

NWIFCA Quarterly Meeting
12th December 2014: 11:00 a.m.

AGENDA
ITEM NO.
10

SCIENCE REPORT
28TH AUGUST – 21ST NOVEMBER 2014

GENERAL

Much of the quarter has seen the Science team's work dominated by the seed mussel fisheries in Morecambe Bay. Further progress has been made on the Defra Review of Fisheries Management in European Marine Sites and input into the NWIFCA Byelaw Review process.

SURVEY AND FISHERIES WORK

Cockle and Mussel Fisheries in the NWIFCA District

Disappointingly there has been no sign of improvement in the cockle or mussel fisheries in the southern part of the District (Dee to Ribble Estuary). IFCOs regularly report to the Science Team on the state of the beds and to date there has been no sign of any significant spatfall of either species suggesting it is unlikely there will be any fisheries there in 2015.

Dee cockles managed by Natural Resources Wales under the Dee Cockle Order

Ms Temple assisted with a cockle survey carried out by Natural Resources Wales on 8th September on Salisbury Middle Bank in the Dee to ascertain how NRW carry out cockle stock assessments and gain an understanding of these surveys. It was a useful exercise to develop relations between the two organisations, and it was found that they use the same methodology as NWIFCA Science Team. Results from the survey showed that cockle fishing for licensed gatherers in the Dee could continue at the current TAC for the remainder of the season.

Perch Scar seed mussel, Fleetwood

Following discussion at the TSB meeting on 15th August 2014, it was ascertained that there was indeed interest from hand-gatherers for the potential seed mussel fishery at Perch Scar. A meeting was held between IFCOs, the Senior Scientist and Wyre Borough Council to discuss and agree management issues, particularly in relation to fishermen's access. An HRA, authorisation and notice to fishermen were produced and the Perch Scar seed mussel fishery (Fig. 1) was opened to hand gatherers on 22nd October 2014. The fishery was not prosecuted by hand-gatherers within a week of opening and therefore it was authorised as a small dredge fishery (one vessel) as agreed at the TSB meeting beginning on 12th November. Fishing began on 15th November, it was fished over two tides and a total of 110 tonnes were fished. Operators informed the IFCA on 18th November they will not be returning this year.

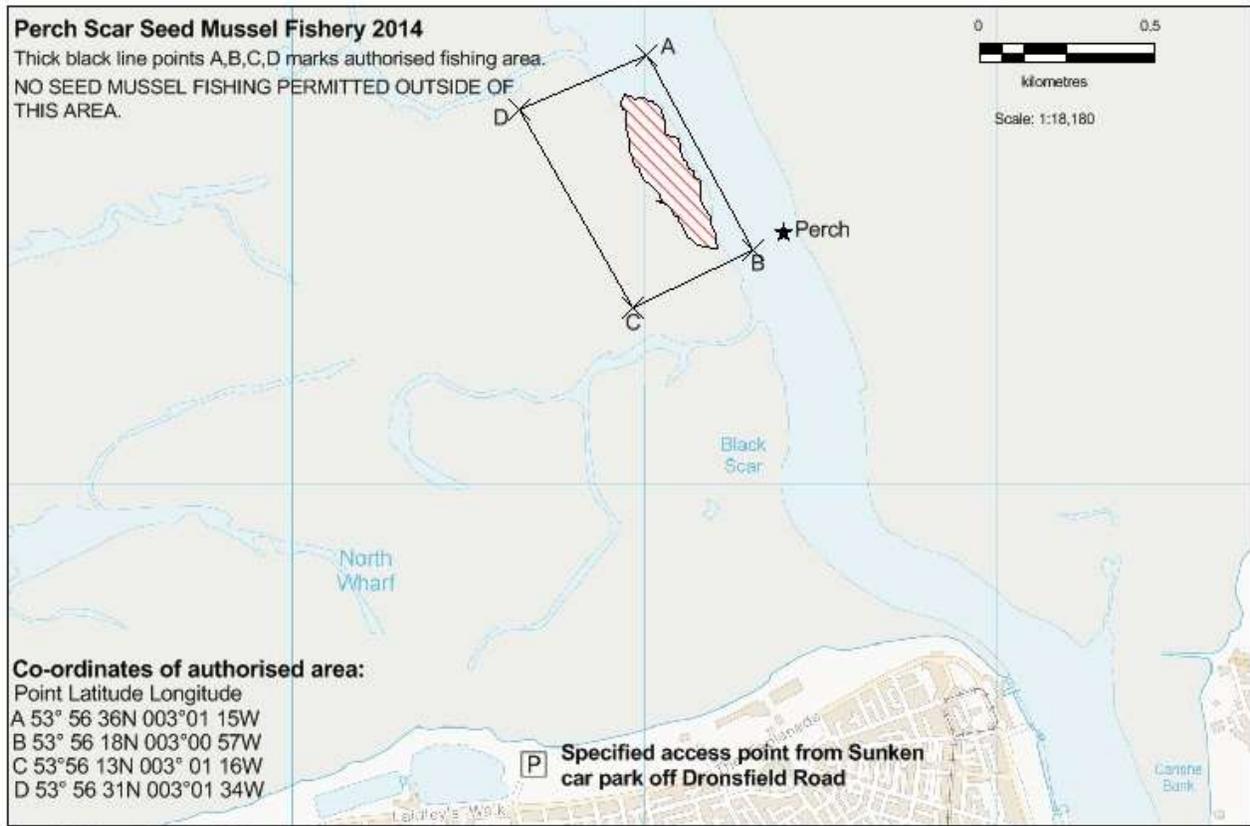


Fig.1. The Perch Scar seed mussel fishery authorised area

Heysham Flat seed mussel

The hand-gathered seed mussel fishery at Heysham Flat was opened to Byelaw 3 permit holders on 26th August with authorisations ending on 30th November 2014. An access and fishing exclusion zone is detailed in the authorisation (as shown in figure 2) and physically marked out on the bed to ensure the main *Sabellaria alveolata* reef area is protected from potentially damaging activity. Recent reports from IFCOs suggest the bed has been fished most tides with around 6-12 gatherers taking around 12 - 15 tonnes per day. A total of 341 tonnes has been reported to have been landed up to the end of October.

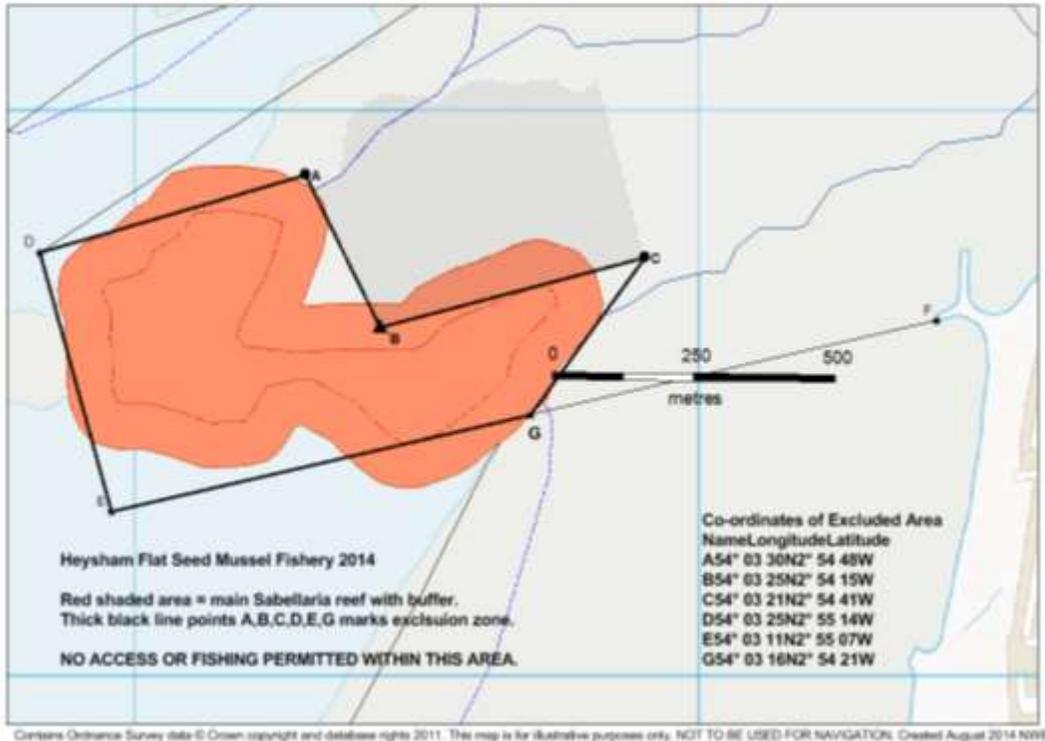


Fig. 2. The exclusion zone for Heysham Flat seed mussel fishery

South America / Falklands Seed Mussel – North Morecambe Bay

There has been extensive work carried out with stakeholders and Members of the TSB over the management of the seed mussel resource in north Morecambe Bay this year. This is detailed in reports to the TSB (13th October – Special meeting and 31st October) and Authority (19th September) and has highlighted the need for a multi-sector Mussel Management Group to be convened to agree a Management Plan on best practice management and agreement between sectors. The Senior Scientist has asked for sectors to put forward their respective representatives so that a meeting of this group can be facilitated at the earliest opportunity to agree Terms of Reference.

Poor weather has prevented dredge fishing on many of the authorised tides. A further time extension was authorised by TSB to begin on 12th November with only one boat proposing to use the authorisation. A meeting was held on 11th November between the two sectors – dredge fishers and hand-gatherers - and a Gentleman's Agreement was reached whereby the northwest and northeast corners of the Box 1 authorised area would not be fished. Fishing began on 16th November and a total of 130 tonnes were harvested over two tides. Operators informed the IFCA on 18th November they will not be returning this year.

Foulney Mussels

As reported at the last Authority meeting, Officers are investigating the proposal to permit the hand-gathering of undersize mussel from areas on the mussel bed at Foulney which become stunted once they reach a certain size (around 35-40mm). TSB agreed to the Authority authorising harvesting by Byelaw 3 permit holders on specific tides as a way of ensuring that only the upper reaches of the bed are fished. Officers are in the process of carrying out a Habitats Regulations Assessment in accordance with the Defra revised approach protocol having discussed the proposal with Natural England. Once this can be agreed, suitable tides will be identified and authorisations issued.

A further proposal from Byelaw 3 permit holders to authorise the taking of undersize mussel from between Foulney Island and the oyster farm will be taken to the Mussel Management Group for consideration.

Duddon Estuary Mussels

There have been on-going low levels of hand-gathering of size mussel in the Duddon Estuary. 164 tonnes have been reported as harvested since landings records were introduced for hand-gatherers in July. There have been issues around parking and the tonning up arrangements where the National Trust have been concerned about the use of their small car park and the effect this has had on visitors to the nature reserve, as well as health and safety concerns over tonning up operations when the public are walking past. Some mussel rubbish was also left behind. Some groups of local hand gatherers had arranged to use local farms which worked well. Officers have continued to attend meetings and attempt to liaise between hand-gatherers and other agencies, although these issues are accepted as beyond the NWIFCA's remit. It must be stressed that there is no suggestion that there is anything inherently remiss with the fishery, which appears to be in its last throws as the mussel bed is becoming sanded over again with winter storms affecting the sandbanks and channel.

Once again there have been comments made, within and outwith of these meetings, that certain sectors of the Byelaw 3 permit holders carry out un-social acts before and after fishing, especially in relation to toileting and litter disposal. Again, although strictly outside the NWIFCA's remit, the Senior Scientist would suggest that the Authority considers whether any educational and communications work could be undertaken to try to prevent this in future fisheries. It undoubtedly brings the fishery into disrepute.

Solway Firth

In previous years Cumbria Sea Fisheries Committee has authorised a fishery for cockles in the Solway Firth using a hydraulic suction dredge. A fishery occurred in 2003 and 2004 on Beckfoot Flats and the last time this type of fishery was authorised was in the winter of 2005/2006 for an area in the centre of the Solway Firth known as Middle Bank. This was done under the old CSFC Byelaw 21 – Cockle Permit Scheme. A basic Habitats Regulations Assessment was carried out for these fisheries and a total and daily per vessel TAC set. Since this fishery, cockle beds in the Solway have been closed due to low stocks.

This year officers have been made aware, via the industry, of a large stock of cockles present on Middle Bank which dries out at low, spring tides but due to its position is only accessible by vessel. An industry vessel with a hydraulic dredge fitted was utilised to investigate cockle stocks on the Middle Bank and Beckfoot (an intertidal bed running from Silloth to Beckfoot).

The surveys undertaken provided Officers with an understanding of the hydraulic dredge gear and the characteristics of the cockle beds in the Solway. The potential area for cockle stock to occur in the Solway Firth is very large and survey results indicate that there is not sufficient stock on either bed to immediately open a fishery in the Solway. However, the large number of undersize cockles observed and the fast growth rate seen in the Solway means that there may be potential for a dredge fishery to operate in 2015; possibly on Middle Bank. Officers will continue to survey in 2015 and will aim to cover a greater area.

Should stock levels suggest a fishery, a Habitats Regulations Assessment will be required. Completion of this document will require considerable research and liaison with Natural England.

Cockle dredge fisheries are permitted in both the Wash and Thames and are managed under Fishery Order by their IFCA's. Investigation of the survey methodologies and management measures used in these areas will be instructive in making management decisions for the Solway.

There are a number of management considerations that will need to be decided on before authorising a fishery. One of which is the fact that the Middle Bank runs up to and crosses the dividing line between Scottish and English waters. This may present an added enforcement burden and therefore collaboration with Scottish authorities will be required. Additionally, for Habitats Regulations Assessments and other considerations the Solway should be regarded as a whole; again requiring collaborative working between the NWIFCA science and statutory nature conservation bodies across the border.

MORECAMBE BAY HYBRID FISHERY ORDER

Due to the pressure of the work generated by the Morecambe Bay mussel fisheries the planned meetings to discuss the benefits of Byelaws versus Fishery Order for management of cockle and mussel fisheries had to be postponed, and therefore no decision has been made on the direction of the NWIFCA for the future. Plans are underway to re-convene the meeting in the very near future.

Assessment of Fishing Activities in European Marine Sites

The Science Team is working to progress this project although it has had to take a 'back seat' while the management of active fisheries has taken priority. The "light" TLSE assessments, which detail fishing activities that are not occurring in the District's EMSs and therefore do not require further attention, have been completed and submitted to Natural England for their comments. The aim has been to develop a template format that will make subsequent assessments more streamlined and mean less preparatory work.

Following piloting of different recording protocols IFCOs are recording fisheries activity information from across the District within their daily logs to assist with data acquisition. The Science Team has accompanied them on patrols and familiarisation visits, including Drigg winkle inspection, Ravenglass crab tile inspection and Mersey RIB patrol. Initially three gear/feature interactions were selected for the next set of assessments. Potting on reef features in Lune Deep SAC will go through to Appropriate Assessment, and Officers are currently liaising with fishermen who do or may prosecute this area to gather more information on activity extent.

It is planned to have assessed the following activities within the Dee and Solway by Christmas: gill and trammel nets, stake nets, demersal longlines, shrimp push nets and beach seine / ring nets.

The NWIFCA EMS work is fed into the national reporting structure through the Project Board, and regular phone meetings are attended with other IFCAs, Natural England and the MMO.

BASS MANAGEMENT MEASURES – UPDATE ON DEFRA APPROACH

Members will recall that last year Defra consulted on the EU proposals for changes in Bass fisheries management. The NWIFCA response focused on the importance of local management for inshore stocks and their value to under 10m fishing vessels.

Stephen Bolt from the Association of IFCAs has recently asked Defra for an update on its approach and potential changes to regulation nationally. He states, 'the IFCAs are coming under increasing pressure from stakeholders, and in particular recreational sea anglers, to lead by example and put in place enhanced bass management measures including an increase in minimum landing size. The Association has also received increasing numbers of queries from the Sea Angling community seeking a national IFCA position regarding bass. When the Association wrote to the Minister in 2012, the IFCAs were keen to support UK and EU Bass management at a local level, but pointed out that it was not necessarily appropriate for us to take the lead role'.

It appears that things could move (relatively) fast regarding EU and UK bass management. The EU is proposing to put in emergency bass measures by end December 2014 and Defra are waiting to see

what this entails. IFCA's are getting increasingly frustrated at the speed of development and several are proposing to "go it alone" –

Also of interest might be the paper presented at the Eastern IFCA main committee meeting at the end of October, which can be circulated to members on request from the Science team.

It is understood that the following option was adopted unanimously:

'To introduce incremental regional Bass management measures – this option would drive the development and implementation of local management measures, developed in step with national measures, to ensure that bass stocks receive appropriate management focus at the earliest opportunity. This would encompass localised actions in the Eastern IFCA district, district wide management and the development of schemes with neighbouring IFCA's to preserve stocks.

Candidate management measures could include:

- Establishment of regional nursery areas
- Bag limits for recreational anglers
- Mandatory Catch and Release
- Spatial or temporal closures
- Vessel or fishery catch limits
- Mandatory catch returns
- Capacity limits
- Carcass tagging
- Effort control (days at sea constraints).'

Stephen Bolt is also seeking a meeting between all the IFCA's and Defra as soon as there are some proposals from Europe. He sends through updates to the IFCA's via the Chief Officers and Officers will keep Members informed of any progress.

PLEASE SEE ANNEX A for update from Defra received on 25th November 2014 from Delyth Dyne, Migratory and Freshwater Fisheries and Recreational Sea Angling Team, Marine Planning and Sustainable Fisheries, DEFRA.

Drift Netting Ban Proposals

The European Commission wants to ban drift nets completely regardless of scale, season or size, as a simple means of reducing issues related to by-catch of endangered, threatened and protected (ETP) species such as turtles, cetaceans and seabirds. Environmental issues of large scale drift nets are well known, and these proposals have arisen mainly due to the intensive impacts such fisheries have had on marine life in the Mediterranean tuna fisheries.

Such a broad-brush approach to a very clear problem is being resisted, particularly by inshore fisheries and associated organisations. Drift netting is carried out by a sizeable proportion of inshore vessels, including unregistered and non-sector boats. Landings may make up a significant percentage of annual income of what are generally subsistence fishers. Although there is room for improved research into the environmental impacts of small-scale drift netting it is widely accepted that the smaller boats not only deploy shorter nets but also 'tend' these nets and act quickly to free any marine life that may become entangled.

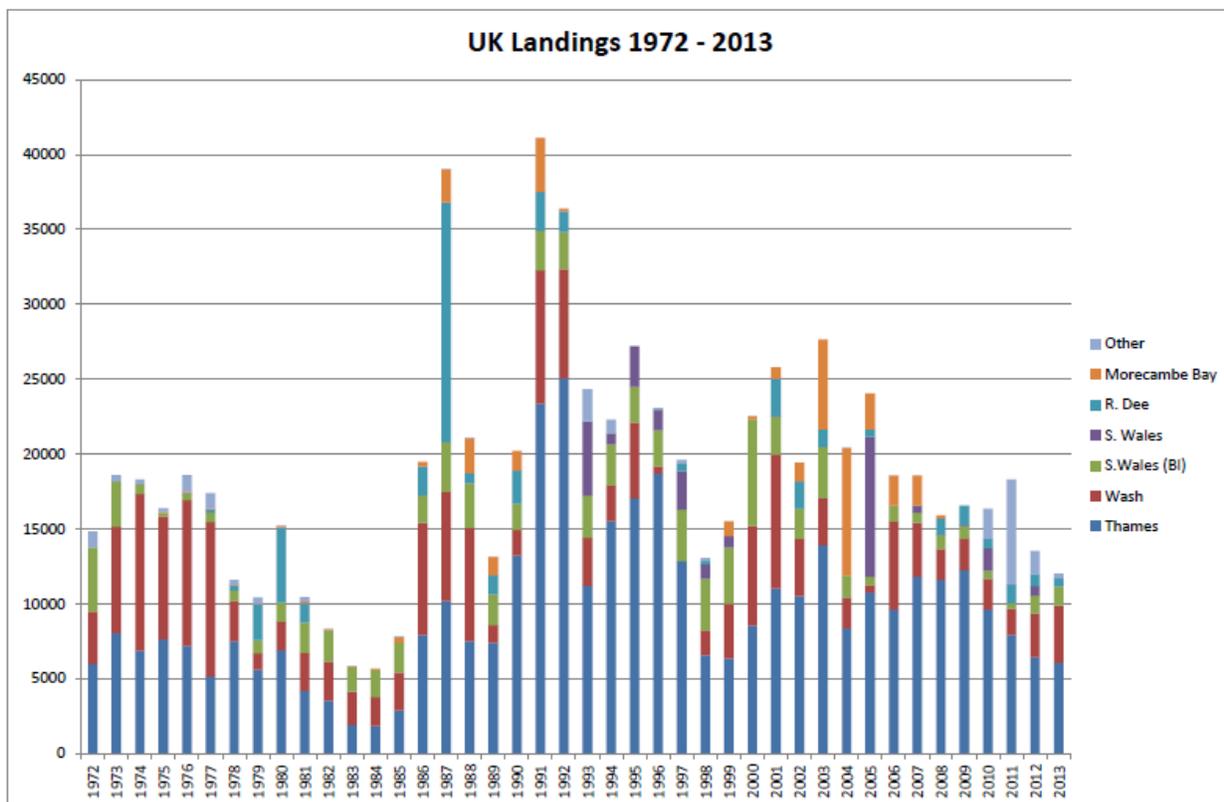
A report published by Seafish in May 2014 entitled 'Report on the Current State of Drift Net Fisheries in the UK; June 2014' is available on request from the Science Team and provides information on this issue and particular concerns round the consultation on which the resulting Impact Assessment was based.

Officers will keep members up-to-date on any developments.

Cockle Landings Data Report

Officers have received the latest UK cockle landings data (live weight in tonnes) compiled by Kent and Essex IFCA and represented in the graph below. It provides a useful illustration of the peaks and troughs of cockle fisheries, shows the importance of the Thames fishery and how the NWIFCA District fits into the national picture. It is understood that prior to the 80s figures for Morecambe Bay were not kept.

Other in 2010 is the Wirral
Other in 2011 is the Ribble (6000T) and Wirral (1000T)
Other in 2012 is Ribble (1500T) and North Wales (57T)
Other in 2013 is Ribble (284.9T) and North Wales 35T)



BIOSECURITY PLAN

Following input from Members the NWIFCA Biosecurity Plan has now been finalised and published. Authored by Ms Temple it is a comprehensive document outlining the current situation regarding Invasive Non-Native Species (INNS) and Shellfish Disease in the NWIFCA District, future risks, and best practice procedures recommended for use by all stakeholders and Officers to minimise those risks. It is being widely distributed and has been published on the website. It is a five year plan and the aim is to keep it up to date with amendments as and when necessary. Ms Temple will also develop a method for disseminating the good practice 'Check, Clean, Dry' and INNS identification sheets to our stakeholders.

North West Coast Connections - National Grid Proposal for a Tunnel under Morecambe Bay

Members will be aware that the North West Coast Connections (NWCC) project is currently carrying out a public consultation on the proposed route corridors for two high voltage cables to be transmitted from the new-to-be-built nuclear power station at Moorside in Cumbria to the national grid. The preferred option identified by the project for the southern route is a tunnel in the bedrock under Morecambe Bay.

Members have raised concerns about the potential for electro-magnetic fields from the cabling in a tunnel to affect migratory fish.

The Senior Scientist has been in touch with National Grid's Project Engineer, Gordon McArthur, who provided a copy of the marine constraints map for Morecambe Bay and the adjacent sea. It shows several cables, some from the wind farms, previously installed across the Bay. Gordon states that 'these are either on or very close to the surface of the sea bed and any migratory fish would have to cross those cables before crossing our tunnel should it go ahead. These will each have a much greater EMF effect at the sea bed. Any fish entering the Bay have to cross these cables before reaching our tunnel. We do not expect the residual EMF from the tunnel to have any effect on the fish.

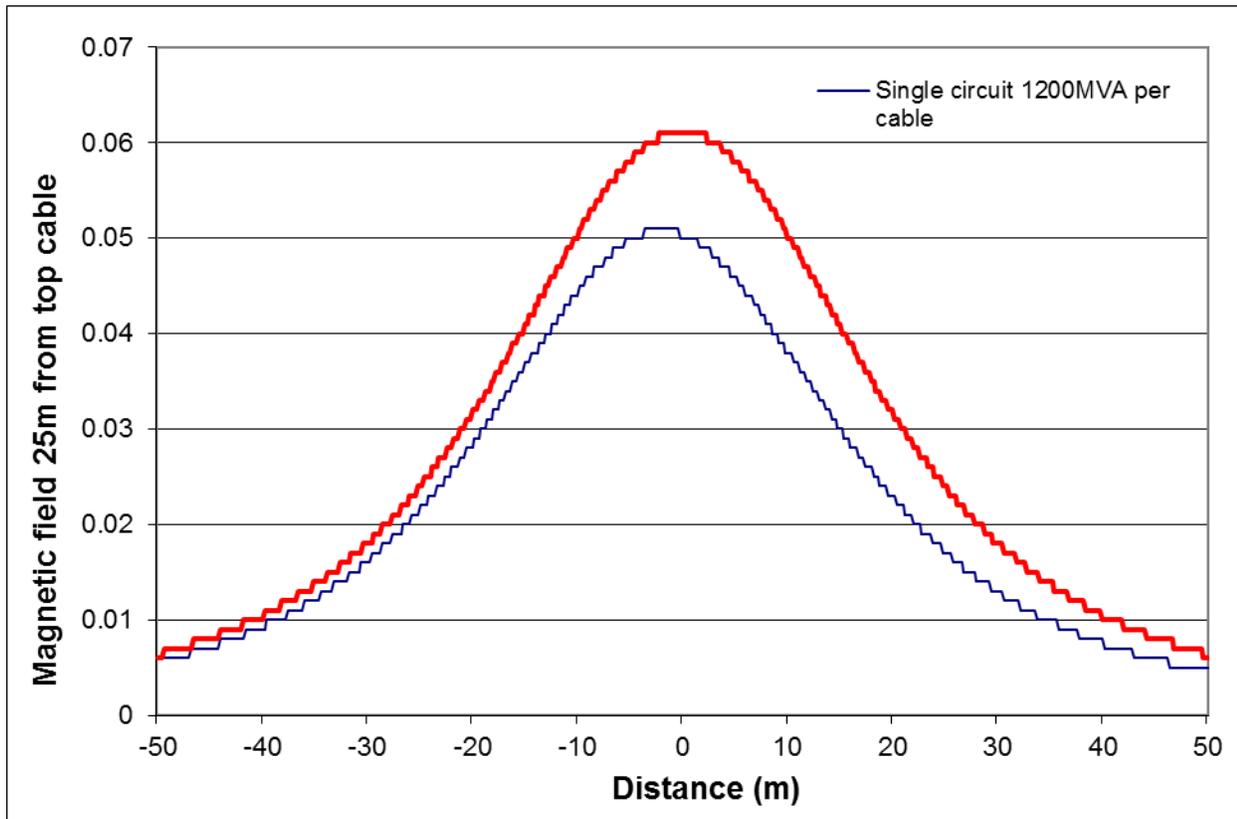
If the tunnel option goes ahead our cables will be housed in a deep tunnel at least 25m below the sea bed and the magnetic fields from cables reduce very rapidly with distance. It is not anticipated that there will be any impact on migratory fish in the area above the tunnel, this will be fully assessed when a tunnel design has been finalised and will be publicly documented in the project Environmental Statement'.

Mr. McArthur provided a graph reproduced below that has been produced for the EMF effect at seabed level for a tunnel 25m below the surface; this gives a maximum effect of 0.06 microtesla that quickly falls away to 0.01 microtesla. The natural background magnetic effect at this latitude is about 50.0 microtesla.

The Senior Scientist has responded saying the NWIFCA would also expect an 'in combination' approach in the assessment to other existing structures such as existing cabling, that presumably are emitting EMFs, and as such even a slight increase could potentially tip the levels into unacceptable. She requested further evidence to show this is unlikely, and pointed out that this will be one of the issues that will need covering in the fishers' stakeholder meeting, along with positioning of ventilation / escape towers should the tunnel proposal be taken forward. Mr. McArthur reports that the tunnel will be at least 2km from any wind farm cables and National Grid state that there will be no cumulative effect.

A specialist workshop was held on 14th November to discuss 'Marine Ecology and Landscape' issues associated with the tunnel if it should go ahead. The Senior Scientist made strong representation that fishers need to be consulted at the earliest opportunity around the design, size and positioning of any ventilation / escape islets. National Grid will only be able to start this consultation process once the current consultation has finished and go-ahead for the tunnel proposal has been granted.

Members will be kept informed and Officers will continue to work with the NWCC team to ensure fishers' voices and concerns are heard.



PhD proposal with Lancaster University

The proposal for a PhD studentship to study and model the ephemeral mussel beds in Morecambe Bay has been submitted by Lancaster University as a partnership project with the NWIFCA for a NERC Doctoral Training Project. The title of the project is; 'Morecambe Bay mussels: where do they come from, where do they go? Achieving sustainable use of natural resources' and has four key work packages:

- Distribution and size of mussel beds
- Detecting spawning times and distribution of larvae
- Investigation of conditions leading to the stock being washed away during winter months
- Modelling of how flow and water quality conditions contribute to (self-) recruitment and connectivity of mussel beds

This is a very timely project in view of the issues faced this year over managing the mussel resource in Morecambe Bay. We expect to hear information on whether the funding bid has been successful around the middle of November, and if successful the expectation will be to work with industry, Natural England and other relevant stakeholders.

Use of Limestone in Sea Defences – Project with Blackpool and the Fylde College and Wyre Borough Council

Following an initial meeting with academics from Blackpool and the Fylde College to discuss a joint working proposal to begin a long-term dataset from monitoring the colonisation of the new sea defences under construction at Rossall, a further meeting was held between Ms Knott, BFC academics and Wyre Borough Council engineers on 6th October. This involved a site visit. All parties are enthusiastic about the potential for this project to provide information on the change over time of different rock types used in the sea defence construction, including limestone which is being sourced from 13 quarries in Carnforth, Cumbria (Shap) and North Wales. Aspect of rock faces and tidal height

will also be considered. Stone is being stockpiled on the beach at the present time and digging was due to begin on 13th October. The time frame for completion of the sea defence construction is 3 years.

The college will begin by collecting some baseline data of flora and fauna on the old existing groynes and then once new groynes are in place start to collect data on colonisation. The first stage will involve monitoring and assessing differences in biofilms.

WBC will share beach profiling data, and provide safe access to the site which is cordoned off from public access for safety.

Cefas Fisheries Science Partnership Project – testing an electro dredge in the NWIFCA district

Science Officers continue to liaise with Cefas on this project. The gear was trialed in Liverpool Bay but no razor clams were found. A diver survey was carried out in shallow waters off Walney Island which confirmed the presence of razors. However due to problems with the availability of the boat and skipper, trialing the equipment here has not yet been carried out. Further authorisations have been issued by the NWIFCA and the MMO to March 2015. Work must be completed by this date due to the funding stipulations for the work.

AUTHORISATIONS AND CONSULTATIONS

Environment Agency Water Framework Directive monitoring – Mersey, Ribble, Lune and Wyre
Sefton Council Cell 11 Coast monitoring – Sediment sampling
MOD – Eskmaels Firing Range – ongoing trials of propellants for shells

MEETINGS, WORKSHOPS AND COURSES ATTENDED

Morecambe Bay Sanitary Survey - CEFAS
TAG – London
Vessel Sub-Committee Meetings
NWIFCA Enforcement Meetings
Shellfish Liaison Group Meeting
Morecambe Bay Partnership Annual Conference
Institute of Fisheries Management Annual Conference – presentation
Lowther / Lonsdale Estates
Marine Scotland science
Data Protection, FOI and EIR training
Blackpool and the Fylde College – Degree course tutorial
MMO MCZ cross-boundary sites telecon
Solway Firth Partnership Quarterly meetings and Annual Conference
National Grid environment sub-group
Dee Liaison Meeting

Science Officers
21st November 2014