

NWIFCA Quarterly Meeting
19th September 2014: 11:00 a.m.

AGENDA
ITEM NO.
9

SCIENCE REPORT
24TH MAY – 27TH AUGUST 2014

GENERAL

A very busy period where fisheries in the central and north parts of the District have taken priority over other work streams.

SURVEY AND FISHERIES WORK

Surveys and Inspections of Intertidal Shellfish Fisheries

There have been on-going low levels of hand-gathering of size mussel from two beds in north Morecambe Bay throughout the winter. Recruitment of seed mussel into Morecambe Bay has been good and has resulted in Officers devoting significant time in investigating management of these fisheries. Fisheries in the Solway have also been investigated. Additional surveys and inspections have been undertaken during this latest reporting period, as reported below.

West Kirby

Science Officer Temple and IFCO Brownrigg inspected the West Kirby mussel bed on 17th July to ascertain any spatfall in the area. On arrival at the bed it was quickly determined that the vast majority of the area consisted of dead mussel and cockle shells, and the bed overall was very patchy with scoured areas (similar to the previous survey on 23rd January). The small quantities of live mussel were old and covered in barnacles with no evidence of spatfall.

Leasowe Bivalves

Science and IFCOs inspected Leasowe on low spring tides to improve understanding of bivalve gathering there. It appeared that razor clams were concentrated in one particular area of the beach. The catch brought off comprises small quantities of both razor clams and otter clams. A good spring tide in July saw the level of activity increase to fifty gatherers. The understanding that all catch taken was for personal consumption, the relatively small quantities taken, and chatting with the gatherers suggests that many of them were solely there for social purposes or gathering food for personal consumption. At present levels there does not appear to be any requirement for management measures. However the situation will be constantly monitored for any increase in either effort, catch or change in species.

South America / Falklands Seed Mussel – North Morecambe Bay

This area is classed as ephemeral and has been historically fished by seed mussel dredgers, having once been covered by the Morecambe Bay Mussel Fishery Order 1978 (expired 2009). Various inspections have been carried out since April on foot via NWIFCA RIB, and by hovercraft and helicopter provided by the industry. The area has been subject to great change over the past 12 months with a large swathe of sand now covering much of the central strip of skear, either rendering the substrate unsuitable for mussel recruitment or burying any early settlement that had occurred. This is not unusual and appears to occur every few years, sometimes covering the whole of the skear.

The channel that once separated the area to the north of the skear from the Roosebeck inter-tidal area has now narrowed and sanded in, making a crossing by tractor. However, this area roughly estimated at 9.6ha, was not included in the authorisation to dredge last year, and some of the mussel has survived. It is now mixed with 2014 seed mussel and the recommendation was to again leave this area to grow on to size.

The densest area of seed mussel to the far south (estimated area = 84ha) suffered from a plague of starfish preying on the young mussel.

The decision to open the dredge fishery was taken to TSB in August, and the fishery was due to open to a maximum of four operators (based on track record) on 31st August. A new enforcement regime with increased capacity from previous years was due to be implemented.

Heysham Flat Seed Mussel

A full survey of Heysham Flat skear was carried out by Science Officers assisted by Wildlife Trust Marine Graduates on 16th July using a methodology used by Eastern IFCA to assess biomass – the Dutch Wand method. A high percentage of the skear has been subjected to mass mussel recruitment with a dense coverage of small seed extending from the now exposed western Knott End skear to a high level on the shore. All of the main *Sabellaria alveolata* reef area is smothered leaving only exposed worm mounds around the edges of the skear.

There has been a long-established protocol for carrying out an Appropriate Assessment of this fishery under Habitats Regulations, and generally Natural England are supportive of the opening of this hand-gathering fishery providing certain conditions are placed on the fishery – for example, a demarcation line is set up to protect the main area of *Sabellaria alveolata* reef from trampling or fishing damage. This year further work was carried out to mark out an exclusion zone to allow hand-gatherers an access route to Knott End skear and thus avoiding the worm reef area.

Officers worked with the Local Authority to get the bed open on 26th August and meetings have taken place to discuss the issuing of beach access permits for quad bikes in a more equitable way to overcome some of the issues of last year's fishery. However the fishermen still maintain that they are being denied their rights to access the fishery, owing to the council limiting the numbers, restricting the routes and charging for beach access permits.

Fleetwood Mussel Beds

A proposal to allow a one vessel dredge fishery at Perch Scar (one of the small Fleetwood skears) was taken to TSB. Officers had inspected the area, and found dense mussel quite hard in with around 75% cover. The area was estimated from mapping at 4.84 hectares with an estimated biomass of 349 tonnes. The other skears at Fleetwood were also inspected to provide information on alternative mussel food resource for birds, and broodstock. These skears would not be fished, and included Black Scar, Kings Scar, Neckings and Rossall Scar. All had varying amounts of seed mussel.

IFCO Brown reports that historically both Perch Scar and Black Scar suffer badly from the cold winter freshwater coming down the river. Black Scar normally suffers a high natural mortality by the 2nd week of December in most years. Perch Scar suffers a little later in the season. In recent history Black Scar has been both dredged and hand gathered for seed mussel. Perch Scar has been occasionally gathered by hand for both size and seed mussel. Neckings has been authorised for dredge.

A decision was taken at the TSB that Officers should ascertain whether there is interest from Byelaw 3 permit holders first before thinking about authorising a dredge fishery. It was found that there was interest. There have previously been issues around access for hand-gatherers due to a gated area owned by the council. Officers began work on liaising with Wyre Borough Council on management of

hand-gathering activity. TSB agreed that if once open it was not prosecuted by Byelaw 3 permit holders then the small dredge fishery should be authorised.

Foulney Mussels

Members will recall that there has been an on-going hand-gathered size mussel fishery at Foulney throughout the winter up to mid-April. Byelaw 3 permit holders have been using riddles to ensure only size mussel was being removed from the fishery. Effort switched to the Duddon mussel bed once that was classified.

Officers inspected the Foulney bed on the 17th July 2014 and found the whole bed carpeted with dense mussel settlement. Whether this is due to the fact the size fishery exposed bare substrate suitable for re-settlement, or whether the mass recruitment is from larvae that would have settled on South America had large parts of it not been covered in sand, or a combination of both, is open to conjecture. However, it has left Officers of the opinion that some of this seed should be harvested by Byelaw 3 permit holders. The sheer density of it suggests that much of it will be lost to natural mortality either through over-competition and smothering, or wash-out and erosion from build-up of loose mussel mud.

The NW&NWSFC did authorise the hand-gathering of seed from areas of the bed in the past for the same reasons. In 2013, Science Officers had intended to carry out some background research of different management options for a bed such as Foulney but unfortunately this work was not progressed due to other priorities and staff changes. Officers held a meeting with Byelaw 3 permit holders on 19th August to discuss their opinions on how much seed can be taken and which part of the bed could be fished. As is most often the case, there were differences in opinion from the fishers as to how the bed should be managed. Officers consider that thinning out of such dense mussel may provide improved conditions to allow the mussel a chance to persist through the winter, and will investigate further with assistance from the fishermen.

Duddon Estuary Mussel Fishery

The size mussel fishery in the Duddon Estuary has continued at a relatively low level since mid-April. Officers have liaised regularly with the National Trust and Barrow Borough Council officials over some issues relating to access and use of the National Trust car park. The level of compliance of fisheries regulations has been high.

Solway Firth

Ms Leadbeater visited the Solway scars with IFCO E Thinnesen on 17th July. Both Ellisons and Low Hagstock scars were investigated and had mussel settlements with a range of sizes from small seed to size. Ellisons Inner, Middle and Outer were now visible having been previously covered by sand. Low Hagstock was surrounded by very soft sediments. Cockles of mixed age class (both over and under size) were found on Beckfoot Flats. However, using the jumbo method of surveying these were not found to be at a density for a commercial fishery and there was no evidence to date of a spat fall. Officers from both offices are working with industry to carry out surveys using a suction dredge of these cockle beds and the Middle Bank bed having gained approval from TSB and agreement with Natural England. Should higher densities of cockles be found this will be brought back to the Authority.

Solway Mussels

The TSB considered options for surveying the sub-tidal mussel bed in the Solway following requests to Officers from the seed dredge industry and a meeting with Solway fishermen, where again both sectors had differing views about how the bed functioned. It was agreed that the NWIFCA was grateful to all sectors of industry for their offers to assist the Science team to survey the area, and that

Officers should work with Solway fishers to undertake a dredge survey in the area. Subject to the results the IFCA might then take up the offer of the use of Mare Gratia from the Menai Strait to carry out a more detailed survey using a specialised industry vessel with ground discrimination software, underwater camera and grabs for ground-truthing, crewed by experienced mussel men.

The first survey was carried out on 27th August and covered a large area. Disappointingly no mussel, not even broken shell, was found and the area is believed to have changed substantially with channels shifting and sandbanks changing. The Solway fishermen have had a poor year all round this year with reports that shrimping has been meagre compared to most years, with the season having reduced to just a few weeks.

Assessment of Fishing Activities in European Marine Sites

The Science Team are working to progress this project although it has had to take a 'back seat' while the management of active fisheries has taken priority. It is true to say that there is a high level of pressure being felt from Defra over meeting the 2016 deadline of having carried out all the assessments, a task which may not be achievable. The Science Team have provided IFCOs with our requirements for more data acquisition on fisheries activities to assist in the assessments, and have accompanied them on patrols and familiarisation visits: Walney potting RIB patrol, Drigg winkle inspection, Ravenglass crab tile inspection and RIB patrol (Mersey and Dee).

This has created an additional level of recording for IFCOs. However the progress that has been made is that 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. These have been submitted to Natural England. From the large number of remaining gear/feature interactions three have been selected for the next set of assessments which Officers will attempt to get started while carrying out other pressing tasks. These are Lune Deep potting, and longlines and beach netting in the southern part of the District. Officers continue to be engaged at a national level with the EMS Review through meetings, workshops and teleconferences.

North West Coast Connections

All Members have been notified by email about the consultation started on 4th September by National Grid on the preferred option routing corridors for the high voltage cabling from the new to-be-built nuclear power station at Moorside, north of Sellafield, north to Carlisle and south to Heysham. The northern preferred route does not directly affect the coastal or marine environment; the south preferred route involves a tunnel under Morecambe Bay (starting and ending inland) through the bedrock, that will incorporate either one or three ventilation / escape towers. Although at first this may seem alarming, this is the result of many years of consultation and appears to provide a route with the least environmental / fisheries impact.

The public consultation involves roadshows around the area and information to ensure the public understands the issues and are able to contribute fully in their responses. Officers encourage all those with an interest to please register for updates so that you do not miss any crucial events or information. The registration link is provided on the right hand side of their project website - <http://www.northwestcoastconnections.com/> . They are also using the Twitter handle @NGNWCC and welcome Twitter users to follow them. They will be posting news updates on Twitter as well as circulating press releases via email or post.

The Senior Scientist continues to represent the Authority at meetings and in formal agency consultations and would welcome Members contributions to the discussion, particularly on any potential impacts to fisheries of the Morecambe Bay towers.

North West Energy Squared

During the course of attending the Irish Seas Maritime Forum meeting in Liverpool, the Senior Scientist was made aware, almost inadvertently, of proposals to generate tidal power from every estuary in the NWIFCA District, and to incorporate either a high speed rail route or road network to link up from Prestatyn to Stranraer. It was evident that a representative from MMO Marine Licensing Team was also not previously aware of these proposals. Interestingly enough the following week when attending the Mersey Estuary Forum annual meeting, the same issue was brought up, and the Senior Scientist was informed of a 'model' that was being displayed at the International Festival for Business being held in a neighbouring building. Photographs of the model and artists impressions, which showed tidal energy generating 'gateways' carrying roadways, along with all the other energy potential in the District (eg. fracking, gas and oil, nuclear, wind etc) are shown below. The short booklet on the scheme can be downloaded from:

<http://www.nwblt.com/wp-content/uploads/2014/05/NWBLT-Optimising-our-Essential-Resources-Creating-Business-Advantage-by-2040.pdf>

The Senior Scientist took the opportunity to discuss these plans with a representative from Peel Holdings who have recently updated their feasibility report 'Power from the Mersey: Delivering Renewable Energy' (<http://www.merseytidalpower.co.uk/content/mersey-tidal-power-feasibility-study>). His view was that with the present technology and cost, that none of the schemes would go ahead, including their own. However this does not mean that work will not land on our desks in the meantime. Communication links have been opened with the North West Energy Coast project so that the Science Team are kept aware of future developments, proposals and any potential consultations.

PhD proposal with Lancaster University

The Senior Scientist has met with academics from Lancaster University Environment Centre to discuss formulating a joint proposal for at least one PhD studentship to study and model the ephemeral mussel beds in Morecambe Bay in relation to the mass recruitments and the dispersal of seed mussel following autumn and winter storms. There may also be scope for shorter but also valuable Masters and under-graduate studies and they were very keen to work with the NWIFCA, the industry and partner agencies to gain an improved understanding of these fisheries. Funding would come from NERC - the Natural Environment Research Council – and would involve drawing in academic expertise from Bangor University. An outline proposal has been sent to the University for their input and for submission by the deadline of 30th September.

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

As Members will recall, IFCO Brown has expressed major concern in the past over the use of limestone in sea defence construction and its effect on mussel beds in his area. There appears to be a gap in research and the Science Team are interested in finding a way to answer some outstanding questions. As Wyre Borough Council are in the process of starting the Rossall defences it is an ideal time for a long-term data set to be initiated to monitor the colonisation of the new rock structures as they are placed on the beach. A meeting has been held with academics at BFC to discuss the proposal. They are ideally placed (local) to regularly visit the site. A follow-up email to Wyre Borough Council engineers has also met with a very encouraging response and a meeting and site visit between all three parties is planned for early October.

FLAG Funding for Fishers

Members will remember the proposal submitted by Natural England to the North and West Cumbria FLAG (Fisheries Local Action Group) for funding for a project to train and utilise local fishermen in the mapping of seabed habitats and fisheries on the English side of the Solway Firth. Unfortunately the FLAG board determined they were unable to support the project for the reason that similar surveys had been carried out in the area within the past 5 – 10 years, and the value of additional surveys could not be ascertained and therefore the cost could not be justified.

This is a disappointing outcome as not only would the project have given local fishermen an opportunity to increase their skills and contribute to collection and analysis of data, it would have provided a means to gain important up-to-date data in an area that has inherent logistical difficulties in surveying to aid in the IFCA's Review of Fisheries in EMS.

Morecambe Bay FLAG Proposal

Officers have been contacted by the Senior Regeneration Officer from Lancaster City Council about the possibilities of accessing the European Maritime and Fisheries Fund to develop a FLAG for Morecambe Bay. A supportive response has been sent suggesting a meeting to discuss this further. Naturally depending on the outcome of this meeting, Officers will keep Members informed and would ask that Members get involved as appropriate.

Heysham Power Station and Fish Mortalities

Officers have been concerned at reports for some time now over the amount of fish drawn into the water cooling intakes at Heysham Power Station. Information has been obtained from the Environment Agency who carried out some bespoke monitoring at one of the intakes to assess mortality rates and species affected. Officers have not yet had time to analyse the information fully but can report to the Members the following:

At a national level the EA have been in discussions with EDF Energy for some time regarding all of their sites, and compliance with the Eel Regulations, 2009. In late 2012 the EA confirmed with EDF that there would be no exemptions for the Eel Regulations (NB: the Eel Regulations is the legislative driver being used to seek change at this site). Subsequently, the EA presented them (EDF) with a draft IC (Improvement Condition) with an expectation that they begin work on delivery of said IC. There is no detail as yet as to what progress and / or changes we may or may not see at this site as they are still working towards the IC deadline of September 2014.

Apparently the power stations only have a water discharge consent – no abstraction licence was required for abstracting sea water for their cooling circuit.

When this item was presented at the TSB Mr Bill Derbyshire from the EA offered to investigate and ascertain the current position. Meanwhile Science Officers will continue to communicate with the EA and hope to see some improvements in the near future.

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

After various setbacks to this project, testing of the electro dredge gear took place in Liverpool Bay this May. However, when using the equipment no razor clams were collected. This is suspected not to be due to the gear not working but instead due to a lack of clams in the area. Clams were present in the area during other surveys in previous years. However, a survey completed this year by Liverpool University suggests a lack of clams in the area. Observations of intertidal gathering at Leasowe indicated they were only to be found in a limited area. It may be that the winter storms have affected distribution.

Dispensations and funding for the CEFAS project have been extended until the end of October 2014. The electro dredge gear will be tested in a new area, off the coast of Walney Island, in the coming months. A diver survey has been undertaken in this area and the presence of razor clams has been confirmed.

Wildlife Trust Marine Graduates

The new intake of Marine Graduates received a day's training on the NWIFCA and how the Authority manages fisheries within its District. The four MGs have since assisted the Science Team in carrying out the on-going survey of the *Sabellaria alveolata* at Heysham Flat, and the mussel stock there. Despite the fact that earlier in the year observations made at Heysham showed the *Sabellaria* to be in a healthy state, extending its distribution into northern areas of the skear, the mussel settlement has now smothered much of the reef, leaving only the worm mounds around the periphery to provide the adult population for further recruitment. Regular inspections and surveys are providing evidence of the constant battle between the two species for dominance. It appears that the *Sabellaria* does particularly well during winter and spring, and then the mussels take over after late spring recruitment until the autumn storm erosions.

Merseyside and Dee Stakeholder Engagement

Engagement in the Southern part of the District has improved with Officers attending the Dee Estuary Conservation Group (DECG) meeting, the Mersey Estuary Forum 2014 and presenting to Sefton Sea Anglers in June. Officers have also been in contact with the Mersey Estuary Conservation Group and hope to attend their next meeting. Ms Temple has joined IFCOs on Bay Protector to familiarise herself with the area.

MCZ DESIGNATION – TRANCHE TWO

Officers have been involved in teleconferences and email correspondence with Defra, the MMO, Natural England and other IFCA's on the proposed MCZ T2 sites within the District.

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 focussed on the importance of local management for inshore stocks and their value to under 10m fishing vessels.

Stephen Bolt from the Association of IFCA's has recently asked Defra for an update on its approach and potential changes to regulation nationally. He states, 'the IFCA's 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 IFCA's 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'.

Apparently Defra officials have just returned from a meeting in Brussels about bass, and it appears that things could move (relatively) fast regarding EU and UK bass management. A written update will be provided by Defra, who will also give a verbal update at the Association Members meeting on 23rd September. There will be a more detailed Defra/IFCA/MMO meeting to explore how we can take forward bass management at an EU, National and local level. Officers will keep Members informed of

any progress.

MORECAMBE BAY HYBRID FISHERY ORDER

Members are aware that the TSB is considering the regulatory and financial pros and cons of the proposed Fishery Order versus the powers under Byelaw 3. The Authority has discussed previously the desire to work for a District-wide Fishery Order for the hand-gathering of cockle and mussel fisheries. The merits of Byelaw 3 and its progress towards the Authority's regulatory objectives were recognised. Much has been learned from implementing this byelaw and a review would now be timely when resources allow. The NWIFCA has already recognised that a Several Order (SO) would still be required, as there are no equivalent powers to grant proprietary rights under the 09 Act.

Officers were asked to seek advice from Defra comparing Fishery Order powers under Sea Fisheries (Shellfish) Act 1967 (67 Act) with Byelaw making power under Marine and Coastal Access Act 2009 (09 Act).

Defra's response was comprehensive and contains a table of comparison. Due to the weight of the agenda at the TSB held on 15th August Members requested a separate meeting in order to give due consideration to all the issues. A meeting is to be arranged in the near future.

PROJECT INSHORE – draft Stage 3 report

The Project Inshore team have been in correspondence recently over the final draft of the Stage 3 report. The Chief Officer has responded and the Report will be published in due course.

BIOSECURITY PLAN

Following useful input to the draft Plan from Members the final document will be ready for publishing shortly. It will be important to disseminate information as widely as possible, and monitor the take-up of the bio-security measures.

AUTHORISATIONS AND CONSULTATIONS

Research & Development of Wave & Tidal Renewable Energy Devices in Maryport
DONG Energy Burbo (UK) Ltd - Operational Marine Licence Inter Array Cable Repair
Authorisation to survey subtidal mussels in Silloth Channel using a dredge
Authorisation to survey Central Solway cockles using a suction dredge
Port of Garston, partial removal of storm damaged jetty
Mersey Wavebuoy
Mersey Gateway construction of test piles
URS Mersey Gateway authorisation
Cefas Endeavour survey dispensation

MEETINGS, WORKSHOPS AND COURSES ATTENDED

Friends of Lytham Estuary Open Day
Wallasey Community Meeting
EMS – National Working Group, NW prioritisation (with MMO)
Solway Firth Partnership
FLOWW Dial In

Byelaws Impact Assessment Guidance Webinar
Solway subtidal mussel fishermen's meeting
Dee Estuary Conservation Group meeting with IFCA
Dee Estuary Conservation Group quarterly meeting
Mersey Community Stakeholder meeting (Wallasey)
Dee Estuary Liaison meeting
Sefton Sea Anglers meeting (Walton)
Barrow Wildlife and Heritage Advisory Committee
Irish Sea Maritime Forum Annual Conference
Mersey Estuary Forum Annual Conference
National IFCA TAG
Byelaw 3 permit holders consultation

Science Officers
10th September 2014