

Marine Biosecurity: Planning Case Studies

North East Kent Physical INNS Removal

This [project](#) aimed to assess the effectiveness of physical removal of the INNS *Crassostrea gigas* (Pacific oysters). These oysters are grown for food but can proliferate in the wild and cause habitat loss and, in this case, were negatively impacting the protected area.

Volunteers were recruited who were capable of dealing with the physically demanding nature of the work which was undertaken near Ramsgate within the North East Kent Marine Protected Areas. In 2012 the small team of enthusiastic and energetic volunteers were equipped with [suitable equipment](#) and set to work removing the oysters.

Where oysters were attached directly to the chalk reef they were removed by striking the upper valve at the hinge displacing the upper valve but leaving the lower valve in place ensuring that no damage occurred to the chalk which is a designated feature of the Special Area of Conservation. Exposed tissue was readily consumed by gulls and carrion crows which tracked the work party on each event. On non-chalk substrates both valves were removed.

It was decided that, if conditions didn't allow for the removal of more than 20 oysters an hour the project would discontinue and a minimum target of removal of 95% of the oysters with no physical damage to the feature was agreed with Natural England. During the one-year trial period 38 field events were completed. More than 34,300 oysters were removed over this period, at an average rate of 146 oysters per volunteer-hour.

The overall results were positive, using adjacent control sites to verify results the project team identified that at the trial site oyster shells were significantly smaller after the trial than they had been before the removal experiment and that the oyster population had been considerably reduced and the lower shore had been visually transformed from oyster reef to scattered individual spat.

An unexpected benefit came from the volume of public interest generated during field events. In response, a handout was produced which briefly described the trial and the wider non-native project. The project gained coverage from the [BBC](#) and [Kent Wildlife Trust](#) are now extending the 'Coastbusters' project more widely along the Kent coast.



Volunteers at the Kent Coast (Kingsgate Bay) oyster removal project.

Firth of Clyde Forum

In 2012, the Firth of Clyde Forum (FoCF), now the [Clyde Marine Planning Partnership](#), published their [Marine Biosecurity Plan for the Clyde](#). The need to develop a plan had been identified by stakeholders during the development of the Clyde Marine Spatial Plan and following the discovery of the INNS *Didemnum vexillum* in the Largs channel. The aim of the plan, as the Clyde estuary is a large and complex water body, was to encourage action by multiple stakeholders throughout the area. Actions were adopted by various sectors such as recreation, aquaculture and the public bodies such as SEPA. Following publication of the plan the FoCF went on to conduct a successful awareness raising campaign including workshops and associated literature, for example, the '[dangle book](#)' and a laminated identification poster.

Stakeholders took on their actions, too. RYA Scotland undertook awareness raising through their communications with clubs and SEPA trained water sampling staff on how to identify certain INNS – this improved reporting considerably.

The Wildlife and Natural Environment (Scotland) Act was revised in 2011 and the subsequent publication of the Code of Practice led to a lot of questions about best practice from a range of marine industries. In response the FoCF worked with SNH to create [Guidance on Marine Biosecurity Planning](#) and a [Review of Best Practice](#). This document has since been adapted for audiences in England and been adopted by Natural Resources Wales and DEARA.

Commonwealth Games Flotilla

Not long after the Firth of Clyde Forum published the [Guidance on Marine Biosecurity Planning](#), the Commonwealth Games was to be held in Glasgow. This international event attracted world wide publicity and, although sailing is not a sport represented at the Games, RYA Scotland arranged a spectacular flotilla of more than 250 boats down the River Clyde from the sea to the centre to Glasgow. Aware of the possibility of such a significant event introducing INNS RYA Scotland decided to use the new guidance to produce a [biosecurity plan for the event](#).

In gathering data about temperature and salinity in the host waters, RYA Scotland soon discovered that the almost 100% freshwater of the final destination would be intolerable for any marine species. The boats were to stay for 48 hours in this freshwater environment and so it was felt that the whole event was very low risk. Despite this information was circulated to all participants which encouraged a 'Check Clean Dry' approach to the event. Volunteers who were helping to manage the event were given a briefing which included biosecurity rules – anyone arriving with a hull with significant fouling on it would be asked to clean it or would be refused entry. Thankfully, they never needed to enforce this and the event was a spectacular success.



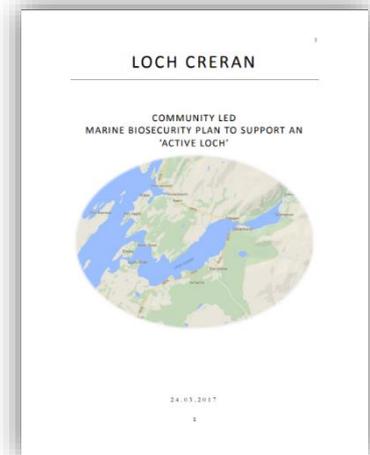
Firth of Clyde Forum hold a 'see is believing' INNS workshop to support publication of their biosecurity plan. Image courtesy S Brown.



Commonwealth Games Flotilla organised by RYA Scotland was a great success and included a biosecurity plan. Image courtesy S Brown.

Loch Creran

The discovery in 2014 of the invasive carpet sea-squirt *Didemnum vexillum* in Loch Creran on the west coast of Scotland was a blow to the local community and to Scottish Natural Heritage and Marine Scotland who are responsible for management of the fisheries and the protected biogenic reefs in the Loch. The local economy revolves around this busy Loch with marine recreation, tourism, commercial shipping and aquaculture businesses all heavily invested in the area. Marine Scotland took the lead and decided to use the new powers available to them under the Wildlife and Natural Environment (Scotland) Act to introduce a Species Control Order (SCO) to help manage the outbreak.



Parallel to the SCO, and in order to ensure that all residents and users played their part in the biosecurity actions, a local contractor was taken on to assist with the development of a [Loch wide biosecurity plan](#). Further [information](#) including a [poster](#) and sector specific information for [shellfish growers](#) was developed. The process of developing the plan was relatively simple and involved meeting all key stakeholders one to one and discussing what would be possible in terms of biosecurity actions for their site or activity, recording this and then developing a monitoring programme to check the effectiveness of the plan. To date the *Didemnum* has not spread from the initial infection site and thanks to ongoing engagement local stakeholders continue to report suspected sightings and undertake their biosecurity actions.

Awareness Raising – The Green Blue

The Green Blue, the environment programme for the RYA and British Marine, was launched in 2005. Over the years the team has developed a wide range of communications materials on topics relevant to boaters, from dealing with [INNS](#) and implementing the [Check Clean Dry](#) campaign, to [antifouling](#) and [wash down](#).

The launch, and associated awareness raising, for their [Check Clean Dry Guide for Inland Clubs](#) included significant outreach to clubs culminating in a feature stand at the RYA Suzuki Dinghy Show in 2016. As part of a week-long awareness campaign for the fifth year of the campaign, the RYA attended a meeting with Lord Gardiner at Walthamstow Reservoirs, one of Thames Water's key recreational sites, to demonstrate how biosecurity measures are being promoted to water users there.

The thinking behind the guide was that, although the principles of Check Clean Dry are simple to grasp, they wanted to help them to think about how they would manage the constant flow of boats to and from their sites, and especially the infrastructure they need to for events.

The Green Blue also developed the [University Sailing Sustainability Charter](#) which includes development of biosecurity actions at Gold, Silver and Bronze levels. The UK RS Aero Class Association was the first to develop an [environmental charter](#), which includes biosecurity actions, under the scheme.

Marina Groups

Beginning in 2015, Natural England began producing focused support for marina owners and managers in England to assist them with understanding the threat from INNS and in developing their own, site relevant, biosecurity plans. In October 2016, Natural England engaged a contractor ([C2W](#)) to work directly with port or marina managers to write biosecurity plans specifically for their operations without any observers present.



Dean and Reddyhoff, MDL, Quay Marinas and Yacht Haven Marina Groups were all keen to take part in the development of site specific plans. Each marina group decided that they would like to approach the work from the perspective of using one site as a test bed with roll out to the rest of their groups' sites when time allowed. Time was needed to successfully convince senior management that this was a useful and important task for their organisations to undertake. Once this approach was established each site had a series of one to one engagements which:

- Explained the biosecurity planning process
- Identified high risk vessels and activities
- Detailed practical biosecurity actions
- Developed a monitoring regime for the site
- Discussed possible issues with roll-out to other sites within the Group.

The outputs include biosecurity plans for [Haslar Marina](#) (Dean and Reddyhoff) and [Conway Quays](#) (Quay Marinas) as well as an estuary wide plan for the Humber (ABP Ports) which includes the ports of Goole, Hull, Immingham and Grimsby.