

NWIFCA TSB Quarterly Meeting: 11th February 2025

Agenda Item
8

SURVEY AND INSPECTION REPORT 5TH NOVEMBER 2024 – 29TH JANUARY 2025

Purpose: To report on surveys and inspections in the last quarter, and update members on the mussel and cockle fisheries in the district.

Recommendation: Receive the report and related survey and inspection notes.

BACKGROUND

Every year NWIFCA officers undertake extensive surveys and inspections of the cockle and mussel beds across the NWIFCA District. The aim of the surveys is to conduct stock assessments on each bed, and the aim of the inspections is to gather information in areas that either; a) do not have enough stock to warrant survey, and/or b) conditions of the bed preclude surveying – for example, large channels or short exposure times which limit the time officers can safely access. Inspections may also take place to see if a full stock assessment is needed.

Mussel bed surveys and inspections

Large, accessible mussel beds that are stable (large areas are not frequently washed away) are typically surveyed by the Dutch Wand method. This method allows officers to calculate an overall biomass of stock on the bed, identify the proportion of the population that is size, and map a perimeter. Beds that are typically surveyed by Dutch Wand include: Foulney mussel bed, Low Bottom, and Walney Channel. Mussel beds which are exposed for short amounts of time or are typically fished for seed mussel and are therefore liable to large changes over short periods are inspected visually, with reports presenting pictures and a description of the stock. Beds that are typically inspected using this approach include: Fleetwood, South America, Falklands, and Heysham.

Mussel inspection methodology overview

Inspections of mussel beds are undertaken by officers who will walk the perimeter of the mussel bed with GPS to map the location and extent. Officers will then access the middle of the bed and as much as can reasonably be accessed, taking notes on this size, coverage, presence of any important features (presence of sabellaria, exposed cobble and boulder substrate, depth of mud, indications of scour, looseness of mussel), and mussel size composition. Full inspection criteria is detailed in the agreed Agenda Item 10 at the February 6th 2024 TSB meeting: (<https://www.nw-ifca.gov.uk/app/uploads/Agenda-Item-10-Seed-mussel-definition-of-ephemerality-TSB-February-2024.pdf>). Typically these surveys are limited by tides and can only be conducted on spring tides. Inspections are undertaken to assess the suitability of a bed for either a seed or size fishery.

Sidescan survey methodology overview

In the northern part of the district in the Solway, there have historically been sub-tidal mussel beds. Due to these beds being predominantly covered by water, the ability to survey them in the standard way (on foot or quads) is precluded. In 2019 NWIFCA developed a methodology which includes using side scan

sonar (SSS) and the use of a Hamon grab to ground-truth imagery. Side scan sonar involves using a device that sends out acoustic pulses that are reflected back from the seafloor forms an image of the topography. It is a widely used method for determining seafloor substrates or features. The detected substrate can then be ground-truthed with the hammon grab – which takes grab samples from the seabed for analysis. The aim of NWIFCA’s method is to assign substrate types to specific signals of SSS data with high levels of confidence to reduce the necessity to ground-truth by grab sampling and assign habitat types to a large area. This will enable rapid and effective evidence gathering in an area that is particularly problematic to survey sub-tidally (due to turbidity, currents and shallow water).

This quarter, no cockle surveys have been undertaken.

1. MUSSELS

Between 5th November 2024 and the 29th January 2025, NWIFCA science officers carried out two mussel inspections and two mussel surveys (one on foot, one SSS on North Western Protector) across NWIFCA District.

The mussel survey in Walney was part of a student project and so a report is not provided at this time. Full inspection reports are provided in Annex 1 of this report.

Table 1. Mussel survey and inspections this quarter.

Surveys and inspections reported on this quarter	Date
Mussels	
Morecambe Bay: Heysham inspection	14-11-2024
Walney channel/Barrow inspections	12-11-2024
Walney channel/barrow survey (for UL students)	07-01-2025
Solway: Solway Firth side scan survey	19-07-2024

a) Morecambe Bay mussel beds overview:

1) Heysham

Size of mussel on the bed varied over the entire skewer. There were patches of size mussel mixed in with a variety of smaller sizes, most around 15-35mm. Most of the live mussel was also mixed in with dead shell. No small mussel seed was found. Mussel coverage across the bed was highly variable. There were dense patches (~80%) interspersed with areas of very low coverage (~10%). There appeared to be mussel on the outer skewers, but the water depth at Dallam Dyke made this area inaccessible, and officers were unable to assess whether the mussel was dead or alive.

There was significant historic *Sabellaria alveolata* across the bed, mostly dead but some live areas were visible. Numerous bird species were present feeding in the Heysham Flat area, including oyster catchers, egrets, and herring gulls.

2) Walney Channel

Mussel condition varied across the patches at Walney Channel. There are substantial areas of black coloured size mussel, particularly in the more northerly patch, however, there are also large areas of dead shell, and heavily barnacled mussel. Mussel was predominantly 45 – 60 mm and several sea birds were also seen feeding around the mussel bed including oystercatchers.

b) Solway Firth mussel bed survey overview:

A detailed report of the Solway mussel bed survey is provided in Annex 1 of this report.

In summary, the sidescan sonar and grab sampling work identified no mussel in the survey area at this time. The survey area was based on historical known locations of mussel that were also previously detected in sidescan surveys reported in 2019 and 2020. The survey successfully identified the habitat and benthic seabed types of over 20 grab samples in 5 kilometers of side scan array.

2. COCKLES

No surveys have been undertaken this quarter