

**NWIFCA Technical, Science and Byelaw  
Committee**

**14th May 2019: 10:00 a.m.**

**AGENDA  
ITEM NO.  
5**

**SILLOTH SUBTIDAL MUSSELS REPORT**

**Purpose:** to provide an update to members on work carried out since the March Authority meeting;

**Recommendations:** that the report be accepted.

**Background:**

1. Representatives of the mussel fishermen from Silloth in the Solway attended the March Authority meeting to express their frustration at not being permitted to dredge the subtidal mussel in the Solway, which they had been under the previous Cumbria SFC management.
2. As has been minuted, Mark Johnston from Natural England explained that the legislative framework for managing fisheries has changed since then, and that there was potentially a risk to the Solway Firth SAC subtidal conservation features from mussel dredge activity.
3. The NWIFCA is legally bound to carry out robust HRAs on all fishing activities occurring within EMS. For the Solway subtidal mussel, this requires sound evidence and data, not only on the stock to be fished, but the nature of the substrate on which it sits, which is thought to be highly protected reef, and the longevity of the mussel resource which is also classed within the EU designation as a protected blue mussel reef.
4. Efforts to obtain this evidence through use of the NWIFCA subtidal survey equipment (side scan sonar, Day grab, and camera) have begun. However there have been logistical difficulties with the equipment, the vessel and the weather.
5. The Authority gave an undertaking to the Silloth mussel fishers that it would prioritise moving this work forward.

**Progress to Date:**

6. Since the Authority meeting the Science Team have been investigating options of re-surveying the area using a mini-Hamon grab. The current Day grab jams open if any large mussels or cobbles are in the teeth of the grab when it is closed on the seafloor, and the sample is lost as it is winched up. This occurred during the surveys in February at some survey stations, when Day grab and Olex ground discrimination work was carried out.

**Contracting Out:**

7. Two marine surveying businesses have been contacted, along with Cefas and the EA, to examine possibilities of contracting the work out. Independent consultancy costs aboard their vessel using their crew and NWIFCA scientists would cost around £6,000 **per survey**.
8. The cost per survey for Cefas RV Endeavour would again be high and the earliest it could be done would be early September. However it has been established that the area is not suitable for this vessel due to the shallow waters.
9. Cefas could contract out a mini-Hamon grab along with member of staff to work the gear on-board North Western Protector. This would be subject to a Hire and Loan Agreement, and fall under NWIFCA insurance requirements.

#### Acquiring NWIFCA min-Hamon Grab:

10. Science team and NWP crew have been in discussion with an engineering company, Duncan and Associates from Grange-over-Sands, for a bespoke designed and engineered mini-Hamon grab. This company supply subtidal survey equipment to a variety of research and industrial organisations across the world: <http://www.duncanandassociates.co.uk/>
11. A visit to NWP by their engineer resulted in a bespoke design being drawn up for our vessel. However two drawbacks have been identified, which are being further investigated in an effort to resolve them. A verbal update will be given at the meeting.
12. A quote for purchase of an alternative grab supplied by Ocean Ecology has also been obtained, which satisfies one of the draw-backs: <https://ocean-ecology.com/>

#### Surveys carried out in 2019:

13. February - Day grab samples carried out over a 250m grid. The data is being processed and will be overlaid on to the Olex data when all the software is in place. There was mussel present ranging from 25mm to 65mm on a mixture of substrates from mud / sand / coarse sediment / cobbles.
14. Olex ground discrimination with ES60 sounder – once at a low frequency (38 hz) and once at a high frequency (200hz). Identified that special software to use Olex data in MapInfo is needed to overlay the grab sample information. This has now been acquired and efforts continue to process and analyse what has been obtained so far.
15. April - side scan sonar survey. This unfortunately hit a major issue when the 'fish' was being deployed and no data was obtained despite intense efforts by science team and crew to resolve it while at sea. The manufacturer has been contacted as it is believed the damage has been caused by a fault in the equipment and will be returned for repair.
16. It was noted that on a day with good weather conditions and a neap tide, currents were still running at 2.5 knots two hours before high water, and 1.1 knots one hour before HW. This leaves very little time of slow water for survey which the side scan requires.

#### Other Work:

16. A summary document has been produced amalgamating known reports and fisheries activity of these mussel beds, and provided to Natural England. This provides context in which current management can sit and does show the variable nature of the mussel resource. Interestingly an old report from 1995 was found, where MAFF (Ministry for Agriculture, Fisheries and Food - the forerunner to Defra) carried out surveys using four methods for assessing the subtidal mussel stock. They clearly also hit difficulties with all four methods: day grab, underwater 'television', cockle suction dredge and adapted scallop dredge.
17. A meeting was held with Natural England in early April when training for staff in processing and understanding of Olex and side scan data was discussed. Unfortunately funding was not forthcoming from national NE, and so alternative options are being further investigated. Again a verbal update will be given at TSB.

#### Future Plans:

18. Future plans depend on acquiring / hiring a mini Hamon grab to improve on the sampling, and to overlay data obtained on to Olex data to gain an improved understanding of what is on the ground. This should be bolstered by side scan sonar data, assuming tidal conditions in the Solway allow.

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**15<sup>th</sup> April 2019**