

**NWIFCA Technical, Science and Byelaw
Sub-Committee**

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SCIENCE SUMMARY REPORT

Sustainability principles

In September 2011 the NWIFCA adopted a Set of Principles for Sustainable Fisheries which are being used as a standard intended to guide the work of the NWIFCA in managing sea fisheries resources in its District. As it is nearly three years on since they were adopted and there have been many changes in Members and officers the Senior Scientist thought it prudent to provide a reminder of what was agreed, as this is core to the work of the NWIFCA. These principles should also be posted prominently on our website.

The Principles were adapted from those developed by the Marine Stewardship Council who used an extensive, international consultative process through which the views of stakeholders in fisheries were gathered.

The Principles reflect a recognition that a sustainable fishery should be based upon:

- The maintenance and re-establishment of healthy populations of targeted species;
- The maintenance of the integrity of ecosystems;
- The development and maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, social, environmental and commercial aspects; and
- Compliance with relevant local and national laws and standards and international understandings and agreements.

The Principles are further designed to recognise and emphasise that management efforts are most likely to be successful in accomplishing the goals of conservation and sustainable use of marine resources when there is full co-operation among the full range of fisheries stakeholders, including those who are dependent on fishing for their food and livelihood.

The NWIFCA further recognises the need to observe and respect the long-term interests of people dependent on fishing for food and livelihood to the extent that it is consistent with ecological sustainability, and also the importance of fisheries management and operations being conducted in a manner consistent with established local, national, and international rules and standards.

The Principles are intended to guide the efforts of the NWIFCA towards the development of sustainable fisheries within its District. They were developed assuming that a sustainable fishery is defined as one that is conducted in such a way that:

- it can be continued indefinitely at a reasonable level;
- it maintains and seeks to maximise, ecological health and abundance;
- it maintains the diversity, structure and function of the ecosystem on which it depends as well as the quality of its habitat, minimising the adverse effects that it causes;
- it is managed and operated in a responsible manner, in conformity with local, national and international laws and regulations;

- it maintains present and future economic and social options and benefits;
- it is conducted in a socially and economically fair and responsible manner.

Although the primary focus is the ecological integrity of the District's fisheries, the Principles also embrace the human and social elements of fisheries. Their successful implementation depends upon a system of management which is open, fair, based upon the best information available and which incorporates all relevant legal obligations.

The full set of Principles can be obtained from the Science Team on request or downloaded from the website.

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. The current situation and issues requiring management decisions regarding the mussel fisheries in Morecambe Bay are dealt with in a separate paper. The following surveys and inspections have been made in other fisheries within the District during this latest reporting period.

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 (45+mm). 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, these were not at a density for a commercial fishery and there was no evidence to date of a spat fall.

Officers are investigating means to survey the sub-tidal mussel beds in the Solway. This will involve either collaborative work with the industry or chartering a survey vessel. See Mussel Fisheries report.

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 Officers Knott and Temple, and IFCOs Brownrigg and Capper inspected Leasowe on low spring tides to improve understanding of bivalve gathering there. When Science Officers inspected the shoreline, it appeared that razor clams were concentrated in one particular area of the beach. The catch brought off comprised of small quantities of both razor clams and otter clams. Over three days in June and two days in July, the lowest activity was three gatherers on 16th June taking around 2kg razor clams each. The highest activity was around fifty gatherers on 14th July. Of the thirty-five gatherers inspected, the total catch of razors and otter clams was estimated to be at around 30kg. 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.

Assessment of Fishing Activities in European Marine Sites

This project has progressed as detailed in the Science Report to the full committee at the June meeting. The “light” TLSE assessments, which detail fishing activities that are not occurring in the District’s EMSs and therefore do not require further attention, are near completion. These will be submitted to Natural England in due course. The next step is to look again at the remaining gear/feature interactions and plan what work is required in order to complete assessments for these activities. Officers have also continued working to feed into the project on a national level for example to create a new progress reporting tool.

North West Coast Connections

All Members have been notified by email by Science Officers about the consultation about to begin 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.

National Grid have now announced the date for the beginning of their public consultation, when they will be holding roadshows around the area and providing more 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 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>



Fig. 1. Section of model showing 'tidal gateway' across Solway Firth.



Fig. 2. Artist impression of 'tidal gateway' across Solway Firth.



Fig. 3. Section of model showing 'tidal gateway' across Ribble Estuary.



Fig. 4. Artist impression of 'tidal gateway' across Ribble Estuary.

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. The intention is to develop an outline proposal for submission, and also to cultivate links for future work with the University.

Use of Limestone in Sea Defences – Project Proposal with Blackpool and the Fylde College

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. An initial approach to academics at BFC has resulted in a positive response. They are ideally placed (local) to regularly visit the site. A proposal will be drawn up with them, and it is hoped that Wyre BC will also support the research.

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 IFCAs 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 received reports for some time now over the amount of fish drawn into the water cooling intakes. 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.

In respect to the Eel's Regulation IC this is within the Permit which is a published document, with the wording from the permit below:

“The Operator shall undertake a review of the existing screening measures at the intakes and outfalls which provide and discharge water to and from the premises. The review shall be undertaken with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency “Safe Passage for Eel” Regulatory Position Statement version 1 dated July 2012.

The Operator shall submit details of the arrangement suitable to meet the requirements for the safe passage for eels [of the Eels (England and Wales) Regulations 2009 (SI 2009/3344)] by either:-

- Providing a written proposal for the installation of an eel screen.
- Providing a written proposal to the modification of existing screening arrangements.
- Providing a written response with an explanation and description of how the existing screening arrangements can be regarded to meet the requirements for the safe passage for eels [of SI 2009/3344] either without change or with mitigation measures.
- Providing a written response setting out a case for an exemption

In all cases, the proposal shall be submitted in writing for the approval of the Environment Agency. Where appropriate, each proposal shall contain an assessment of alternative options considered including impacts on other fish species and an explanation of why the proposed option has been chosen.

Where installation of eel screen; modification of existing arrangements; or mitigation measures are proposed, the submission shall contain relevant timescales for installation in accordance with the Safe Passage for Eel Regulatory Position Statement version 1 dated July 2012.

The proposals shall be implemented in accordance with the Environment Agency's written approval.

The date for completion will be 30 September 2014”.

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.

Science Team
4th August 2014