

PLACEMENT OF OYSTER CULTCH  
LOCH RYAN OYSTER FISHERY COMPANY LTD.

SUPPORTING STATEMENT

Lochside Associates has been asked by Glenmorangie Ltd. to prepare and submit Marine licence application for the placement of scallop and oyster shell on the seabed within Loch Ryan Oyster Fishery. The application is made in the name of the Oyster Fishery operator Mr Tristan Hugh-Jones, a supply partner in the DEEP project.

The DEEP, (Dornoch Environmental Enhancement Project), is a collaboration between Glenmorangie Distillery, Heriot Watt University and The Marine Conservation Society and is part of UK wide network of oyster enhancement projects. As the UK wide improvement and enhancement of native oyster stocks matures there is significant potential for wider ecosystem services from the oyster reefs themselves.

In addition, this project seeks to demonstrate the effective reuse, rather than disposal to land, of inert shell waste from shellfish processing in Scotland. Within the wider DEEP project future employment and inward investment opportunities, will be realised if significant quantities of shell waste can be used in this manner. These opportunities may include the future hatchery production of native seed oysters and husbandry oyster beds as well as boat and equipment supply and maintenance services. In addition project partners see the potential for the enhancement of biological features and processes within the natural environment as a fledgling industry sector in its own right and welcome the opportunity to be at the forefront of this exciting development.

The placement of settlement cultch into native oyster fisheries is a practice that had been carried out for many generations within native oyster fisheries. The cultch presents a surface which larval oysters can settle onto, but which is readily dredged to recover oyster to the surface at harvest. During harvest market size oysters are sorted and retained on board the harvest vessel with undersized oysters returned to the seabed to mature and with breed naturally on the seabed for several seasons before harvest. Over time the thickness of

settlement cultch will become reduced through successive dredgings and therefore need to be replenished.

During diver survey works undertaken in late June it was established that cultch in some areas of the fishery were thin and that this would potentially lead to reduced settlement opportunity in the coming settlement season - late July 2019. The proposals are therefore bound by very tight biological timescales such that if deployment cannot take place by the end of July the opportunity will be missed for a year.

Sources of shell for use of cultch had previously been identified for potential use in other elements of the project, these sources are mussel shells from Scottish Shellfish Marketing Group in Bellshill, these have been through steam cooking and weathering process. The Scallop shells are sourced from West Coast Sea Products in Kirkcudbright and have been weathered in bunds for at least 2 years. Examination of shell samples has shown that the shells contain no active biological material and no surviving external biota after this period.

Shell waste of this type is historically classified under Animal By-product Regulations as Category 3 ABP. After consultation with Kenny Boag of SEPA and visits to shell waste sites, there is a now much clearer opportunity to understand that the change in processing of scallop shell has meant that the residual biology of these shells are now much less in volume and therefore less of an environmental issue, than previously thought.

‘Weathering’ leaves shell material with negligible or no residual biology.



The ‘Weathering’ technique is used successfully in the USA and Australia. The Billion Oyster Project<sup>1</sup>, for example, collects shells and cures those for one year before they are used both as reef or bed material for Oyster settlement and as shells for energy absorption in coastal areas.

Dr Bill Sanderson of Heriot Watt is the Research Director of the DEEP project and has analysed the shell material at West Coast Sea products site and found no residual biology in 20 tonnes of shell material weathered for two years. There is therefore no risk that shellfish pathogens would persist in either residual foot or the external shell surfaces and bacterial loads associated with decomposition would be negligible. The industry ‘norm’ is that anything left to cure or weather in this manner is effectively inactive after a year.

We have also ‘Weathered’ mussel shell to the same degree and have the same results.

### **Fit with Scotlands National Marine Plan**

The following table sets out our consideration of the proposal against the policies within Scotlands National Marine Plan.

<b>GEN 1 General planning principle:</b> We consider that the proposed experimental deployment is consistent with the policies and objectives of Scotlands Marine Plan.
<b>GEN 2 Economic benefit:</b> Wider DEEP project will ultimately support hatchery and husbandry employment
<b>GEN 3 Social benefit:</b> Benefit to society through ecosystem services offered by re-establishing native oyster beds
<b>GEN 5 Climate change:</b> Wider DEEP project as part of a network of similar projects has potential to positively impact climate change through carbon sequestration.
<b>GEN 6 Historic environment:</b> No impact
<b>GEN 7 Landscape/seascape:</b> No impact
<b>GEN 8 Coastal process and flooding:</b> No impact
<b>GEN 9 Natural heritage.</b> Outwith designated sites
<b>GEN 10 Invasive non-native species.</b> Introduction of INNS is a serious concern for the project partners. If accidental introduction of INNS was to occur it would result in significant environmental disruption as well as significant reputational risk for all involved. No non-weathered shells will be used in the deposit, and samples of the shell will be inspected prior to their use as cultch. It is intended that an inspection visit to West Coast Sea Products is carried out in late July and that this will also involve officials from regulatory bodies.

<sup>1</sup> <https://www.wbur.org/npr/654781446/oysters-on-the-half-shell-are-actually-saving-new-yorks-eroding-harbor>

<b>GEN 11 Marine litter:</b> Any tote bags used in deployment will be recovered to shore for onward disposal
<b>GEN 12 Water quality and resource:</b> no negative impact
<b>GEN 13 Noise:</b> short duration low level noise during boat movements.
<b>GEN 14 Air quality:</b> no impact
<b>GEN 18 Engagement:</b> none
<b>GEN 19 and GEN 20:</b> The proposals provide the opportunity to re-evaluate policy relating to the use of animal waste products that have been rendered biologically inert by weathering. Waste management hierarchy recognises that reuse of waste (in this case shell waste from processing) is more desirable than disposal.
<b>GEN 21 Cumulative impacts:</b> none anticipated
<b>FISHERIES 1 – 3</b> Deposit within a private oyster fishery, no fishing activities impacted
<b>AQUACULTURE 1-3 :</b> N/A
<b>AQUACULTURE 5:</b> No impacts
<b>AQUACULTURE 6:</b> N/A
<b>AQUACULTURE 7:</b> No impacts
<b>AQUACULTURE 8:</b> No impacts
<b>AQUACULTURE 9:</b> N/A
<b>AQUACULTURE 10:</b> No stakeholders will be affected by the proposed experimental deployment.
<b>AQUACULTURE 11:</b> deployment will utilise industry standard mesh oyster bags weighted and pinned to the seabed.
<b>AQUACULTURE 12 - 14</b> N/A
<b>WILD FISH 1:</b> N/A
<b>REC &amp; TOURISM 1 - 5:</b> N/A
<b>TRANSPORT 1 - 6:</b> N/A

Statement prepared by:

James Bromham,

Lochside Associates

9<sup>th</sup> July 2019

All information submitted correct at time of writing.