Marine Protected Areas
Sub-Committee Meeting

To be held at:

The Boathouse Business Centre,
1 Harbour Square, Nene Parade,
Wisbech, PE13 3BH

5th June 2013

1330 hours

Meeting: Marine Protected Areas Sub-Committee

Date: 5 Jun 2013

Time: 13:30hrs

Venue: The Boathouse, Wisbech, Cambridgeshire

"Eastern Inshore Fisheries and Conservation Authority will lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry."

Agenda

1 Welcome by the Chair

2 Apologies for absence

3 Declaration of members' interests

Action Items

4 Minutes of the Meeting of the Marine Protected Areas Sub-Committee 6 December 2012 – *Chair*

5 The WFO Cockle Fishery 2013 – *CEO/Hd Environment and Research*

Any other business

6 To consider any other items which the Chair is of the opinion are matters of urgency by reason of special circumstances which must be specified

P J Haslam
Chief Executive Officer
21 May 2013

Marine Protected Areas Sub-Committee

"EIFCA will lead, champion and manage a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economical benefits to ensure healthy seas, sustainable fisheries and a viable industry".

A meeting of the Marine Protected Areas Sub-Committee took place at True's Yard, North Street, King's Lynn on Thursday 6th December 2012 at 1200 hours

Members Present:

Cllr Tony Turner	Chair	Lincolnshire County Council
Mr Rob Spray	Vice-Chair	MMO Appointee
Mr Shane Bagley		MMO Appointee
Mr Roy Brewster		MMO Appointee
Mr Connor Donnelly		Natural England Representative
Mr Paul Garnett		MMO Appointee
Mr Roger Handford		Environment Agency Representative
Mr Neil Lake		MMO Appointee
Mr Ceri Morgan		MMO Appointee
Mr Tom Pinborough		MMO Appointee
Cllr Ken Sale		Suffolk County Council
Cllr Hilary Thompson		Norfolk County Council
Mr Koen Vanstaen		MMO Appointee

Eastern IFCA Officers Present:

Phil Haslam	Chief Executive Officer
Julian Gregory	Head of Marine Protection
Eden Hannam	Head of Marine Environment & Research
Ron Jessop	Senior Research Officer
Judith Stoutt	Senior Marine Environment Officer

Also Present:

Emma Thorpe	Natural England
Zoe	Environment Agency

Apologies for Absence
There were no apologies for absence.

MPA12/21 <u>Declaration of members' interests</u>

Shane Bagley, Roy Brewster, Paul Garnett and Neil Lake declared a pecuniary interest in item 6 as they are commercial fishermen working in the Wash and also entitlement and lay holders under the Wash Fishery Order 1992. They did not take part in the vote on this item.

Members were also reminded by the CEO that the revised Declaration of Interest form needed to be completed and returned as soon as possible. He apologised if this was a duplication of effort.

MPA12/22 Minutes of the meetings of the Marine Protected Areas Sub-Committee on 23rd May 2012 and Extraordinary MPA Sub-Committee meetings held on 29th June and 2nd October 2012

Mr Pinborough advised that he had been omitted from the list of those present at the meeting on 2nd October.

It was Resolved, that with the omission corrected the minutes should be signed as true records of the proceedings.

Proposed: Cllr Sale
Seconded: Mr Handford
All Agreed.

MPA12/23 Matters Arising

There were no matters arising.

MPA12/24 Mussel Fishery

The Senior Research Officer gave a presentation on the surveys carried out of 19 areas of mussels during September and October. Comparison figures of the last 10 years were provided. The Senior Research Officer (SRO) gave a summary of each of the 19 beds and how its stock level compared to that in 2011. There were a mixture of fortunes, some beds had a notable decline whilst others, like the Herring Hill Bed had shown an increase in biomass. Having provided detail on the state of the mussel beds the SRO then reminded members of the Conservation Objectives and Management Policy targets which had to be taken into consideration when considering opening a fishery.
One of the conservation objectives was not to reduce the stock levels below 12,000 tonnes (t). However, in exceptional circumstances it was possible to set a Total Allowable Catch (TAC) which reduced this level as low as 10,000 t provided the Authority could confidently state that. in their judgement using all data available. they believed the level would return to 12,000 t by the end of the year due to growth of juvenile stock. Current stock levels amounted to 12,338t which suggested a fishery should only be permitted for 338t, however the SRO believed that the number of juvenile mussels present is sufficient to support a temporary reduction in the total stock to 11,250 t.

The Conservation Objective for opening a fishery for adult stock does not permit a fishery if stock levels are below 7,000t, current adult stock levels were 3,942t, consequently there is insufficient adult stock to open a fishery. Juvenile stocks are in a healthier condition and the SRO believed it was viable to operate a relaying fishery with a total TAC of 966 t divided into 878t for a dredged fishery and 88t for a handworked fishery. The beds which could support this fishery, without dropping below 25t/hectare would be Mare Tail North, Holbeach, West Breast, East Breast and Blackshore.

This proposal also took account of the amount of Ash Free Dry Mass required to support the over wintering oystercatchers which is a requirement of the SSSI.

Members considered the information provided and gave consideration to the suggested areas and tonnages proposed to be fished. Mr Lake was uncomfortable at the prospect of not fishing beds below 25t/hectare as he felt this principle left beds with mixed year classes making them difficult to fish which he believed caused the bed to actively decline. This principle he believed had led to the decline of the Gat Sand. The SRO believed that maintaining 25t/hectare resulted in annual recruitment, whilst areas which had been fished hard did not seem to recover. Mr Donnelly believed that it was important to maintain a range of year classes to create biodiversity. Whilst it was acknowledged that the issue for the 2012 fishery was not the 25t/hectare but the level of actual stocks in the Wash it was nevertheless considered by Mr Vanstaen that graphs of historic fishing effort would be beneficial in the future to compare activity versus regrowth response. It may help to allay the argument of more fishing leads to regrowth versus leaving 25t/hectare leads to regrowth.

For information Mr Spray enquired whether dredging or handworking left the bed in a better state for regrowth. The SRO believed dredging may damage the topography of a bed a little but it could also benefit the bed by scattering the seed around. Handworking would be more intensive in small areas and walking on the sand could trample some of the mussel.
Mr Handford also enquired what happened to the juvenile stock which would be removed if the fishery was opened, he was advised they would either go onto private lays or into the North Norfolk Coast fishery.

Members Agreed to Note:

- **The results of the 2012 autumn surveys as presented by the SRO.**
- **That the survey results show the total mussel biomass has achieved the SSSI Conservation Objective target but the adult mussel biomass is below the SSSI Conservation Objective target.**
- **That although Shellfish Management Policies would allow for a Relaying Fishery with a maximum TAC of 1,679 tonnes for the dredge fishery and 168 tonnes for the hand-worked fishery, this level of exploitation would reduce the total mussel stock to 10,491 tonnes.**
- **That this figure is below the threshold of 12,000 tonnes as set out in the SSSI Conservation Objectives.**

Members Resolved to agree:

- **That there are insufficient adult mussel stocks to support a harvestable fishery, but sufficient juvenile mussel stocks to support a seed mussel relaying fishery.**

- **With the officers' recommendation that, provided the total mussel biomass is not fished below 11,250 tonnes, it is possible to go slightly below the 12,000 tonnes threshold and still recover sufficiently to achieve the SSSI Conservation Objective target in 2013.**
- **To open a Relaying Fishery for the 2012/2013 season with a maximum TAC of 878 tonnes for the dredge fishery and 88 tonnes for the hand-worked fishery.**
- **To open the following beds to the 2012/2013 relaying fishery with the following maximum exploitation rates for each bed:**

Bed	Maximum Exploitation (tonnes)
Mare Tail North	1,063
Holbeach	446
West Breast	147
East Breast	381
Blackshore	271

- **Devolve to the CEO the authority to open the dredge and hand-worked fisheries at appropriate dates following consultation with the industry.**
- **That the CEO can close the dredge and hand-worked relaying fisheries on:**
  - **either August 31st 2013;**
  - **when their respective quotas are exhausted; or**
  - **disturbance to the beds is determined to be excessive.**
- **The dredge mussel fishery should be opened on a five days a week basis, 00:01 hours on Monday to 23:59 hours on Friday and the handwork fishery would open on a seven days a week basis.**
- **The daily vessel quota should be 8,000 kg/day.**

Proposed: Cllr Sale
Seconded: Cllr Thompson
All members able to vote agreed

MPA12/25 <u>Review of Lay Consents</u>

Members were provided with a brief report on the background of the review and the issues being looked at following advice from Natural England (NE).

The key message to get across to members was that whilst this was a piece of work which had been pending for quite some time progress had been made and it was almost ready to be submitted in draft form for review by NE. The aim for the final review was the Statutory Meeting on 30th January 2013.

Mr Donnelly advised that he hoped the review would be fairly straightforward, however if there were any new issues to be considered this may cause a slight delay.

Members Agreed:

- **To note the progress made towards the review of WFO lease consents;**
- **That the next step of the review is for to document to be presented to NE**
- **Request that the SMO report back to the Authority Meeting in January 2013 with the outcomes of the final review, including any comments by NE or the wider stakeholders.**

MPA12/26 **Review of 2012 Cockle Fishery**

Members were reminded that the cockle fishery was under legal challenge and as such it was important that the Code of Good Practice be adhere to. During the course of the 2012 cockle fishery it had become apparent there had been two incidents which suggested a minority were not operating completely within the guidance.

One event was evidence of excessive prop washing on the Wrangle Sand this resulted in an emergency meeting of the MPA Sub-Committee for consideration of the extent of the damage. It was decided that as it was only a minority involved in this activity the fishery should continue but under close scrutiny.

The second issue related to the fishery on the Roger Sand which was opened on the basis that 'no prop washing' or 'blowing out' was allowed. Evidence of prop washing was noted along with excessive keel marks being discovered by Eastern IFCA officers during an inspection of the sand, as a direct result the fishery was closed on 20th November 2012.

The Head of Marine Protection (HOMP) stated that a set of rules had been put in place and needed to be abided by, but emphasized there was no mechanism in place to address individuals who were not adhering to the guidance.

The CEO advised he takes his direction from the MPA Sub committee and reflects their intent in the conditions publicized in advance of opening the fishery. He understood it to be the committee's bidding that they must be adhered to, failure to adhere would result in action being taken. He stated that it was unfortunate that the minority at fault, compromised the freedom to fish of the majority.

Members accepted it was only the minority who were at fault but the tools available to monitor the fishery meant it was either open or shut to everybody, it raised the question of whether VMS had been investigated any further. It was noted this was still very much part of the programme of work but there were both technology maturity, industry appetite and cost implications that would need to be aligned.

Mr Pinborough acknowledged that it was unfortunate that Defra guidance was that IFCAs must start with an education process using voluntary codes before putting regulations in place.

Regrettably there would always be a few who fail to conform so in all probability evidence based monitoring will be required which may result in regulatory byelaws.

Members Resolved to note the report and to pass it to the Regulatory and Compliance Sub-Committee for their consideration as part of the byelaw review process.

Proposed: Cllr Turner
Seconded: Mr Morgan
All Agreed

MPA12/27 Progress of European Marine Sites

The Senior Marine Environment Officer gave a presentation on the progress made to date on defining European Marine Sites. Members were advised that there had been a change in approach as a result of a Defra announcement which applied to the whole of England. All commercial fisheries would need to be assessed to ensure they were not damaging the features. IFCAs had been identified as the organisation best placed to carry out the monitoring. This would be a large piece of work which had not been anticipated last year and had to be completed and regulated by this time next year, it was likely to mean that other scheduled work would slip further down the list of priorities and there would be an impact on the Higher Level Objectives.

Initially the workload would be assessed into priorities using a traffic light system of red, amber, green, with red potentially having the most damaging impact, such as shrimp trawling over *Sabellaria* reefs.

Progress to date had included Action Plans, Technical meetings, and Defra workshops. There would also be a Defra representative at the EIFCA Statutory Meeting in January 2013 to explain the process to date.

MPA12/28 Any other urgent business

There was no other business.

The meeting closed at 1153 hours

Action Item 5

Marine Protected Area Sub Committee meeting

5 June 2013

The Wash Fishery Order Cockle Fishery 2013

Report By: P J Haslam, CEO

Purpose of report:

The purpose of this report is to enable the members to debate issues surrounding the opening of the 2013 cockle fishery and to decide upon the most appropriate time and methods taking into account all relevant factors presented in the paper.

The paper is intentionally detailed as it aims to expose the plethora of issues surrounding the management of a successful cockle fishery. On the face of it, this paper represents a routine tactical procedure to enable a cockle fishery but the decisions taken must be made with full awareness of all the strategic factors in play and the division of opinion within the Industry.

Assumption

This report is written on the assumption that both the provisions of the Wash Fishery Order 1992 and Eastern IFCA byelaws will be adhered to and fishing activity will be carried out in a legal and professional manner by all operators.

Recommendations

Recommendations have been formulated through risk analysis, dialogue with Industry representatives and with due regard to the duty of Eastern IFCA to successfully secure the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry

Members are recommended to:

- **Note the total adult stock is 11,159 tonnes in the Wash cockle fishery in 2013.**
- **Note the risks associated with each harvest method as presented at Appendices 2 and 3**
- **Note that the results of the 2013 cockle survey indicate that there is potential to support either a hand-worked fishery, a dredge fishery or a combination of both.**
- **Note the bespoke management requirements for Holbeach Sand to allow efficient exploitation outside of Air Weapons Range opening times.**

- **<u>Note</u> the options for operating the fishery are:**
    - **On Spring Tides**
    - **On a week day calendar (Monday to Friday)**
    - **On a week day calendar (Monday to Thursday)**
    - **A combination of calendar and tides (similar to 2012)**
- **<u>Note</u> the potential damage to site through inappropriate behaviour**

- **<u>Agree</u> to a Total Allowable Catch (TAC) of 3,720 tonnes**

- **<u>Agree</u> to open hand work only fishery at a time determined by the preference of the majority of the commercial fishing operators.**
- **<u>Agree</u> that should Holbeach Sand be opened for fishing by suction dredge to allow efficient harvesting to coincide with the range closed periods.**
- **<u>Agree</u> that the Dills Sand should be opened along with other beds**
- **<u>Approve</u> the delegation of powers to the Chief Executive Officer to immediately (without seven days' notice) close a fishery or parts of a fishery should malpractice and/or unacceptable levels of damage be observed.**
- **<u>Approve</u> a regular break in the fishery by directing that the fishery should operate four days a week based on appropriate tides.**
- **<u>Approve</u> an extension to a five day a week fishery of atypical mortality becomes a significant factor**
- **<u>Approve in principle</u> for Authority officers to introduce a trial to relay cockles from fast growing to slow growing beds as a measure to help reduce risk to densely stocked sands and to promote sustainability of stocks.**

Background

The Authority is the Grantee of the Wash Fishery Order 1992, this confers upon the Authority the right of a regulating fishery for the prescribed species with respect to the regulated fishery. The prescribed species include cockles, mussels and clams.

In exercising its right of a regulating cockle fishery the Authority must remain fully aware of its obligatory duties and responsibilities as set out in the Marine and Coastal Access Act 2009. The core duties of the Authority are as follows:

1) manage the exploitation of sea fisheries resources in its district; in doing so it 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

d) seek to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district

2) seek to ensure that the Wash Fishery Order 1992 is managed by the Authority in a manner that supports the local fishing industry whilst not having a detrimental impact upon the conservation features within a protected site

To manage its responsibilities set out under the Habitats Regulations 2010 as the 'Relevant Authority' the Authority has set out management policies as well as an agreed process to open a fishery ('The Cockle Charter'). It is against these criteria that the options presented below have been weighed and from which the recommendations of officers are derived.

Industry Perspective

Entitlement holders have been surveyed as to their opinions. This was followed by a meeting with the four Wash Fishermen's Associations on Tuesday 28 May 2013. Comments from both the written responses and the meeting have been factored in where appropriate.

Cockle Survey

The Senior Research Officer has reported back to the Authority his findings on the cockle survey conducted between March 25th and May 9th 2013. A full report is attached at Appendix one. From this survey, a summary of stocks was calculated (below)

	Tonnes of Stock
Total Adult Stock (≥14mm width)	**11,159 tonnes**
Total Juvenile Stock (≤14mm width)	**9,773 tonnes**
Total Stock (all sizes)	**20,932 tonnes**

Harvestable stocks have appeared to increase this year, these figures represent a strong growth from the 2010 (and some 2011) cohort. By comparison, juvenile stock (mostly 2011 and 12 cohorts) is smaller than they were in 2012.

The Total Allowable Catch (TAC) for the cockle fishery has traditionally been 33.3% of the adult (≥14mm width) cockle biomass. The remaining 66.6% is split between meeting Birds and Habitats regulation commitments and retaining a breeding stock. The adult biomass identified during the surveys was 11,159 tonnes. Based on this figure, **the TAC for the 2013/2014 fishery should be 3,720 tonnes.**

Determining management measures for the 2013/2014 cockle fishery

Consultation with the Industry has indicated that some fishermen are keen to pursue a dredge fishery, others a hand-worked and very few, both. This issue raises a significant amount of feeling and tension on both sides.

Some believe that dredging damages sands and hampers recovery. In addition, should dredge gear not be tuned correctly it can cause a cockle smash rate that is not sustainable. In order to protect juvenile cockle stocks, dredge fisheries are restricted to those beds that support a cockle stock composition consisting of at least a 70% adult cockle ($\geq$14mm width) biomass. Further, in order to protect the stable biota associated with muddy sediments, dredge fisheries are restricted to areas that are predominantly composed of mobile sandy sediments. In 2013, a small number of sands theoretically meet the criteria to operate a dredge fishery. These sands are: Wrangle, Friskney, Roger/Toft, Thief and Whiting Shoal.

Holbeach is an expansive sand, and when areas of predominately juvenile cockle are factored out (to protect juvenile stocks), this sand also meets the >70% adult cockle biomass criteria for dredging. Holbeach sand is part of a Ministry of Defence air weapons range and is closed to fishing activity when active[1]. This means that the cockles can only be exploited at night or over the weekend. Whilst there is no restriction to prevent hand–working, the limited availability of access means that the most efficient means to harvest the cockles is by suction dredge.

With regard to a hand-worked fishery, some stakeholders are of the opinion that the deep circular scarring caused by malpractice when conducting the process of 'prop washing', which accompanies a hand-worked fishery, and results in significant and lasting 'blowing out' rings is equally damaging. Furthermore, this practice can also cause large residual piles of cockles to be left on the sand which inevitably die as a result. Further damage to sands can be caused by the keel of boats attempting to move off sands before there is sufficient water to allow the vessel to fully refloat.

Risk

The Officers of the Authority would encourage Members to consider the risks involved in each of the management options of the fishery. The matrix at Appendix 2 captures the key risks that are judged likely to be introduced by both methods, dredge and hand-work and is provided to guide members in their decision making. The matrix is necessarily subjective in places but has been compiled drawing upon the experience and professional knowledge of Eastern IFCA staff and the commercial fishing community.

For completeness, a bespoke analysis of the enforcement risks associated with both methods of fishing is at Appendix 3. This is designed to inform Authority members that there are distinct differences in providing the expected protective effect between a dredge and hand worked fishery.

Options

Option 1 – Dredge fishery only

A dredge only fishery could enable the efficient gathering of the available TAC over a shorter space of time. It is attuned to the business models of the larger fishing operations within the Wash and promotes the viability of those businesses

[1] Opening times 1 May – 31 Aug; 0900-1700 Mon-Thu; 0900-1200 Fri

by enabling the efficient harvest of cockles at maximum yield. It allows catch volumes to match the output volumes of the processing plants thereby promoting end to end efficiency across the cockle production process.

The last dredge fishery is the Wash was conducted in 2008 and there is some anecdotal evidence that following a dredge fishery the grounds have taken a longer period to recover and regain viability. It should be noted that a significant proportion of the commercial sector is fundamentally opposed to a dredge fishery citing the damage described above and previous behaviours as causal factors in the decline of viable cockle stocks.

As the fishery will be conducted within A European Marine Site there is a requirement to apply to Natural England to secure the requisite permissions to conduct the fishery. In making application it will need to be demonstrated that the fishery will not hazard the overall conservation integrity of the site. Whilst it may be possible to gain permissions for some grounds comprising predominantly mobile sandy sediments, it will not be possible for all.

The tempo, intensity and highly dynamic nature of a dredge fishery will present enforcement challenges to Authority staff that need to be factored in to any decision. Previously, the Authority has mobilised the majority of staff to manage the fishery for its duration. Noting the increase in routine workload for Authority officers it will not be possible to commit the majority of staff resources to managing the fishery and still deliver other mandated outputs in 2013. Should a dredge fishery be preferred then the Authority will have to attempt to broker revised delivery timescales for which success cannot be guaranteed.

Given the inherent efficiency of a dredge fishery any employment opportunities associated with the fishery are likely to be shorter term and may introduce socio-economic factors that will require consideration. A rapid fishery does not suit all business models and for the smaller operators does introduce risk in terms of continuity of earnings throughout the year. Similarly, a relatively rapid cockle fishery may introduce a risk of displacement and further threats to the sustainability of other stocks as fishing operators seek to supplement their income from other fishing activities.

Applying the requisite enforcement effect to the fishery is challenging and is expanded upon in Appendix 3. In short, policing a dredge fishery will result in the mobilisation of all Eastern IFCA staff resource which will hazard the ability to meet other outputs mandated in 2013.

Whilst it is undoubtedly a very efficient and modern means to gather the maximum amount of cockles in the minimum time, a dredge fishery does introduce a number of other risks (see Appendix 2 & 3) that directly challenge the ability of Eastern IFCA to meet its remit of:

- healthy seas (need to protect the marine environment from, or promote its recovery from, the effects of such exploitation);
- sustainable fisheries (ensure that the exploitation of sea fisheries resources is carried out in a sustainable way); and

- a viable industry (balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district; take steps necessary for the purpose of making a contribution to the achievement of sustainable development).

It is for these reasons that this option is not recommended for any sands other than Holbeach where limited access drives a bespoke requirement for a suction dredge fishery.

Option 2 – Hand-worked fishery only
A hand worked fishery will enable the gathering of the TAC and will also provide an opportunity for a fishery of greater duration presenting business opportunities across the breadth of the commercial cockle fishing sector. Whilst it will not play to the strengths of the business models of the larger fishing operators, it is judged not to introduce any hazard to the overall viability of any business model.

There is distinct risk of damage with a hand–worked fishery which will need to be closely monitored. Because the handwork fishery is being consented within a Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Special Area of Conservation (SAC), care should be taken not to cause unnecessary disturbance to the site. The officers are aware that most fishermen participating in the handwork fishery are using the wash from their vessel's propellers prior to settling on the sand in order to remove the top layer of sand and shell away from the area they are going to be harvesting. Some degree of prop-washing may be required on all but the most dense pockets of cockles. This makes the cockles easier to access, and also enables the retention of pools of water in which the cockles can be washed. A code of best practice associated with prop washing has been drawn up which, if adhered to, reduces disturbance from this activity to acceptable levels. It is the officers' opinion that this activity is not detrimental to the site, provided it is conducted in a responsible manner that does not cause excessive physical disturbance to the seabed.

However, hand-working is laborious and previous behaviours have demonstrated that fishing operators are willing to use malpractice such as 'blowing out'[2] in order to exploit the resources available by the most effortless means. "Blowing out" is banned as it is highly damaging to the site features. It is to be stressed that Regulation No.1 of the Wash Fishery Order 1992 shall be applied to the following effect:
No vessel participating in the hand-worked cockle fishery may employ any equipment that either fixes the vessel to the seabed or slows the vessel's movement while the vessel's engine is running. This includes anchors, sea anchors, drogues or any other equipment that could be used as an anchor or sea anchor.

To monitor behaviours, the tempo and relatively fixed nature of hand worked fishing operations allows for more sustained and sustainable enforcement options, albeit over a longer period of time. In addition, there will not be a need to

[2] an extreme form of prop washing using anchors

mobilise the majority of EIFCA staff which will help mitigate against any risks introduced to the delivery of other IFCA core outputs, particularly the introduction of fisheries management measures for European Marine Site features mandated to be delivered by the end of 2013.

It is assessed that Natural England will apply a similar approach to the fishery as it did last year and securing the requisite permissions to proceed is judged to be relatively straightforward.

In socio-economic terms, this option will provide for greater and more sustained employment opportunities across the commercial sector and may assist in reducing the impact of displacement caused by lack of alternative fishing opportunities.

It is proposed that a hand work fishery presents the best opportunity for Eastern IFCA to deliver against expectation to ensure:

- healthy seas (need to protect the marine environment from, or promote its recovery from, the effects of such exploitation);
- sustainable fisheries (ensure that the exploitation of sea fisheries resources is carried out in a sustainable way); and
- a viable industry (balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district; take steps necessary for the purpose of making a contribution to the achievement of sustainable development).

As a result, assuming appropriate checks and balances being in place, it is recommended this option is selected as the most viable means to exploit the cockle stock available in 2013 and meet the wider duties and responsibilities of the Authority.

Option 3 – Combined dredge/hand-worked fishery

This option provides for a blend between option 1 and 2 above whereby individual sands will be identified for different methods of exploitation. The opportunities and threats that present themselves are the same as outlined above. The risks associated with individual fishing techniques are exacerbated when seeking to manage both methods concurrently.

Owing to the added complexities of managing two concurrent methods of cockle exploitation this option is not recommended.

Days of Operation

Over the last two seasons, days of operation have been limited. In 2011 there were breaks around small tides, while in 2012 a four day a week fishery was operated with some adjustment for tidal changes (still averaging four days a week). Comments received included that this limitation of days would:

- Allow the sands to recover

- Extend the duration of the fishery
- Allow Shrimp growth to occur, increasing Shrimp landings later in the season
- Allow for periods of enforced rest for both fishing operators and EIFCA staff to mitigate against Health and safety risk introduced through over-tiredness.
- Provide a schedule for processors and other industries.

Industry representatives indicated a preference for a four day fishery based upon appropriate tidal conditions with the option to extend to a five day a week fishery should atypical mortality become a factor.

Opening Date of the fishery

The consultation carried out with the industry has indicated that there is a split in preference among entitlement holders. This is similar to last year which saw preference for an early hand working start, and a later dredge fishery.

The opening date of the fishery will depend upon:

1. The advice of Natural England following their appraisal of the Habitats Regulation Assessment; and
2. In accordance with the Cockle Charter, once agreement has been reached with Natural England, the Authority will provide at least seven calendar days' notice of the opening date to allow fishermen to prepare their vessels and obtain a licence.

In preparation of this, the Authority has already submitted the Habitats Regulation Assessment for hand working to Natural England (NE) so this will not delay the opening of the fishery.

Authority Officers have not prepared an assessment for a dredge fishery at this time. Noting the considerable notice of dredge fishing that would be required by the Industry to allow time for the renewal, refurbishment and fitting of dredging gear, this would allow sufficient time for associated permissions to be sought from NE.

Division of Total Allowable Catch (TAC)

If the Authority opens both the dredge and hand-worked fisheries it will be necessary to determine the division of the TAC between the two fisheries. In the past, the TAC has been divided between dredging and hand working using an arbitrary percentage figure. This has varied from 50%-95% allocated to dredging. As any dredge fishery will be limited to particular sands it is possible to allocate TAC according to the sands that the Authority opens to the dredge fishery and upon each of those sands contribution towards the overall TAC. The table below shows the sands that have been identified as being able to support a dredge fishery, the adult cockle biomass within that sand and their contribution towards the TAC. Should all six of the beds below be opened to the dredge fishery, based on their contribution towards the TAC, the TAC for any dredge fishery would be 963 tonnes (26% of the total TAC).

Sand	Adult Tonnage	TAC
Holbeach (Open)	957	319
Wrangle	709	236
Friskney (+ext)	522	174
Roger/Toft	538	179
Thief	53	18
Whiting Shoal	111	37
Total Tonnage	**2890**	**963**

Management of the Dills

The surveys have highlighted a management dilemma on the Dills sand that requires careful consideration by the members. The cockles on this sand are predominantly from the 2011 year-class cohort, rather than the 2010 year-class cohort that dominates most of the other sands. If atypical mortality is high this summer among the 2010 year-class cohort, the stocks on the Dills would contribute heavily towards the 2014 fishery. As only a small proportion of the cockles on this sand at the time of the survey had attained a size of 14mm width, it would normally make sense to keep this bed closed. The stocks on this bed, however, are present in high densities. As they grow they are very likely to displace each other as available space becomes a limiting factor. This is known as "ridging-out", and if left un-thinned from fishing could result in high mortalities. Further, the size range of the cockles on this bed is such that some of them could be susceptible to losses from atypical mortality.

A management option is for this sand should to be kept temporarily closed with the power to the CEO to open the bed quickly, should monitoring highlight mortalities, delegated to the CEO. However, Industry representatives preferred for the bed to be opened in normal course for exploitation. A third option to transfer cockles from dense patches on the Dills to beds where cockles experience slower growth was discussed and recommended for further consideration and development by the Authority.

Daily Quota

In accordance with Regulation Number 2 of the Wash Fishery Order 1992, the daily quota per vessel will be

Quota Limitation	Method
2 Tonnes	Hand worked
4 tonnes	Dredge

Catch Returns Data

In order to manage the TAC and monitor where cockles have been lost or harvested it is important that fishermen provide to Eastern IFCA the details of their fishing activities. A catch return book and pre-paid envelopes will be

distributed to fishermen on payment of their licence money. Catch returns are expected weekly. Entitlement holders who fail to return catch forms by the allotted day could see their entitlement licence suspended or for repeat infractions, cancelled. Skippers working on behalf of entitlement holders could see financial penalties used.

Appendices

1. Summary of the 2013 Annual Spring Cockle Survey.
2. Industry consultation responses
3. Overall Risk matrix
4. Wash Cockle Fishery Enforcement Capability Risk Assessment

Background documents

Wash Fishery Order 1992
Eastern IFCA byelaws
Minutes Wash fishermen's Association meeting 28 May 2013

Action Item 5

APPENDIX 1

Marine Protected Area Sub Committee meeting

5 June 2013

SUMMARY OF THE 2013 ANNUAL SPRING COCKLE SURVEYS

The Authority conducted the annual spring cockle surveys between March 25th and May 9th. The timing of these surveys is consistent with the majority of Eastern-IFCA's and ESFJC's previous spring cockle surveys, and allows sufficient time for the data to be analysed and an Appropriate Assessment to be conducted for potentially a mid-June opening. Some industry members expressed a concern that due to the prolonged winter temperatures, the surveys should have been delayed in order to allow a longer period of growth. As recent years have shown the cockles are vulnerable to high "atypical" mortality rates during warm periods, officers considered the risk associated with delaying the surveys outweighed any benefits.

During the course of the surveys, 1,295 stations from a total of 21 sands were sampled. Figures 1 and 2 show the distributions of adult and juvenile stocks found during these surveys, while table 1 provides a summary of these stocks. From this table the current stocks can be seen to be at the following levels:

Total Adult Stock (≥14mm width) 11,159 tonnes

Total Juvenile Stock (<14mm width) 9,773 tonnes

Total Stock (all sizes) 20,932 tonnes

Although there had been a successful fishery and additional "atypical" mortality losses during 2012, the total stock was found to have only slightly declined from the 21,108 tonnes recorded following the 2012 spring surveys. This is mainly due to the growth of cockles from the strong 2010 year-class cohort compensating for the losses resulting from the fishery and natural mortality.

When surveyed in 2012 only the cockles on the faster growing beds had attained a size of 14mm width. Having had an additional year's growth, a more widespread distribution of the cockles from this cohort have now achieved 14mm. This has enabled the stock of cockles ≥14mm width to increase from 7,107 tonnes (34% of the total stock) in 2012 to 11,159 tonnes (53% of the total stock) in 2013. Although this increase in adult stocks will benefit the fishery this year by providing a larger TAC than was available last year, it should be highlighted that with fewer juveniles in the population, recovery from this year's fishery will be slower. Additionally, whereas most of the "atypical" mortalities had occurred on Wrangle in 2012, the stock composition suggests that the cockles on several of the beds will be vulnerable to high losses this coming summer. It is anticipated that unless we receive a significant spatfall this year, the stocks will decline by next year.

Table 1 provides details of the cockle stocks on each of the regulated beds. In areas of better cockle growth, where the stocks had predominantly attained

14mm width during 2012, fishing effort combined with "atypical" mortality had caused the stocks to decline. This was particularly noticeable on Boston Main where the beds had declined from a total stock of 6,877 tonnes to 2,508 tonnes. Although a high proportion of the stocks in this area have now attained 14mm width, at Friskney and Wrangle they are only present in low densities. At Butterwick, where mortality had been lower, the stocks are present in fishable densities.

Elsewhere, where growth had been slower, the 2010 year-class cohort was found to have survived better during 2012. Their growth during the past year has subsequently enabled several of these beds to increase in biomass since the previous survey. It is anticipated that in addition to Butterwick, the stocks on the Roger, Holbeach, Inner Westmark Knock, Breast and Daseley's sands could all support successful fisheries. Care will need to be taken when fishing on these beds, however, as they still support some dense patches of smaller cockles.

In addition to these beds, the Dills supports a dense patch of 2011 year-class cockles. Interestingly, whereas the previous large settlement on this bed in 2006 had taken three years to attain 14mm width, some of these cockles have this year reached 14mm after just two years. From a management perspective it is difficult knowing how best to manage the stocks on this bed this year. Because the majority of the cockles on this bed are still smaller than 14mm width, keeping the bed closed for a year would enable them time to reach commercial size. Further, as many of the 2010 year-class cockles elsewhere are likely to be either fished or die this summer, the stocks on this bed could represent the bulk of the 2014 fishery. Although these are compelling arguments for keeping the Dills bed closed this year, such a decision does itself carry a large risk. The cockles on the Dills are present in high densities that could lead to significant losses from "ridging" if they remain closed. Further, they are of a size that could potentially be vulnerable to suffering atypical mortality losses too. As part of the consultation with the industry concerning the 2013/2014 cockle fishery, the Authority will be seeking the opinions of industry members regarding the management of this bed.

DETERMINING MANAGEMENT MEASURES FOR THE 2013/2014 COCKLE FISHERY

The Authority encourages a co-management approach with regard to the Wash shellfisheries. As such the Authority will be consulting with all Wash Fishery Order 1992 Entitlement Holders regarding the management of the 2013/2014 cockle fishery. All Entitlement Holders will be provided with a consultation form with which to provide their opinions on various management measures.

In addition to considering the views of the Entitlement Holders, when determining management measures for the cockle fisheries in the Wash, the Authority must comply with local byelaws and the Wash Fishery Order regulations. Further, as the Wash is designated a Special Area of Conservation (SAC) and a Site of Special Scientific Interest (SSSI), management measures applied to the shellfisheries must not have a detrimental impact to the Conservation Objectives for the site. To this end, when determining management measures for theses fisheries, the Authority follows a number of management policies that were agreed in 2007 with Natural England and industry representatives. These policies have helped guide the following proposals for the 2013/2014 cockle fishery.

Total Allowable Catch (TAC)

The TAC for the cockle fishery has traditionally been 33.3% of the adult (≥14mm width) cockle biomass. The adult biomass identified during the surveys was 11,159 tonnes. Based on this figure, **the TAC for the 2013/2014 fishery should be 3,720 tonnes**

Proposed Fisheries – Dredge Fishery

In order to protect juvenile cockle stocks, dredge fisheries are restricted to those beds that support a cockle stock composition consisting of at least a 70% adult cockle (≥14mm width) biomass. Further, in order to protect the stable biota associated with muddy sediments, dredge fisheries are restricted to areas that are predominantly composed of mobile sandy sediments.

From Table 1 it can be seen that the following beds achieve the first criteria of having at least a 70% adult biomass:

Butterwick, Wrangle, Friskney, Roger/Toft, Thief, Whiting Shoal, Peter Black.

Of these seven beds, the cockles on Wrangle, Friskney, Roger/Toft, Thief and Whiting Shoal are situated in areas that support predominantly mobile sandy sediments. As such, they fulfil both policy measures and could be opened to dredging. The cockles situated at Butterwick and Peter Black are in areas predominantly supporting stable muddy sediments. As such, these beds could not be opened to a dredge fishery without breaching the shellfish management policies.

In addition to these areas, significant numbers of cockles are situated in Holbeach. This is a large survey area that includes mixtures of both sandy and muddy sediments. Overall, this bed only supports an adult biomass of 44%, which falls below the policy threshold. Holbeach does contain a large discrete sandy area, however, that has been opened for dredging in the past. Within the confines of this discrete area the proportion of adult cockles within the population is 76%. This area, which supports a stock of 1,253 tonnes of cockles, could be opened to the dredge fishery.

Because the Holbeach bed is within a bombing range, access for fishing is greatly restricted making it more suitable for dredging than hand-working.

Proposed Fisheries – Hand-worked Fishery

Because it is possible for the handwork fishery to identify and operate within discrete patches of larger cockles, it is possible to open beds to the Hand-worked fishery that fall below the 70% adult biomass threshold. It is proposed, therefore, that **barring some exceptions* (see below), all beds within the Regulated Fishery of the Wash should be open to the Handwork Cockle Fishery.**

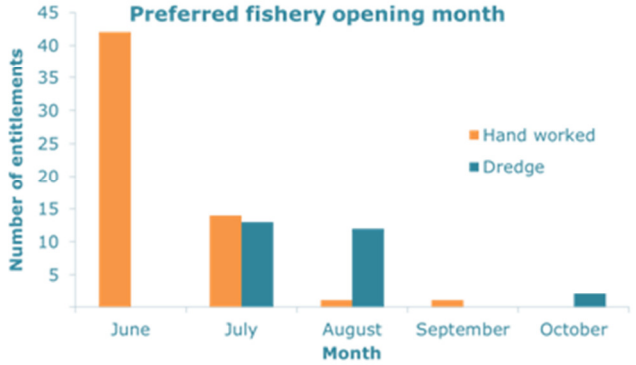
***** There are localised patches on some of the beds that support high densities of 2011 and/or 2012 year-class juvenile cockles. In order to protect these juvenile stocks it is proposed **closed areas should be implemented around areas of high-density juvenile cockles.** Pending further discussion, this could include the cockle stocks situated on the Dills bed.

Action Item 5 **APPENDIX 2**

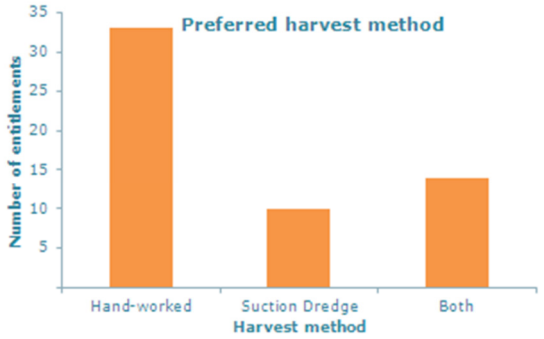
Marine Protected Area Sub Committee meeting

5 June 2013

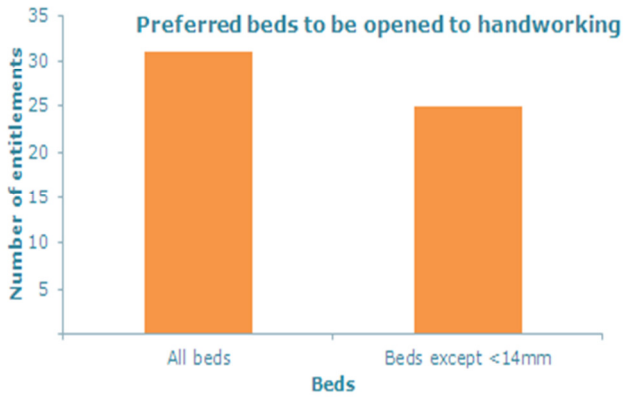
Month of Opening



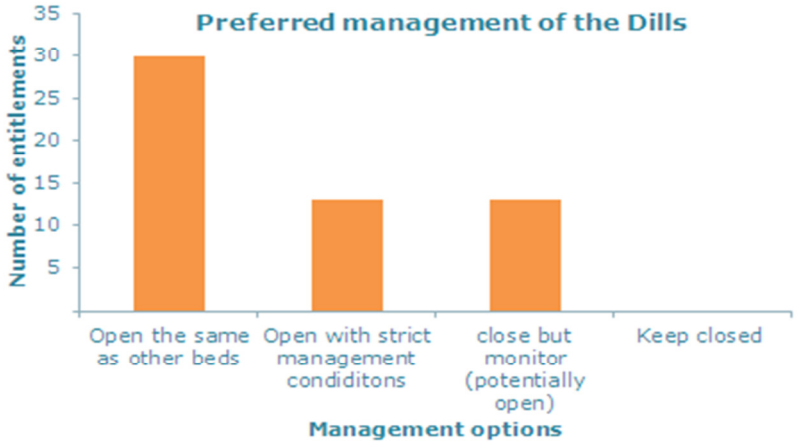
Harvest Method



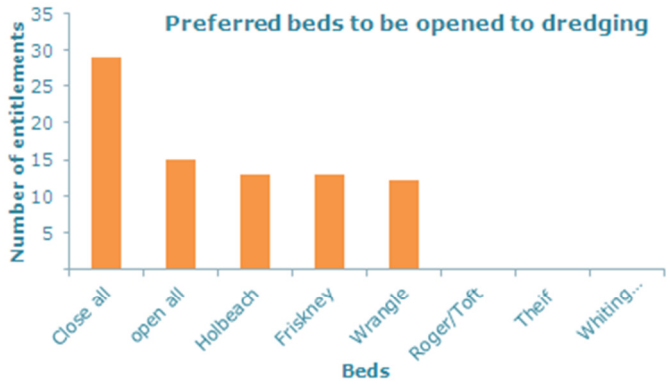
Preferred Beds – Handworking



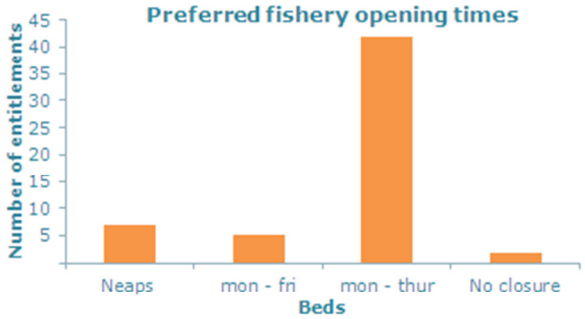
Management of The Dills



Preferred Beds – Dredging



Preferred Opening Times



Action Item 5 **APPENDIX 3**

Marine Protected Area Sub Committee meeting

5 June 2013

Key:

	Negligible risk
	Manageable risk
	Evident risk
	Significant risk

Liability of Introduction of Risk					
IFCA core output	**Risk**		**Dredge**	**Hand-work**	**Comment**
Healthy Seas	Damage to European Marine Site (EMS)				It is judged that mechanical dredge fishing introduces an overall greater risk of damage to the Wash EMS. This judgement is derived from the assessments below.
	Disturbance	Birds			There is the potential for a hand-worked fishery to have the greater disturbance effect on birds owing to the nature and duration of the fishing activity. However, this is able to be mitigated by the use of closed areas and appropriate enforcement presence and monitoring. Dredge fishing although causing a disturbance effect is more transitory and therefore less of a risk.

		Seals			A hand-worked fishery if coincident with the locations of seal populations will have an effect but this can be mitigated by the use of closed area A dredge fishery is unlikely to cause any disturbance to seal populations.
		Mussel beds			It is judged that there is a risk of damage to adjacent mussel beds if dredges are not controlled precisely and past experience has demonstrated that there is a distinct likelihood. Hand-working will have a negligible impact upon adjacent mussel beds.
	Excessive breakage				The risk of excessive breakage rates is significant with a dredge fishery and IFCA officers will require to inspect all dredge equipment at least once to assess operability and issue the requisite certification. Should excessive breakage rates remain unchecked there is a direct correlation with stocks available to support bird stocks and will need to be reflected in the determination of Total Allowable Catch. Hand-working will not introduce a risk of excessive breakage.
	Prop wash impact				The key risk associated with a hand worked fishery is the routine use of 'prop washing' or 'blowing out' as a method of gathering cockles before harvesting. It has been used regularly within the Wash and causes deep and lasting impact upon the grounds which is judged to

				be at least as damaging as unregulated dredging. There is no risk of prop wash with a dredge fishery.
Sustainable fisheries	Threat to long term sustainability of stocks			On balance, using the detail listed below, it is judged that a dredge fishery conducted in a manner similar to that experienced previously within the Wash will introduce the most risk to the long term sustainability of stocks.
	Overfishing			The tempo, intensity and highly dynamic nature of a dredge fishery is judged to introduce a significant risk of over fishing either through over exploitation of beds that have been opened or via the opportunistic exploitation of beds situated on the inbound/outbound routes from landing ports. Given the Enforcement resources currently available to Eastern IFCA, the ability to apply the requisite presence and monitoring to reduce this risk is constrained. In previous years all IFCA staff were routinely mobilised to provide a presence both at sea and in landing ports. With the scale of competing outputs now expected of the Authority, it will not be possible to commit the majority of staff resources to the fishery and also preserve the timely delivery of mandated outputs. Conversely, a hand worked fishery is operated at a lesser tempo and is a more fixed activity that will enable IFCA staff to apply a sustained and sustainable monitoring effect and thereby mitigate any risk of overfishing

	Fishing in prohibited areas			There is a greater risk of fishing in prohibited areas associated with a dredge fishery. For staff resource reasons outline above the risk is not able to be mitigated in any meaningful way which drives an assessment of significant risk. By its nature a hand worked fishery is more fixed activity and any risk of fishing in prohibited areas can be mitigated relatively easily.
	Breach of fishing gear requirements			The risk introduced through any breach of fishing gear requirements is judged to be greater for a dredge fishery by dint of the rate of fishing enabled by mechanical means. The last dredge fishery was conducted in 2008 and gear would ideally be fully set to work and tested in advance. This is not possible and members should note that all gear must be inspected by IFCA officers and certified to assure fitness for purpose. The logistics of conducting this activity on c50 fishing vessels within the requisite timescales will enable some mitigation of the risk but it is judged not to be material to the overall judgement. The routine use of anchors and/or bags to enable prop washing is a distinct risk associated with a hand worked fishery but can be mitigated through presence and monitoring.
	Excessive breakage			The excessive breakage rates that may be associated with a dredge fishery will hazard the sustainability of stocks. There is no correlation with a hand-worked fishery.

	Trans-shipping			There is a risk of trans-shipping with both types of fishery but it is considered that it is able to be mitigated more successfully for the more predictable and observable hand–worked method.
	Displacement			A dredge fishery by its nature will cause the stocks of cockle to be harvested more quickly which may lead to the fishing community seeking to exploit other fisheries within the district may introduce a risk of displacement. The greater duration of a hand-worked fishery is likely to occupy a greater number of fishing operators for a longer period and is judged to present a lesser risk.
Viable industry	Socio-Economic			The shorter duration of a dredge fishery introduces a greater risk of socio-economic impact through foreshortened employment opportunities. Conversely, a hand worked fishery provides for sustained employment opportunities.
	Regulatory interference			The requirement for EIFCA offices to individually board each fishing vessel to inspect all dredge gear will inevitably drive a higher risk of interference with fishing operations. This will not be the case for a hand worked fishery as routine presence and monitoring will be sufficient to assess compliance.

Action Item 5 **APPENDIX 4**

Marine Protected Area Sub Committee meeting

5 June 2013

Wash Cockle Fishery Enforcement Capability Risk Assessment

Introduction

The cockle survey report for 2013 indicates that there is the potential for either a hand worked or a dredge fishery or a combination of both. Previous experience would suggest that each option will present different challenges in terms of ensuring compliance with the Wash Fishery Order (WFO) and associated regulatory requirements. The purpose of this risk assessment is to inform the decision making process on the type and extent of the fishery for 2013.

It is relevant to note that the fishery takes place in a European Marine Site and as such there is an obligation upon the IFCA to ensure that it operates in a proper manner. It could be said that the increasing scrutiny surrounding the management of such sites provides an additional focus on this responsibility and it should be noted that there has previously been a challenge to the hand worked fishery in the form of legal correspondence complaining about the level of damage to sandbanks in the Wash.

It is also relevant to note that there hasn't been a dredge fishery in the Wash since 2008 and that since then there have been some significant changes in enforcement capability.

Better Regulation and Enforcement

Eastern IFCA recognises that the best way to achieve compliance with the law in the first place is to ensure, by guidance and advice, that those carrying out regulated activities understand the nature and extent of their responsibilities and comply voluntarily.

The Legislative and Regulatory Reform Act 2006 placed the seven Hampton principles of good regulation on a statutory footing. The Act introduced a new code of practice for regulators known as the Regulators' Compliance Code. The Code, which came into force on 8 April 2008, specifies the regulatory functions to which the seven principles should apply.

The effective use of enforcement powers in regulatory schemes is important to secure compliance with the law and, where necessary, to ensure that those who have not complied may be held to account. Enforcing authorities need to take into account the need to maintain a balance between enforcement and other advisory activities when allocating resources.

i) Proportionality

Proportionality in securing compliance will generally involve taking account of the degree of the risk of harm caused by non-compliance. Sometimes, however, the precautionary principle will require enforcement action to be taken even though the risks may be uncertain.

ii) Consistency

Consistency means taking a similar approach in similar cases to achieve similar outcomes within which a degree of discretion is available. There are many variables to be taken into account in using discretion to achieve an outcome, such as the attitude and competence of the regulated person to bringing about the outcome sought.

iii) Transparency

Transparency means helping those regulated to comprehend what is required of them at the outset and setting out what they may expect from Eastern IFCA in return. It also involves making clear what remedial action is required from the regulated person and providing details of any rights of appeal etc.

iv) Targeting

Targeting of enforcement action means prioritising and directing regulatory effort effectively. This means concentrating on the activities which create the most serious risk, either because the nature of the activity is inherently high-risk or because of a lack of appropriate controls or appropriate attitude in other less high-risk activities. It also involves identifying and focusing on those responsible for the risk.

Wash Fishery

Previous experience of regulating the Wash fishery indicates that many within the fishing community work responsibly and comply with the regulatory framework. However, it is also clear that there are some who are prepared to act less responsibly (e.g. excessive damage to sandbanks during 2012). This combined with the sensitive nature of the environment in the Wash means that a precautionary approach to enforcement activity is necessary to ensure compliance with regulatory requirements.

Transgressions

The potential transgressions of the regulatory framework will vary according to the type of fishery that is agreed but the primary issues are judged to be as follows:

Hand Worked

- Exceeding daily landings quota (2000 kg)
- Fishing in prohibited areas
- Use of anchor or bag when prop washing

Dredge

- Exceeding daily landings quota (4000 kg)
- Breach of fishing gear requirements
- Breakage rates in excess of 10%
- Fishing in prohibited areas
- Trans-shipping

It is judged that breach of daily quota, fishing in prohibited areas and trans-shipping are a higher risk in a dredge fishery due to the ease with which they can be committed and the ability to fish for higher volumes in a shorter space of time.

The risk of excessive damage to sandbanks exists for both fisheries. With a hand worked fishery the risk arises from excessive 'prop-washing' or driving off sands before there is sufficient water to do so, both of which occurred during the 2012 fishery. With a dredge

fishery the risk arises from fishing on closed banks with muddy sediment, where the damage caused can persist for some considerable time.

Resources

As a consequence of the transition from a Sea Fisheries Committee to an IFCA the number of warranted officers on establishment has reduced from 16 officers (including the CEO and Deputy CEO) to 10 including the Head of Marine Protection (currently 8 due to new members of staff). Whilst it is possible to supplement officers with colleagues from the research and Environment teams the reality is that the majority of these staff are not appropriately trained and are restricted to acting in a support capacity.

Changes in the enforcement environment also resulted in the sale of the 24m mother/daughter enforcement vessel, *Protector III*, and an interim cabin RIB, *FPV John Allen*, has only recently been procured. The RIB *Pisces* is also available for deployment but has some limitations in terms of size and sea keeping capability.

The inevitable consequences of these changes are that previous tactics employed for regulating the fishery, such as a sustained presence at sea, are no longer sustainable and it will not be possible to provide a significant presence for any period of time.

Tactical Options

The tactical options employed to regulate the fishery are similar for both types but the extent to which they are required will be influenced by the type of fishery (dredge v hand worked), the level of resource available and the risk of non-compliance. The primary tactical options are:

- Encourage compliance through education, guidance and advice
- Ensuring compliance with WFO 1992 licensing requirements
- Monitor landings through physical presence in ports (Boston and Kings Lynn)
- Monitor landings through records from Processors
- Inspection of gear in port
- Inspection of gear at sea
- Monitor activity at sea through continued physical presence
- Monitor activity at sea through targeted physical presence
- Monitoring breakage rates (dredge fishery)

Logistical Considerations

Hand Worked

The key times for an enforcement presence at sea for a hand worked fishery are when vessels are 'laying on' the sands or re-floating with the tide, when excessive damage can be caused by excessive 'prop-washing' or by vessels getting underway before there is sufficient water.

The key time for presence in ports is when vessels are landing the day's catch.

Given that fishing activity is usually conducted over a single tide during daylight hours each day and that fishing activity is usually restricted to four days at a time an effective enforcement presence is more easily achieved. This is balanced against the fact that a hand worked fishery usually goes on for a significant period of time (5 – 6 months in 2013).

Dredge

A dredge fishery normally operates over two tides each day for a four day period. The nature of the fishery means that both landings and fishing at sea can occur throughout the 24 hour period, with no easily identified key times.

The 24 hour nature of the fishery means that an effective enforcement presence is more difficult and that a sustained presence is unachievable with existing resource levels. This is balanced against the fact that a dredge fishery is usually over fairly quickly, sometimes a matter of weeks as opposed to months.

An important factor to consider in relation to a dredge fishery is the regulation of breakage rates. The requirement to meet breakage rates of 10% or less is contained within Byelaw 3, which provides that a certificate of approval from the Authority is required for fishing gear used to fish for molluscan shellfish, Such a certificate is valid until 31st December following approval and such approval will take account of the performance and assessment during inspection of the gear whilst in operation, or that of a similar design, during the preceding 12 months. New fishing gear may be given a provisional certificate of approval for a period of one month in order to permit assessment.

Given that there hasn't been a dredge fishery since 2008 it is unlikely that any current certificates of approval are in existence. The implications of this are that it would be necessary to issue provisional certificates to a large number of vessels (circa 40 or 50) with a view to undertaking inspections during the first month of the fishery. Previous experience indicates that this would require the deployment of *RV Three Counties* with a crew of six as a working platform, together with the RIB Pisces to undertake inspections. It is estimated that it can take up to two weeks to undertake first inspections and that a number of vessels will fail and require a further inspection. Previous practice has been to undertake up to two additional inspections, taking the time required to complete the exercise to 3-4 weeks.

Operating Hazards

Operations at sea inevitably entail an element of risk, which is mitigated through appropriate risk assessments and the introduction of mitigating factors to reduce or manage the risk. It is judged that the level of risk posed by a hand-worked fishery is relatively low as fishing vessels are afloat and underway only on passage to and from port as they dry out on the sands in order to undertake hand raking. Additionally, boarding operations are not usually a high priority as their utility as a tactical option is limited.

Operations at sea during a dredge fishery are a higher risk due to vessels being afloat and underway whilst fishing. Previous observed behaviours have been for large numbers of vessels to be circling in close proximity to each other as they undertake dredging operations both during daylight hours and during hours of darkness. Whilst it can be argued that fishing skippers are skilled at helming their vessels, such practices inevitably increase the risk of collision and they make boarding operations difficult, particularly in adverse weather conditions.

Risk Assessment

The most commonly used model for risks assessments is to map likelihood of occurrence against the impact of something occurring. It is suggested that the factors for consideration here do not lend themselves to this model as it is necessary to consider the capacity and capability of Eastern IFCA to implement tactical options as well as considering the likelihood of transgressions and their potential impact. To achieve this would require a complex model so instead a relatively simple model has been use to illustrate the factors for consideration against each type of fishery.

Factor	**Hand worked**	**Dredge**	**Comment**
Risk of transgression			Previous experience suggests that the risk of fishing in prohibited areas, trans-shipping and breaching daily quotas are all higher for a dredge fishery
Resources			Resource requirements for a dredge fishery are significantly higher, particularly in relation to addressing smash rates
Logistics			The 24 hour nature of a dredge fishery increases resource requirements. Undertaking gear inspections would be particularly resource intensive
Operating hazards			Navigation/fishing practices by fishing vessels combined with weather conditions and the hours of darkness increase the level of risk for boardings

Key

Level	Descriptor
	Low level of risk Low risk of occurrence Able to match resource to demand
	Medium level of risk Medium risk of occurrence Difficult to match resource to demand
	High level of risk High risk of occurrence Unable to match resource to demand

Discussion

The fact that the Wash cockle fishery takes place in a European Marine Site combined with evidence of transgressions by a small number of fishers suggests that a precautionary approach to enforcement is necessary. The practical implications of this are that the described tactical options will be need to be employed to ensure that there is effective regulation of the fishery. Whilst this will be undertaken proportionately it will still represent a significant commitment for the Marine Protection team.

It is also clear that the ability of Eastern IFCA to undertake enforcement activity is significantly reduced, in comparison with that which existed previously, as a consequence of the wider responsibilities of an IFCA when compared with a Sea Fisheries Committee.

Changes in approach such as a more targeted approach to monitoring landings and presence at sea combined with encouraging compliance through education, guidance and advice may help to mitigate this change in capability.

Conclusion

It can be seen that from an enforcement perspective a dredge fishery represents a higher risk and would be more difficult to regulate than a hand worked fishery. A combination of both fisheries running concurrently would further increase the stretch on resources and capability.