

**SCIENCE SUMMARY REPORT**

**Cockle and Mussel Fisheries in the NWIFCA District**

There have been on-going low levels of hand-gathering of size mussel in the Duddon Estuary. The current fishery issues requiring management decisions (Solway cockles and Foulney mussels) are dealt with in separate papers.

**Heysham Flat seed mussel**

The hand-gathered seed mussel fishery at Heysham Flat was opened to Byelaw 3 permit holders on 26<sup>th</sup> August with authorisations ending on 30<sup>th</sup> November 2014. An access and fishing exclusion zone is detailed in the authorisation (as shown in figure 1) 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 230 tonnes has been reported to have been landed up to the end of September.

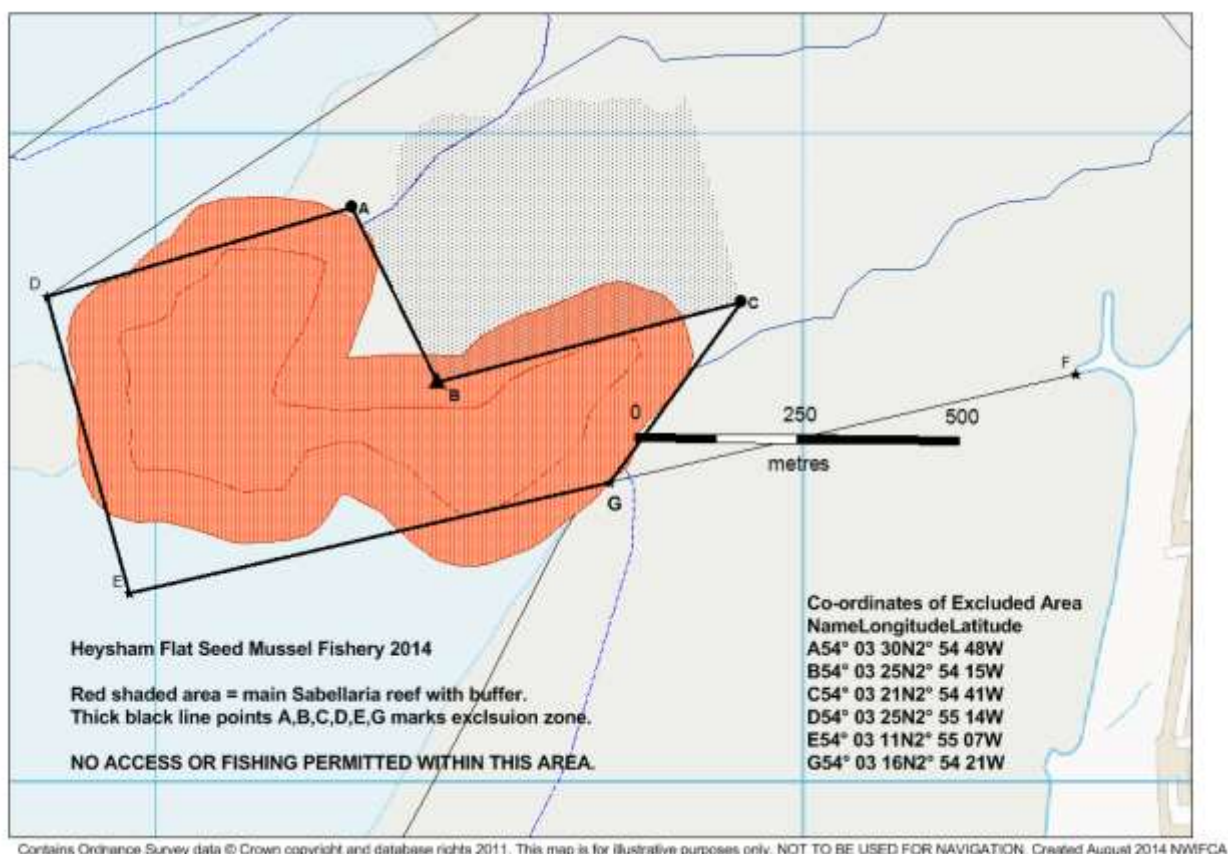


Fig. 2. The exclusion zone for Heysham Flat seed mussel fishery

**Perch Scar seed mussel, Fleetwood**

Following discussion at the TSB meeting on 15<sup>th</sup> 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 have been produced and the Perch Scar seed mussel fishery (Fig. 2) will be opened to hand gatherers on 22<sup>nd</sup> October 2014. The authorisation contains several conditions such as fishing only between Monday and Friday and that tonning up must take place in the Sunken car park off Dronsfield Road, according to rules put in place by Wyre Borough Council. If the fishery is not prosecuted by hand-gatherers within a week of opening then it will be opened as a small dredge fishery, as agreed at the TSB meeting.

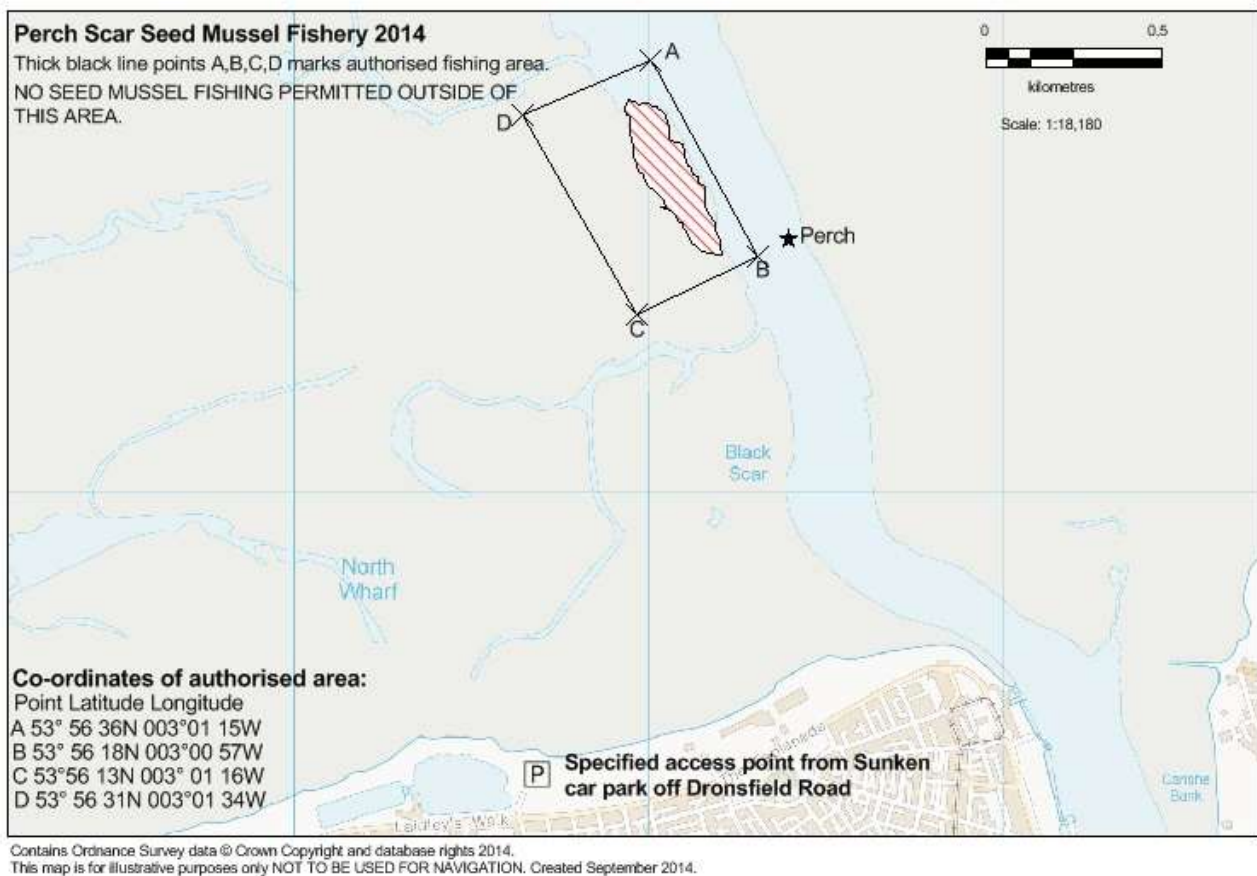


Fig.2. The Perch Scar seed mussel fishery authorised area

## Dee cockles

Ms Temple assisted with a cockle survey carried out by Natural Resources Wales on 8<sup>th</sup> 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 in the Dee could continue at the current TAC for the remainder of the season.

## 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. 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. IFCOs are recording fisheries activity information from across the District to assist with data acquisition and the Science Team have accompanied them on patrols and familiarisation visits, including Drigg winkle inspection, Ravenglass crab tile inspection and Mersey RIB patrol. Three gear/feature interactions have been selected for the next set of assessments which Officers will be starting in coming months. These are potting on reef features (Lune Deep), longlines and beach netting in the southern part of the District.

## **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

We expect to hear information on whether the funding bid has been successful around the middle of November.

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

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 6<sup>th</sup> 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 due to begin on 13<sup>th</sup> 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.

## **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.

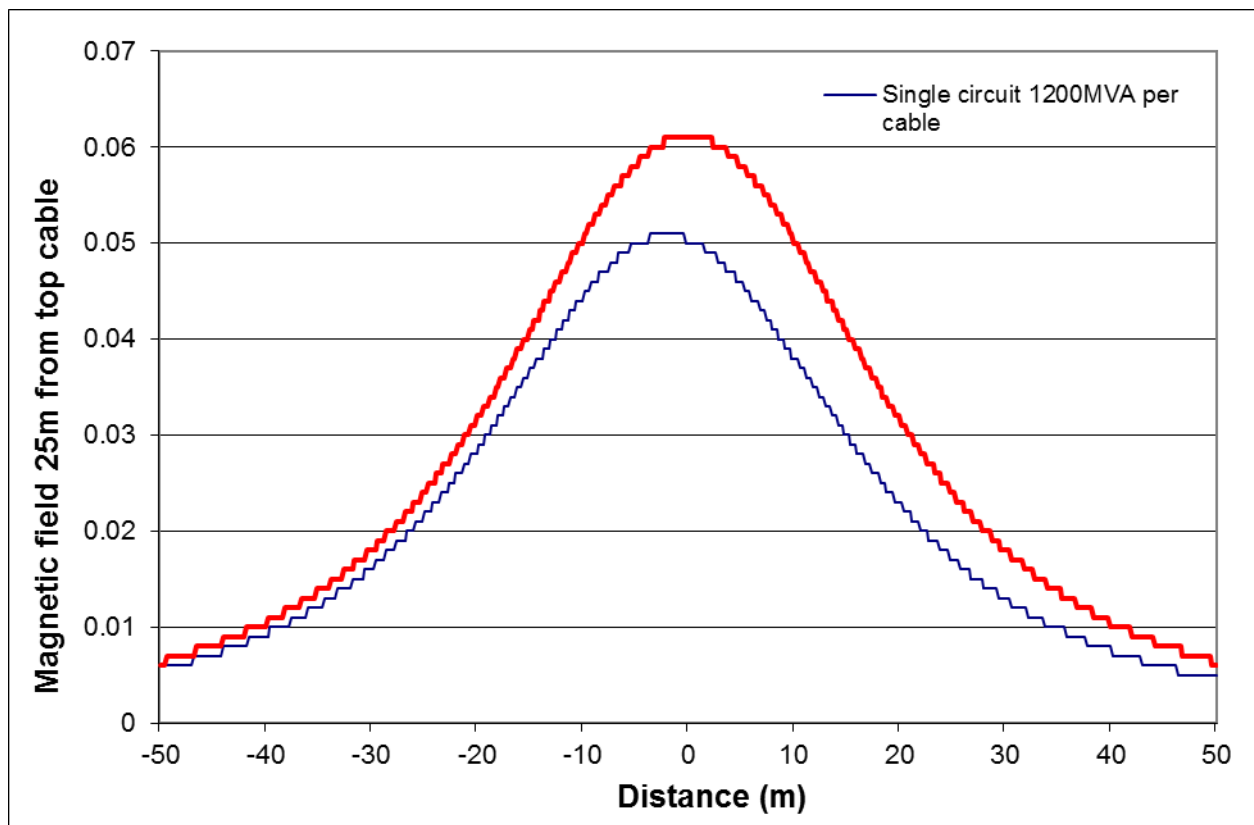
If the tunnel option goes ahead our cables will be housed in a deep tunnel at least 25m below the sea bed and the magnetic fields from cables reduce very rapidly with distance. It is not anticipated

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.

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



Science Team  
14<sup>th</sup> October 2014