

BIM EMFAF Work Programme Project Report 2022

BENEFICIARY:	Bord Iascaigh Mhara
PROJECT REFERENCE NUMBER:	22/KGS/STS-BG010-BR095
NAME OF PROJECT:	Shellfish Survey Programme
IMPLEMENTATION PERIOD:	1st January to 31st December 2022

Project Scope

In order to further optimise shellfish production, the collection and communication of field data is required by the sector. Data is essential in support of the seed mussel fishery so as to minimise consumption of fossil fuel by the sector and to generate data in support of sustainable management measures. It is also essential to be able to assess and advise on the productivity and capacity of shellfish production areas. The core part of this project involved carrying out subtidal seed mussel surveys, using acoustic data, biological sampling and GIS following a robust and reliable methodology.

Further, as the occurrence of naturally occurring wild seed mussel beds is highly seasonal and irregular and because of misguided but widely held views about the impact of dredging operations on the benthos, there is a growing interest in the concept of augmenting the juvenile supply of mussels to the BG mussel sector. To support these efforts the project also focussed on potential brood stock biomass estimation, bivalve larval monitoring, genetics of stocks, seed survival and condition/spawning stage of both seed mussel stocks and mature stocks.

The project also focussed on native oyster fisheries and the integration of aquaculture practices and fisheries management practices to enhance native oyster recruitment in oyster order areas. BIM has been working in collaboration with the Marine Institute and industry in enhancing European flat oyster habitats using aquaculture practices. Work has been done to optimise the use of spatting ponds through trialling different settlement materials and controlling environmental parameters. The resulting spat on shell has been reared under different aquaculture nursery scenarios and broadcast onto protected beds where it is being monitored for growth and survival alongside weathered cultch which was deployed into selected areas for habitat restoration and enhancement of natural recruitment.

Objectives

The Shellfish Survey Programme 2022 was divided into two discrete work packages, one related to the bottom mussel grown mussel and the second looking at restoration of the native oyster.

The main objectives of the bottom mussel program were to map and quantify subtidal seed mussel beds around the coast of Ireland. Thus inform the sustainable management of the fishery using expert knowledge in a cost-effective way using the BIM inshore survey vessel.

This was achieved by producing survey reports that are made directly available to the industry and DAFM via the BIM website once an area of interest has been covered. Those reports detail the location of the seed mussel settlements, their estimated biomass, the nature of the seabed, the quality of the seed mussel. The



survey information obtained is then used to determine if the beds are suitable for fishing or whether they should be closed for a certain period.

The objective of determining the genetic distribution of the mussel around the coast of Ireland was to access the locations with mixed or pure *Mytilus Edulis* (Me) *Mytilus galloprovincialis* (Mg) and hybrid populations. Testing the community ratio of relayed longline seed mussel on bottom mussel sites overtime will determine which species has a higher survivability rate. This will then feed essential information to Industry which in turn can then select certain seed mussel sources which may have a higher rate of survivability in a particular bottom mussel relay site overtime. This particular project will finish in 2023.

The main objectives of the native oyster programme are to optimise spat production and nursery culture of the European flat oyster and work with all stakeholders and to monitor reef formation of relayed stock. These outputs seek to demonstrate the importance and investigate the effectiveness of aquaculture practices in the protection of ecosystem health and the promotion of biodiversity.

Outcomes

Maximum approved expenditure on the project totalled €203,000 corresponding to the following headings:

- Associated survey running costs of M.V.T. Burke II such as fuel and berthing fees etc.
- Contractors to supply skipper (outsourced)
- Condition index sampling and boat hire (outsourced)
- European flat oyster spat production and monitoring costs
- Associated sampling consumables cost

The project outcomes for 2022 were as following:

- 42 days were spent at sea searching and assessing seed mussel beds.
- Five settlements were found on the east coast (mainly county Wexford and in Wicklow), representing around 11,250 tonnes of seed mussel at the time of the surveys.
- One settlement was found in Cromane, representing 2,121.75 tonnes.
- The seed mussel fishery was therefore successfully opened in early September on the east coast, and early October for Cromane.
- One bed was partially survey for post fishery biomass.
- Two rounds of genetic screening (600 individual mussel approximately) were carried out on the test plots to assess the species ratio evolution.
- Four spatting ponds were commissioned. Nutrient analysis of the pond water was analysed to compare the impact of natural settlement materials as opposed to man-made settlement materials on water quality in the ponds.
- Two new nursery sites were established employing swinging basket technology to rear 6-month-old spat from 2021 over a 12-month period. Each site was sampled for growth and survival twice over this time and was to be transferred to the seabed in the first quarter of 2023.
- Cultch sites in Clew Bay were monitored twice during 2022 and results were provided to MI for analysis and reporting.
- A Workshop for all Irish native oyster stakeholders, under the umbrella of the Irish Native Oyster Fisheries Forum (INOFF), was held in July to share results of the various stock enhancement and restoration projects underway and to work towards a common approach to drafting management plans for the different *O.edulis* resources around the coast.
- All survey reports are available online at the following address: <http://www.bim.ie/our-publications/aquaculture/>



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Summary of Project Spend

Summary of Spend	
Total Approved Costs	€203,000
Total Eligible Expenditure	€202,821
EMFAF Eligible Expenditure	€101,411
Exchequer	€101,411

Report by: Nicolas Chopin and Patricia Daly

Date: February 2023



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