a decline in productivity in the 1980's due to an outbreak of *Bonamia* and oysters are now found in relatively low densities. Shellfish species available to hand gathering in Poole Harbour include the Manila clam (*Tapes philippinarum*), the Native clam (*Tapes decussatus*), the American hard-shelled clam (*Mercinaria mercinaria*), razor clams (*Ensis* spp.) and cockles (*Cerastoderma edule*). At present, cockles are the most popular shellfish species for hand gatherers and the majority of gathering is believed to be for recreational purposes. The gathering of clam species is currently prohibited within the area of the Poole Fishery Order (1985) unless a clam license is held.
- 2.3 Poole Harbour was classified as a SPA for birds because it supports an assemblage of over 20,000 waterfowl, internationally important populations of overwintering shelduck and black tailed godwit and over 1% of three species

listed on annex 1 of the Birds Directive (overwintering avocet, breeding common tern and breeding Mediterranean gull).

- 2.4 Poole Harbour is also a wetland of international importance under the Ramsar convention because it regularly supports over 20,000 waterfowl and over 1% of populations of avocet, black tailed godwit, common tern, Mediterranean gull and shelduck while also being a good example of an estuary, supporting an appreciable assemblage of rare, vulnerable or endangered species and being of special value for maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora and fauna including supporting the nationally scarce plants narrow leaved eelgrass *Zostera augustifolia* and dwarf eelgrass *Zostera noltii*.
- 2.5 Poole Harbour is also recognised as nationally important for its extensive mudflats and marshes, which together with the permanent channels support large populations of overwintering waders and wildfowl. The fringing habitats support further rare and scarce fauna and flora including nesting birds. Several rare marine invertebrates also occur within the Harbour. With respect to nesting birds, the Poole Harbour condition assessment in 2010 noted the Harbour was nationally important for its breeding populations of common and Sandwich terns, Mediterranean and Black-headed gulls, Cetti's warbler, bearded tit and water rail. In a local context, the breeding population of the amber-listed redshank and reed bunting are also important. Other relevant species recorded breeding and part of the breeding bird assemblage include shelduck, little egret, grey heron, teal, mute swan, snipe, ringed plover, oystercatcher and reed warbler<sup>xvi</sup>.
- 2.6 A proposal from a Southern IFCA working group to manage the Poole Harbour shellfisheries through a dredge permit byelaw was agreed by the Southern IFC Authority at a Joint Committee meeting on the 6<sup>th</sup> March 2014. During the development of this byelaw the Southern IFCA Poole Order Working Group has identified the need to revoke and amend the 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw, revoke the 'Carriage of Clams' byelaw and make a 'Poole Harbour Shellfish Hand Gathering' byelaw.

### **3. Policy objective**

- 3.1 The policy objective pertinent to this impact assessment is to ensure that effective, robust and consistent management is introduced for Poole Harbour's shellfish fisheries. The 'Poole Harbour Shellfish Hand Gathering' byelaw will manage the hand gathering of shellfish within Poole Harbour through the temporal and spatial closure of areas identified by the Poole Harbour Aquatic Management Plan as being sensitive to overwintering and nesting bird populations. These measures will represent consistency with the 'Poole Harbour Dredge Permit' byelaw and the Poole Harbour Bait Digging Memorandum of Agreement.
- 3.2 The revocation of the 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw and the 'Carriage of Clams' byelaw and the introduction of the 'Poole Harbour Shellfish Hand Gathering' byelaw will ensure that redundant and duplicate

byelaws have been removed and gaps in the management of Poole Harbour's shellfish fisheries are covered following the expiry of the Poole Fishery Order (1985) on 30<sup>th</sup> June 2015 and the subsequent introduction of a dredge permit byelaw.

- 3.3 Much of Poole Harbour is environmentally designated as a Special Protection Area (SPA), a RAMSAR site and a Site of Special Scientific Interest (SSSI) because it supports wildlife and/or habitats that are of European or National importance. This site contains some of England's most vulnerable marine wildlife and habitats including for example seagrass beds, over-wintering and nesting bird populations. Under article 6 of the EU Habitats Directive and Birds Directive and section 28G of the Wildlife and Countryside Act 1981, when managing fishing activities, Southern IFCA has a duty to protect the designated features within Poole Harbour. The Conservation of Habitats and Species Regulations 2010 requires that the IFCA exercise its functions, which are relevant to marine conservation so as to secure compliance with the requirements of the Habitats Directive. Furthermore, the functions (including any power to make byelaws) of Southern IFCA, as the relevant authority, are to be exercised under the management scheme established for Poole Harbour (the Aquatic Management Plan) so as to secure in relation to the site compliance with the requirements of the Habitats Directive.
- 3.4 Through developing a 'Poole Harbour Shellfish Hand Gathering' byelaw, Southern IFCA is seeking to enhance the environmental, socio-economic and fisheries sustainability of Poole Harbour, thus fulfilling their obligations under Section 153 of the Marine and Coastal Access Act, 2009.

#### **4. The options**

- 4.1 As part of Southern IFCA's review of shellfish fisheries management for Poole Harbour a range of options were considered:
- 4.2 **Option 1** 'Do Nothing'
- 4.2.1 This option would involve allowing the regulation of Poole Harbour's oyster, mussel and clam fisheries through the Poole Fishery Order (1985) to lapse and therefore returning the fisheries for these species to the public fishery and leaving the 'Carriage of Clams' byelaw redundant. The introduction of the 'Poole Harbour Dredge Permit' byelaw will lead to the partial duplication with the 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw.
- 4.3 **Recommended option**  
**Option 2** A Southern IFCA 'Poole Harbour Shellfish Hand Gathering' byelaw.
- 4.3.1 Under this option the activity of hand gathering shellfish within Poole Harbour would be prohibited between the sensitive period of 1<sup>st</sup> November to 31<sup>st</sup> March each following year within areas of Keyworth, Arne, Middlebere and

Wych Lakes, Ower and Newton Bays, Brands Bay, Blue Lagoon, Holes Bay and Lychett Bay.

4.3.2 The recommended byelaw will come into effect on 1<sup>st</sup> July 2015 upon the expiry of the Poole Fishery Order (1985). At this point the 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw and the 'Carriage of Clams' byelaw will be revoked.

4.4 Other management options have been considered and rejected based on the following rationale:

4.4.1 Voluntary Agreement

Due to the area of Poole Harbour and the value of the area's environmental features it is believed that a voluntary agreement would be impractical and would pose too greater risk to the integrity of the environmental designations.

4.4.2 MMO management measure – permanent byelaw or fishing licence condition

IFCAs have been established as the lead regulator for the sustainable management of inshore fisheries. As such, the SIFCA is the most appropriate authority to implement, manage and enforce fisheries management measures within 6 nautical miles.

## 5. Evidence base

### 5.1 Poole Harbour Special Protection Area (SPA)

5.1.1 The qualifying features for the Poole Harbour SPA are Common shelduck (Non-breeding), Pied avocet (non-breeding), Black-tailed godwit (non-breeding), Mediterranean gull (breeding), Common tern (breeding) and the water-bird assemblage. In addition, little egret and aquatic warbler were identified as qualifying features by the UK SPA Review in 2001. However, more recent data suggests aquatic warbler no longer qualify in terms of numbers. Breeding sandwich terns are however now occurring in internationally important numbers and therefore qualify.

5.1.2 The key sub features (or habitats for the SPA qualifying features) are listed in the Regulation 33 advice Package for Poole Harbour as:

1) **Internationally important populations of the regularly occurring annex 1 species**

a) Shallow Inshore Waters including Lagoons - Shallow tidal waters provide key feeding habitat for the annex 1 species common tern, avocet, and Mediterranean gull. Brownsea Island lagoon is an essential feeding area for wintering avocet. It also provides key nesting islands for common tern, however these are above highest astronomical tide and therefore not within the EMS boundary. Shallow inshore waters are of importance for feeding

common terns and to a lesser extent, for the qualifying population of breeding Mediterranean gulls which will also occasionally feed in these areas;

b) Intertidal Sediment Communities - Mudflats and sandflats support rich populations of intertidal invertebrate species, which in turn provide a food source for wintering avocets and breeding Mediterranean gull. Although avocets occasionally swim, they generally feed whilst wading on the intertidal sediments in areas of very shallow water. These habitats also provide important roosting areas for both species;

c) Saltmarsh Communities - This habitat is of importance for providing roosting, feeding and nesting habitat. Upper saltmarsh is of importance as nesting habitat for both common tern and Mediterranean gull, whilst saltmarsh habitats, and in particular the associated creeks are also used as a feeding area by Mediterranean gull. Saltmarsh provides ideal high water roosts for all annex 1 species.

## **2) Internationally important assemblage of waterfowl including internationally important populations of regularly occurring migratory bird species**

a) Shallow Inshore Waters including Lagoons - Shallow tidal waters provide key feeding and roosting habitat for the internationally important populations of wintering shelduck. Shallow tidal waters also provide key feeding habitat for nationally important populations of goldeneye, red-breasted merganser and cormorant, which feed on fish and small molluscs.

b) Intertidal Sediment Communities Mudflats and sandflats support rich populations of intertidal invertebrate species, which in turn provide a food source for the internationally important populations of black-tailed godwit and shelduck. Nationally important populations including dunlin, teal, curlew, spotted redshank, greenshank, redshank and black-headed gull also feed on these rich populations of intertidal invertebrate species. Nationally important populations of dark-bellied brent geese feed on *Zostera* and *Enteromorpha* that grow on the intertidal sediment communities. These habitats provide important roosting areas for all of these species.

c) Saltmarsh Communities - Upper and lower saltmarsh provide important feeding areas for the internationally important assemblage of waterfowl and its qualifying species. Upper saltmarsh in particular also makes ideal high water roost sites. Dark-bellied brent geese and teal feed on saltmarsh plants and their seeds.

d) Reedbeds - These provide feeding and roosting areas for a proportion of the internationally important assemblage of waterfowl. They are of particular importance for teal and pochard. Reed beds also play a key role in providing shelter for adjacent sub features.

## **5.2 Bird disturbance**

- 5.2.1 There is good evidence that disturbance is a widespread factor associated with the population declines of a number of species<sup>xvii</sup>. Disturbance can potentially affect wintering birds in a variety of ways, for example through birds avoiding otherwise suitable areas of habitat<sup>xviii,xix</sup>; through reduced intake rates as a result of vigilance etc.<sup>xx,xxi,xxii</sup> and through physiological impacts such as stress<sup>xxiii</sup>. Such impacts have the potential to affect fitness of individuals and have consequences at a population scale. Within Poole Harbour lower numbers of birds in some areas of the Harbour were found than might be expected given the amount of prey available in those areas. Results from this study would suggest that disturbance may be a factor in the reduced numbers of birds using some areas<sup>xxiv</sup>. The results presented in Liley & Fearnley (2012)<sup>xxv</sup> indicate that bird numbers in Poole Harbour will be lower in areas that are highly disturbed and that, for waders at least, the disturbed areas are not differentially used at night. The report also found that group size was significant in that larger groups of people had a significantly higher probability of causing a major flight.
- 5.2.2 The nature of bait digging and shellfish hand gathering activities are similar and therefore comparisons between the impacts of these activities in terms of bird disturbance have been made in this section.
- 5.2.3. Fowler's (2002)<sup>xxvi</sup> review of previous studies concluded that the presence of bait diggers can disturb birds but the significance of this disturbance depends on; time of year and thus prey availability and weather conditions; the availability of alternative undisturbed areas where feeding is adequate; and the numbers, proximity and frequency of bait collectors on the mudflats.
- 5.2.4 Morrison's (2006)<sup>xxvii</sup> study in Holes Bay found moderate disturbance occurred when baitdigging was accessed directly from the shore and digging was restricted to within 50 m of the shore. Severe disturbance occurred when bait diggers accessed the bay across the saltmarsh and through Pergin's Island or bait diggers straying further out from the shoreline. In such cases, all estuarine birds within a radius of c.100 metres left the area. Severe disturbance often had a knock-on effect with birds taking flight in response to other birds taking flight and therefore the actual area of disturbance would extend beyond c.100 metres.
- 5.2.5 In the winter of 2011/12 another study of Holes Bay however recorded few disturbance events took place. The report concludes that this was due to the small number of diggers during the survey, the large size of the bay and the relatively small focal areas covered by the standard watches. A severe disturbance event was however noted when diggers were accessing the bay north of the railway line across Pergin's island with large numbers of birds moving to the south part of the bay. Liley et al (2012)<sup>xv</sup> consider that it is those areas (such as north of the railway line and in the centre of Holes Bay, where usually there is no disturbance, that the impact of disturbance are likely to be most dramatic.

### 5.3 Food availability (function and supporting process)

5.3.1 Where digging is undertaken at a low intensity the sediment disturbance may have no effect on bird feeding with in some cases species taking advantage of prey being exposed in these areas. Intensive (bait) digging, however, can result in birds being unable to access the mud beneath waterlogged areas where deep holes in the mud have been left and birds have been found to avoid these heavily perturbed areas<sup>xvii</sup>. The holes dug when hand gathering shellfish are usually shallow and small in comparison to bait digging activities, however similar or higher intensities may occur.

5.3.2 Sediment disturbance as a result of shellfish hand gathering (and in combination with other activities (e.g. bait digging and shellfish dredging) can potentially impact on bird prey availability, prey size and the ability of birds to forage. This can be through removal (mortality) of target and non-target species and impacts on non-target prey availability through changes in habitat structure of the intertidal sediment communities.

5.3.3 Release of sediment contaminants such as heavy metals from sediment disturbance by shellfish hand gathering could also impact on prey availability.

#### 5.4 **Poole Harbour Ramsar**

5.4.1 In addition to overwintering waders and wildfowl, the Ramsar site is also designated for its eelgrass beds. Physical damage could occur from shellfish hand gathering if it takes place within this habitat. The activity of (bait) digging on seagrass beds loosens and uproots plants and may result in the beds being washed away<sup>xxviii</sup>. The Southern IFCA Prohibition of Gathering (Sea Fisheries Resources) in Seagrass Beds byelaw, recently introduced to prohibit hand gathering in eelgrass beds including areas in Poole Harbour, is an important mitigation measure to avoid an impact from this activity.

#### 5.5 **Poole Harbour SSSI**

5.5.1 In addition to the bird features for which the SPA is classified, the SSSI is designated for nesting birds using the fringing reed bed and saltmarsh habitats of Poole Harbour and marine invertebrates. Shellfish gathering activity has the potential to damage the breeding bird assemblage feature through disturbance to breeding birds effecting breeding productivity when taking place in proximity to their nesting and feeding sites.

#### 5.6 **Bird sensitive areas**

5.6.1 These are areas, identified in the Poole Harbour Aquatic Management Plan, where at present there is relatively little disturbance, or areas where the geographically enclosed nature of the bays means that activities such as shellfish gathering would have the potential to disturb birds over a large area. They are also areas where birds appear to be preferentially feeding and roosting and where the key bird interests for which the Harbour is recognised as important reside<sup>xxix</sup>. The Poole Harbour Aquatic Management Plan has identified that it is essential that disturbance in the 'Overwintering Bird

Sensitive Areas' are kept to a minimum to ensure migratory birds have every opportunity to feed and rest.

5.6.2 Bird count data (WeBs data) analysed by Natural England in 2012 highlighted declines in the numbers of overwintering birds in some sectors of the Harbour. The data analysis highlighted in particular there was concern regarding declines in some species in Lytchett Bay (shelduck, redshank and dunlin) Brands Bay (shelduck, redshank, dark bellied brent geese, dunlin) and Wych (shelduck, black tailed godwit, dunlin).

## 5.8 Poole Harbour shellfish landings data

5.8.1 Marine Management Organisation landings data<sup>xv</sup> for fishing vessels indicates that the 2011 annual value of Poole Harbour clam species landings totalled £271,085.30. During the same year the landings of cockles totalled £148,982.20, giving a combined shellfish landings value of £420,067.50 for 2011. Landings have significantly reduced during 2012 and 2013, producing combined species values of £186,408.40 and £174,824.20 respectively. This reduction in landings values is believed to be partly due to significantly reduced cockle fisheries during these years. It is estimated that as much as 50% of Poole Harbour's shellfish landings are not accurately recorded by unregistered, unlicensed fishing vessels and by vessels fishing outside of designated seasons. It is estimated that 100% of these landings values are achieved through shellfish dredging activity and very little commercial hand gathering of shellfish is believed to currently take place within Poole Harbour.

## 6. Sectors affected

### 6.1 Fishing

6.1.1 There is the potential for any person wishing to hand gather shellfish within Poole Harbour to be affected by this byelaw.

6.1.2 There is the potential for seasonal loss of access for hand gathering of shellfish within areas of Holes Bay, Lytchett Bay, Blue Lagoon and Brand's Bay.

6.1.3 There is the potential for shellfish hand gathers to experience an increase in access, catches and potentially income due to the seasonal access to Keyworth, Arne, Wych and Middlebere Lakes, Ower Bay and Newton Bay.

6.1.4 The wider financial costs and benefits to the District's fishing industry are outlined in section 7.

### 6.2 Local economies and society

6.2.1 There is the potential for the local society and individuals associated with the shellfish industry to be affected by the proposed byelaw.

6.2.2 The wider benefit of protecting the environmentally designated areas of Poole Harbour and the marine fisheries resources within the harbour is outlined in section 7.

### 6.3 Enforcement bodies

6.3.1 The lead responsibility of enforcing the proposed closed area would fall to the Southern IFCA. There is the potential for an increase in enforcement costs as a consequence of the proposed byelaw. The cost associated with enforcement and administration is outlined in section 7.

## 7. Analysis of costs and benefits

### 7.1 Costs for the recommended option

7.1.1 The introduction of a Southern IFCA 'Poole Harbour Shellfish Hand Gathering' byelaw to temporally and spatially manage the hand gathering of shellfish within Poole Harbour may result in the following costs:

- Seasonal loss of access for the hand gathering of shellfish by the use of a handrake within areas of Holes Bay, Lychett Bay, Blue Lagoon and Brand's Bay
- Seasonal loss of access for the hand gathering of shellfish by means other than the use of a handrake within areas of Holes Bay, Lychett Bay, Blue Lagoon, Brand's Bay, Keyworth, Arne, Middlebere and Wych Lakes, Ower Bay and Newton Bay
- Potential loss in shellfish catch and income for existing Poole Harbour hand gatherers
- A potential increase in enforcement and administration costs associated with policing and administering the new byelaw

7.1.2 Potential loss of access to fisheries, the potential loss of catch and income and enforcement costs are difficult to value and are therefore described here as non-monetised costs.

### 7.2 Analysis of fisheries costs

7.2.1 It not believed that significant levels of commercial shellfish hand gathering currently take place within Poole Harbour. The most frequently used area for the hand gathering of shellfish within Poole Harbour is believed to be the Whitley Lake and Evening Hill area on the Eastern side of the Harbour, where the activity takes place at a low to moderate intensity. Low levels of hand gathering for shellfish is believed to take place within the Brands Bay area and areas of the Northern shore of the Harbour.

7.2.2. The area of Lychett Bay is currently prohibited to all gathering of shellfish due to bacteriological contamination and the area of Holes Bay is unclassified for the gathering of shellfish due to the concerns about chemical contamination so it is anticipated that there will be no loss of access to these areas as a result of the recommended byelaw. It is anticipated that the seasonal closure of Brands Bay and Blue Lagoon between 1<sup>st</sup> November and 31<sup>st</sup> March the following year may affect financially recreational hand gatherers as alternative shellfish may need to be purchased if it cannot be caught. Hand gathering access will be maintained to other suitable areas for hand gathering of shellfish within the Harbour during this period.

7.2.3 The recommended byelaw will seasonally prohibit all methods of hand gathering for shellfish within the sensitive areas of the Harbour, whereas the 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw only prohibited the use of a handrake within these areas. Handrakes are the most commonly used method for shellfish hand gathering in Poole Harbour; however hand digging and the digging with a trowel or fork may also occur. There is the potential for individuals who use these methods within the seasonally closed areas to be affected, however these activities have not been observed in these areas.

### **7.3 Analysis of administrative costs**

7.3.1 The lead responsibility of enforcing an IFCA byelaw under section 153 of the Marine and Coastal Access Act 2009 will fall to the Southern IFCA. The existing routine and directed patrols undertaken by the IFCA within Poole Harbour would be the most likely and effective method of enforcement. It is not possible to estimate the additional cost to enforcement through introducing the recommended byelaw as likely levels of compliance are not known.

7.3.2 At this juncture only a rough estimate the administrative costs of this process can be made. It is estimated that the administrative cost of introducing the recommended byelaw, including the costs associated with advertising the new byelaw and the cost of legal advice will be approximately £3,000.

### **7.4 Benefits for the recommended option**

7.4.1 The introduction of a Southern IFCA 'Poole Harbour Shellfish Hand Gathering' byelaw to temporally and spatially manage the hand gathering of shellfish within Poole Harbour may result in the following benefits:

- Seasonal increase in access for the hand gathering of shellfish within areas of Keyworth, Arne, Middlebere and Wych Lakes, Ower Bay and Newton Bay
- Potential increase in shellfish catch and income for existing Poole Harbour hand gatherers
- Potential increase in the sustainability of the Poole Harbour shellfish fisheries

- Potential increase in the environmental sustainability of Poole Harbour

7.4.2 Potential benefits to the sustainability of Poole Harbour's shellfish fisheries, environmental sustainability and socio economic benefits through increased access to fisheries are difficult to value and are therefore described here as non-monetised costs.

## 7.5 Analysis of fisheries and environmental benefits

7.5.1 The quantification of the potential benefits to the sustainability of shellfish stocks within Poole Harbour as a result of the recommended option is difficult. At the peak of the Poole Harbour clam fishery in 2001 the estimated annual value of landings was approximately £1.5m-2m. The productivity of the clam fishery in particular has experienced a decline in the past 10-15 years, potentially due to over-exploitation and non-compliance with regulations. In 2013 the value of clam and cockle landings within Poole Harbour was £174,824.20 and the average value of the fisheries between 2011- 2013 was recorded as £260,433.30. Through developing a more robust management regime and developing compliance it is believed that the sustainability and productivity of both the clam and cockle fisheries will increase, however it is not believed that the hand gathering of shellfish currently significantly affects shellfish stocks within the Harbour and it is anticipated that the potential benefits in fisheries sustainability will be achieved through the management of the dredge fisheries. The quantification of the potential benefits to the sustainability of shellfish stocks within Poole Harbour as a result of the recommended option is difficult.

7.5.2 Poole Harbour is recognised as a nationally important site for its extensive mudflats and marshes, which together with the permanent channels support large populations of overwintering waders and wildfowl. The fringing habitats support further rare and scarce fauna and flora including nesting birds. Several rare marine invertebrates also occur within the Harbour. Through the management of the Poole Harbour shellfish fisheries as a result of the recommended option it is anticipated that there will be no adverse effect on the marine environment, and through the addition of the Brand's Bay, Holes Bay, Blue Lagoon and Lychett Bay seasonally closed areas to the existing regulations it is anticipated that the declines in shelduck, redshank, dark bellied brent geese and dunlin in these areas may be reduced.

7.5.3 The recommended byelaw will increase access to areas of Keyworth, Arne, Middlebere and Wych Lakes, Ower Bay and Newton Bay for the use of handrakes when hand gathering shellfish between 1<sup>st</sup> April and 31<sup>st</sup> October each year. It is not known to what extent these areas will be exploited.

## 7.6 Analysis of socio-economic benefits

7.6.1 It is anticipated that this byelaw will manage the fishery-ecosystem interaction, supporting marine biodiversity within Poole Harbour. The effective management of shellfish hand gathering within a Marine Protected Area demonstrates that these fisheries are managed in an appropriate way within sensitive marine areas. This byelaw therefore provides these fisheries with the

opportunity to demonstrate their environmental credentials. In an ever-more environmentally aware society, this information may increase consumer confidence in these fisheries which may in turn have associated socio and economic benefits.

- 7.6.2 The hand gathering of shellfish is a historically important recreational activity within the Poole Harbour community and many feel that it is therefore important that this activity is allowed to continue. The spatial and temporal management of this activity through the recommended byelaw ensures that the appropriate mitigation measures are taken to ensure that the activity is compatible with the environmentally designated features of the Harbour and the conservation objectives of the site.

## 8. Summary

- 8.1 Under Article 6 of the EU Habitats Directive, within European Marine Sites including SPAs and RAMSAR sites, fisheries regulators are required to ensure that fisheries do not damage, disturb or have an adverse effect on the wildlife or habitats for which the site is legally protected. In a similar manner, under the Wildlife and Countryside Act 1981, fisheries regulators must take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of features for which the site is designated. The Conservation of Habitats and Species Regulations 2010 requires that the IFCA exercise its functions, which are relevant to marine conservation so as to secure compliance with the requirements of the Habitats Directive. Furthermore, the functions (including any power to make byelaws) of Southern IFCA, as the relevant authority, are to be exercised under the management scheme established for Poole Harbour (Poole Harbour Aquatic Management Plan) so as to secure in relation to the site compliance with the requirements of the Habitats Directive.
- 8.2 To bring fisheries in line with other activities, the Department for Environment, Food and Rural Affairs (Defra) announced on the 14<sup>th</sup> August 2012 a new approach to manage fishing activities within EMSs. This change in approach will promote sustainable fisheries while conserving the marine environment and resources, securing a sustainable future for both.
- 8.3 Under MaCAA 2009, Southern IFCA has a responsibility to manage the exploitation of sea fisheries resources in their district, ensuring the sustainable exploitation of sea fisheries resources whilst balancing the social and economic benefits with the need to protect the marine environment from, or promote its recovery from, the effects of such exploitation. The proposed byelaw will in part fulfil Southern IFCA's duties in MaCAA (2009)<sup>8</sup>
- 8.4 The Poole Fishery Order (1985) is a hybrid Several Order and Regulating Order which allows for the development and promotion of aquaculture and the regulation of wild shellfish harvesting for oysters, mussels and clams. The 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw was introduced on 18<sup>th</sup> January 2007

and is a Southern Sea Fisheries District Committee (SSFDC) legacy byelaw. This byelaw prohibits the use or carriage of a shellfish dredge, scoop or handrake throughout the year in certain areas of Poole Harbour identified as being sensitive to overwintering and nesting bird species. The 'Carriage of Clams' byelaw was introduced on 27<sup>th</sup> July 1995 and is a SSFDC legacy byelaw that supports the Poole Fishery Order (1985) through prohibiting the carriage of clams whilst fishing for other species within the area of the Poole Fishery Order.

- 8.5 The Poole Fishery Order (1985) is due to expire on 30<sup>th</sup> June 2015, making the 'Carriage of Clams' byelaw redundant. In order to effectively manage the fishing for shellfish through the use of a dredge in Poole Harbour following the expiry of the Poole Fishery Order (1985) Southern IFCA intends to create the 'Poole Harbour Dredge Permit' byelaw. The permit issued under the proposed byelaw will include measures to ensure the protection of environmentally designated species. These measures include the temporal and spatial restriction of shellfish dredging activities within areas identified under the Poole Harbour Aquatic Management plan as being sensitive to overwintering and nesting bird species, representing a partial duplication of the 'Prohibition on Using or Carrying a Shellfish Dredge, Scoop or Handrake in Certain Areas of Poole Harbour' byelaw.
- 8.6 The recommended 'Poole Harbour Shellfish Hand Gathering' byelaw will manage the hand gathering of shellfish within Poole Harbour through the temporal and spatial closure of areas identified by the Poole Harbour Aquatic Management Plan as being sensitive to overwintering and nesting bird populations. These measures will represent consistency with the 'Poole Harbour Dredge Permit' byelaw and the Poole Harbour Bait Digging Memorandum of Agreement.
- 8.7 Under this option the activity of hand gathering shellfish within Poole Harbour would be prohibited between the sensitive period of 1<sup>st</sup> November to 31<sup>st</sup> March each following year within areas of Keyworth, Arne, Middlebere and Wych Lakes, Ower and Newton Bays, Brands Bay, Blue Lagoon, Holes Bay and Lychett Bay.
- 8.8 As a result of the recommended byelaw there is the potential for recreational and commercial hand gatherers of shellfish to experience a reduction in access to the fishery between 1<sup>st</sup> November and 31<sup>st</sup> March the following year. It is not possible to estimate enforcement costs as the likely level of compliance is not known at this point. It is estimated that the administrative and legal cost of introducing the recommended byelaw will be approximately £3,000.
- 8.9 The recommended byelaw has significant environmental benefits through the protection of sensitive features that may be otherwise vulnerable to potentially damaging fishing techniques. The effectiveness of the recommended byelaw will be reviewed within 3 years of its introduction.

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