

Native Oyster Growth and Survival Trials

2 No. seabed plots in the Dornoch Firth

Experimental deployments spring/summer 2018

Additional Supporting Information.

Background

The proposal is 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. These deployments were granted planning permission and marine licenses in 2016 and are due to be completed and fully removed in September 2018. It is intended that the new deployments will take place during the spring / early summer of 2018 and will run for 24 months.

Experimental equipment would be deployed within two 25 x 25m subtidal locations as depicted on the attached plans. The sites are subject to two separate planning and Marine licence applications referred to as "New West Site" and "New East Site" which are approximately 7.5 km apart.

The equipment duplicated on each 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 3m³ 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 7.5m² which will be fully confined to the seabed at around 5m depth, 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/m² across all experimental equipment and plots.

The 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 in these locations. 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 protected benthic conservation features.

During the 2015 Heriot-Watt University (HWU) survey of the seabed using experienced scientific divers, mobile sandy habitats with dead mussel and oyster shell were found in the proposed areas. These habitats are robust, low diversity habitats and are not sensitive to disturbance. We predict there will be no detectable effect from the placement of the equipment which will extend to a maximum of 100m² in total across both sites.

2 years after the deployment of equipment all traces of the experiment will be removed.

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 areas in the HWU survey but were found further to the east, especially in the entrance to the Dornoch Firth. 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. In the event that charter vessel requires to transit into the Firth, it will be navigated in such manner as to avoid disturbance to seals hauled out within the SAC.

Biosecurity Measures

The experiment will use 10,000 native oysters (*Ostrea edulis*) across each site during the 2 year 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. Certified *Bonamia* free adult stock from Loch Ryan and 5g seed stock from Lochnell would 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*. With regard to biogenic mussel reef features in the Dornoch Firth, the parasite *Mytilicola intestinalis* was found not to be present by HWU experts in translocated oysters (03/2017) and neither were bacterial pathogens harmful to human health such as *Vibrio* spp. and coliforms (eg *E. coli*).

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 proposed 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.

Planning Conditions

The applicant is aware of various planning conditions that have been attached to permissions for shellfish farms in Highland. The applicant is of the view that the following or similar conditions

would be reasonable in order for the planning authority to manage any potential impacts of the proposals:

The experimental site shall be stocked with native oysters (*Ostrea edulis*) which have originated from Loch Ryan and/or Lochnell. Oysters will have undergone the biosecurity measures and screening as set out in the planning application, unless otherwise agreed in writing by the Planning Authority. All oysters stocked on site shall be certified as free of disease and other species.

Reason: In order to protect the biodiversity of the surrounding environment from impacts associated with the introduction of non-native species.

Planning Permission is hereby granted for a temporary period only and shall cease to have effect on a date 24 months after the date of commencement of development; or until such date as the experimental equipment is removed from the site whichever is sooner.

Reason: The proposal seeks time limited use of the seabed in the manner described in the application.

Jim Bromham
Lochside Associates
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