Native Oyster Growth and Survival Trials

Additional seabed plot in the Dornoch Firth

Experimental deployments Autumn 2022

Additional Supporting Information.

Background

This application is for an additional experimental plot (Mid Plot) for a short term native oyster growth, survival and biodiversity development experiment, not for profit or consumption but with nature conservation aspirations. The experiment builds on the findings of earlier, similar deployments in the Dornoch Firth with permissions and licences for two plots originally granted in 2016, relocated in 2018 with the experimental timeline extended in 2020. The two existing plots are subject of further applications to extend timelines to 30th September 2025.

Experimental equipment would be deployed within the plot as depicted on the attached plans.

The equipment deployed to site will be 15no Oyster Bags each 0.5m x 0.5m x 0.5m and 60 plastic boxes 0.25m x 0.25m x 0.25m, all pinned to the seabed with metal rods. Each site will sub-divided into 25 experimental plots each 5m x 5m with the corners marked with road pins. The surface of the centre of half of the plots will be dressed with $3m^3$ of cleaned cultch, the remaining half of the plots will remain as native seabed. Approximately 400 oysters will placed in the centre of each plot. The total area covered by equipment will be $7.5m^2$ extending a maximum of 35cm above seabed which will be fully confined to the seabed at a minimum of 2m depth at chart datum, there will be no equipment deployed on the surface of the water.

Stocking densities will vary across the equipment deployed as part of the experiment but will average 200 oysters/m^2.

The overall purpose of the experiment is to establish if present day conditions in the Dornoch Firth are still suitable for native oysters. Native oysters are known to have existed previously at this location. Due to the small scale of development in 25m x 25m plots and the intention to remove all equipment at the end of the experimental period it is not considered that the experiment will significantly impact on any features of nature conservation significance.

Impact on Natural Heritage

The Dornoch Firth is designated as a Special Area of Conservation as part of the Dornoch Firth and Morrich More SAC and the Moray Firth SAC. Features of interest include sensitive shellfish habitats (*Modiolus modiolus* and *Mytilus edulis*) forming biogenic reefs. These habitats were not found in the proposed experimental area. There would be no disturbance to protected species such as seals and wading birds within the Dornoch Firth because the proposed experimental site is away from low shore haul-out sites.

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Biosecurity Measures

The experiment will use 10,000 native oysters (*Ostrea edulis*) across the deployment and the experimental population will incorporate both part grown and adult oysters. The Code of Practice for Non-Native Species for Scotland has been carefully considered. Adult stock and part grown oysters will be transferred to Home Office licensed, closed aquarium facilities at HWU Edinburgh. The oysters will be scrubbed, and the shell surfaces sterilised in a formalin solution and then quarantined for 3 weeks in U/V sterilised water then surface sterilised again before being deployed to the experimental sites in the Dornoch Firth. The purpose of the biosecurity is to avoid transfer of possible non-native species such as *Sargassum*, *Styella* and *Crepidula*.

Landscape and Visual Impact

The development will be entirely subtidal, with no visible surface equipment, there are not therefore any landscape/seascape considerations in respect of the proposals.

Navigational Impacts

The only fishing vessels permitted to tow mobile gear in the Dornoch Firth are mussel dredgers and the fishing rights are held by Tain Common Good Fund and administered by The Highland Council. The mussel fishing vessel has recently been sold and there is no mobile fishing activity within the Firth at this time. In the event that mussel fishing activities recommence during the lifetime of the experiment it would be straightforward to inform the operator of the location of the development. The proposed location lies outwith the area of the mussel beds. There will not therefore be any impact on fishing operations with mobile gear. On occasions creel fishing vessels may operate in the firth and will be informed of the presence of the experiment by local notices to mariners as required by marine licensing. There are not known to be any other vessels routinely operating in the Firth and the development does not present any navigational hazard.

The proposed development will not have any impact on water quality within the Firth at the scale of the experiment proposed.

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24/08/2022