



Final Report to Natural England

March 2017



This work was funded by:



Managed and delivered by:



With the support of:



and Robin Payne

In partnership with:



Background

Natural England's responsibilities with regards to Invasive Non-Natives Species (INNS) are delivered through the [GB Invasive Non-Native Species Strategy](#). Prevention to reduce the risk of introductions and slow the spread is the priority in the marine environment where eradication or control of species is unlikely to be feasible. INNS are a present and increasing risk to the favourable condition of protected marine sites and impact on achievement of Good Environmental Status under the Marine Strategy Framework Directive and Good Ecological Status under the Water Framework Directive.

Natural England was a key member of the UK and Ireland wide Marine Pathways Project and one of the aims of this project was to work with stakeholders to develop guidance and best practice to reduce the risk of introduction and spread of INNS. As a result a number of training tools on Biosecurity Planning have been produced which are available on the [project web pages](#). This project finished in April 2015, however work is still coordinated by the Marine Pathways Group which consists of members from across Scottish, Welsh, Irish and English governments with the aim of coordinating efforts in the management of marine INNS.

Biosecurity plans are not a legal requirement but are seen as best practice and are in line with aims of the [GB Non-Native Species Strategy](#). [Marine Biosecurity Planning Guidance for Wales and England \(Natural England and Natural Resources Wales 2015\)](#) has been produced to guide the writing of biosecurity plans. Templates and example plans are also available.

As a pilot, a successful Marine Biosecurity Planning course was run in Wales in February 2015 by Natural Resources Wales and was attended by marina managers, port authorities, harbour authorities and other businesses. Following this, site based training was provided for similar stakeholders at four locations on the south coast of England in early 2016.

Based on feedback from previous training, in October 2016 Natural England engaged C2W to undertake the following:

1. Work directly with 8-10 port or marina managers to write biosecurity plans specifically for their operations without any observers present.
2. Undertake an estuary wide biosecurity plan training workshop to draft a biosecurity plan for use across the estuary.
3. Future resources - Develop further biosecurity plan templates to be made available online on the Marine Pathways Project web pages – individually tailored to one off events, specific operations and general site activity.

The purpose of this document is to report on the delivery of these requirements, highlight example biosecurity actions gathered through this process and provide recommendations for future work.

Project Report

The project team was divided into three sections

- Sarah Brown led the overall project and worked with a number of marinas in England and ABP Humber (ports of Goole, Hull, Immingham and Grimsby),
- The MBA and PML Applications Ltd., led on the Tamar Estuary Plan development and TECF interactions and,
- Robin Payne led on the South Devon AONB biosecurity plans development.

The MBA generously supplied relevant INNS survey information throughout the process which was extremely valuable in the development of the Plans.

Marinas and Associated British Ports (Humber)

It was decided to approach the larger marina groups and/or those most at risk in terms of biosecurity. To this end Dean and Reddyhoff, MDL, Quay Marinas and Yacht Haven Marina Groups were all approached by Sarah Brown to take part in the development of site specific plans. Each 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 discuss practicality and roll out with senior management and to ensure that this was a useful and important task for their organisations to undertake. Once this approach was established each pilot site had a series of one to one engagements which:

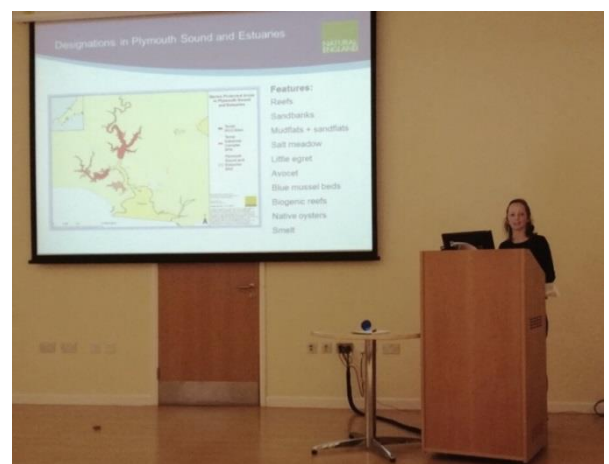
- Explained the biosecurity planning process
- Identified high risk vessels and activities
- Detailed practical biosecurity actions
- Developed a monitoring regime for the site
- Discussed possible issues with roll-out to other sites within the Group.

The outputs included biosecurity plans for Haslar Marina (Dean and Reddyhoff), Conway Quays (Quay Marinas), Lymington (Yacht Haven Group), Hamble Point (MDL Marinas) and an estuary wide plan for the Humber (ABP Ports) which includes the ports of Goole, Hull, Immingham and Grimsby.

A teleconference was also organised with RYA, British Marine and The Green Blue to discuss practical biosecurity measures and advice given to stakeholders.

Tamar Estuaries Plan Development

The team discussed several options before selecting the Tamar Estuary for Biosecurity Plan development. Key to



Presentations formed part of the Tamar Estuary Biosecurity Plan workshop

selecting the Tamar was the improvement programme for England's Natura 2000 sites (IPENS) site improvement programme (SIP) report which included a recommendation for biosecurity planning. This was coupled with the benefit of having a management group already being in place (Tamar Estuary Consultative Forum – TECF) and the large amount of relevant biological data available from the Marine Biological Association (MBA).

The MBA and PML Applications team met with the Tamar Estuaries Consultative Forum (TECF) and began significant dialogue with the group to explain the biosecurity planning process and to start to define practical actions. Working with the group a draft plan was issued and a meeting was held on 1st March 2017 where stakeholders (see annex 1) came together for a workshop on the biosecurity and monitoring actions for the Plan. A species guide and a document setting the context for the Plan were also drafted and circulated to the group.

The Plan was updated following the workshop with additional practical actions and monitoring sites. The Plan was then submitted to TECF as the end user and owner of the actions to determine next steps and disseminate.

South Devon AONB

Early in the discussions regarding the Tamar it became apparent that the South Devon AONB Estuaries officer, Nigel Mortimer, was at a crucial point in developing the marine management plan for the AONB area which lies adjacent to the Tamar, and was keen to include marine biosecurity planning. Following discussions with Natural England it was decided that this would be an opportunity to deliver a significant and beneficial piece of work which would cover the major estuaries of the Yealm, Salcombe/Kingsbridge, Dart and the smaller rivers of Erme and Avon.

Robin Payne led on this work and following a workshop with stakeholders in the area on 15th Feb the biosecurity plans for each of the five estuaries were drafted to a common template. The workshop covered risk assessment, contingency planning, surveillance and monitoring. The draft Plans are now owned by South Devon AONB to determine next steps and disseminate.

Lessons Learned

It was clear from the work undertaken with stakeholders that biosecurity planning is still a relatively new concept. The previous training in 2015/16 with similar stakeholders had helped to provide an introduction to biosecurity planning but few had considered drafting their own plan until the follow-up support was offered in 2016/17. However it was obvious that the offer of support was very welcome and stakeholders were often willing to give considerable time to the development of the plans indicating a willingness to be involved. The main challenges often come with the ongoing enactment of a biosecurity plan and the time required to secure buy in from senior management so additional support is often needed.



Providing samples promotes awareness and prompts discussion.

The data on species provided by the MBA was essential in providing a baseline and answering stakeholder questions about the real and potential risks to their businesses.

Estuary wide and wider landscape issues came up regularly. The Plans with a wider geographical scope and wider stakeholder buy-in clearly had the potential to be successful but they also required both more time to create and will require co-ordination to ensure that they continue to achieve their potential positive impact. Smaller site plans are, by their nature, more contained but are limited in what they can achieve if they are not networked into wider regional plans.

Overview of Biosecurity Actions

The following list of possible marine biosecurity control measures is not exhaustive and every plan develops its own unique actions. It is suggested that anyone drafting a biosecurity plan should take advice from specialists to ensure they are selecting actions which are appropriate and effective for their activity and site.

The type and number of actions included in a biosecurity plan will vary depending upon the individuals, businesses and organisations involved, their operational parameters and budgets. In general, measures will focus on the following aspects of control and awareness raising:

- **Remove** unneeded man-made structures from the water – in general INNS prefer these structures and removal of the preferred substrate is a useful control measure. This could include temporary removal or moving unneeded structures out of the preferred growth zone e.g. removal of mooring buoys in winter to a yard on land and putting the mooring chain to the seabed to smother fouling.
- **Air dry** – most, if not all, marine and aquatic INNS are killed by dehydration. Identify opportunities to dry out equipment or infrastructure as often as possible and for as long as possible e.g. dive kit, trailers or dredgers and barges between uses.

- Expose to **fresh water** – most marine INNS need some degree of salinity to sustain their life cycle – if you can expose them to fresh water through immersion or wash-down you will reduce the risk posed by INNS.
- **Awareness** – many people are unaware of marine INNS, what they look like and the threats associated with them. Your biosecurity actions list should include opportunities for training and dissemination of information e.g. through public signage or ID guides for staff and volunteers.

Biosecurity is most effective when done collectively and all biosecurity plans benefit from the creation of a good network of contacts and active partners. Whilst it is recommended that individual sites create a biosecurity plan for their own operations it is also recommended to have plans which cover large geographical areas which include overarching actions and responsibilities.

Practical Biosecurity Actions

Vessels

- A minimum annual haul out and cleaning of all boat hulls should be encouraged.
- Ensure all vessels are effectively and appropriately treated with antifouling coatings.
- If a vessel has hull fouling in excess of ranking 4 (see ranking below) advice should be given to the owner about biosecurity and they should be encouraged to clean as soon as possible.
- Ensure that vessels arrive clean by writing this expectation into harbour guides.
- Install inceptor or closed-loop wash-down system for cleaning vessels to prevent fragments of INNS re-entering the water.
- Assess the risk of new vessels when they arrive and if necessary ask them to wash down as soon as possible.
- Consider using mid-water transfer for ballast water - see Orkney ballast water management actions www.orkneyharbours.com/pdfs/bwm/Ballast%20Water%20Management%20Policy%20for%20Scapa%20Flow%2010%20December%202013.pdf
- Safely dispose of untreated bilge water using an appropriate reception facility if available.

Onshore Facilities and Infrastructure

- Make vessel haul-out and wash-down facilities and dry stack available.
- Ensure facilities provide wash-down for hull & niche area cleaning in particular.
- For marine vessels, use any freshwater inflows to best advantage to reduce fouling on equipment and vessels.
- Remove any extraneous equipment from the water including warps, fenders, tenders, aquaculture equipment etc.
- Appropriately dispose of dredged material – raise issue of INNS with licensing authority.
- Appropriate disposal of debris removed during cleaning operations i.e. placed in landfill/not returned to sea.
- Coat accessible sub-surface structures with antifoul.

- Include biosecurity information in communications with berth holders e.g. in the annual handbook.
- Check all relevant tenants are aware of the need for clean hulls on vessels including those in the brokerage.
- Survey tenants to ensure they are aware of biosecurity requirements. Encourage tenants to carryout hull/equipment cleaning and ensure no water goes back into marine environment.
- Install and use an interceptor at wash-down points.
- Check all relevant contractors are aware of the need for clean hulls on workboats and other equipment.

Awareness Raising

- Proactively support & communicate “Check, Clean, Dry” (www.nonnativespecies.org/checkcleandry) and The Green Blue (www.thegreenblue.org.uk) messages.
- Follow The Green Blue guidance and work towards a clean, active and healthy marina/club.
- Ensure boat owners are aware of the benefits of annual hull cleaning/removal of fouling.
- Develop ‘toolkit talks’ for staff which highlight INNS issues. Encourage reporting and develop awareness.
- Work closely with relevant organisations such as MCA, RYA, British Marine, The Yacht Harbour Association etc. to identify opportunities for joint work on biosecurity.
- Work with local fishing and pet stores, live food markets and plant nurseries to ensure they are aware of issues and have appropriate signage and knowledge.
- Raise awareness that marine litter can be a [potential pathway](#) for spreading INNS with the local litter campaign groups.
- Raise awareness of the need to remove any unnecessary man-made structures from the water including lowering swinging moorings to the seabed in winter.
- Put in signage about known INNS and the associated risks and practical control measures around the area - at public slipways, beaches and other access points.
- Create a target list of organisations and individuals that could deliver or undertake INNS training to help improve awareness and understanding of the issues.
- Run antifouling best practice days/disseminate information around the area to raise awareness of how to apply coatings and which coatings work best.
- Use social media to promote best practice.
- Train key staff to identify INNS, and report suspicious organisms appropriately.
- Place visual aids in mess rooms and offices near to quaysides to aid identification.

Recommendations for Future Work

- 1) Successful biosecurity planning requires a number of face-to-face engagements as well as remote support from people experienced in biosecurity planning, particularly with experience of port, marina and harbour management. Ongoing engagement and follow-up

with the sites with biosecurity plans would ensure any early issues with engagement or implementation are addressed.

- 2) It would be very helpful to gather together all those who have undertaken biosecurity planning, and those keen to embark on the process to get them to share experiences and lessons learned and to support one another in implementation.
- 3) Baseline biological data was essential for identifying high risk INNS already in the area and for horizon scanning. It was also a persuasive tool for stakeholders. Facilitating easier access to INNS survey information is very important. Collating records of INNS (including null records), data about water temperature, tidal dynamics and salinity, and making those data sets available to non-biologists and those writing biosecurity plans would be a useful step forward.
- 4) Reporting and sample gathering procedures and rapid response pathways are still not clear – this needs to be dealt with at a Government agency level and clearly communicated to stakeholders. A local incursion exercise for stakeholders and/or agency staff would help to provide clarity for biosecurity plans and work through some of these issues in a practical setting.
- 5) Wider landscape scale biosecurity plans covering and linking existing plans would be beneficial to assist with implementation. Actions taken on a single site can reduce risk but wider measures on an area wide basis have the potential to have a greater cumulative effect. Stakeholders can also feel overwhelmed by the scale of issues such as INNS and consistent actions across a wider area can enhance support for individuals.
- 6) Planning authorities require standardised advice to use in case work for new developments and planning applications. This needs to be developed with a measure of consistency across the UK. Linked to this is the need for guidance on safe disposal of antifoul wash-down residues.
- 7) A ‘Biosecurity Handbook’ pulling together processes and best practice from around the world would be useful and could help support biosecurity planning by providing a wider range of example feasible actions to consider.

Hull Fouling Ranking

This ranking can be used to assess the level of risk associated with a vessel. Those with ranking 0-2 are likely to present a low risk and to have been hauled out recently (this season) and been effectively antifouled.

Rank	Description	Visual estimate of biofouling cover
0	No visible fouling. Hull entirely clean, no biofilm ^a on visible submerged parts of the hull.	Nil
1	Slime fouling only. Submerged hull areas partially or entirely covered in biofilm, but absence of any plants or animals.	Nil
2	Light fouling. Hull covered in biofilm and 1–2 very small patches of one type of plant or animal.	1–5 % of visible submerged surfaces
3	Considerable fouling. Presence of biofilm, and fouling still patchy, but clearly visible and comprised of either one or more types of plant and/or animal.	6–15 % of visible submerged surfaces

4	Extensive fouling. Presence of biofilm and abundant fouling assemblages consisting of more than one type of plant or animal.	16–40 % of visible submerged surfaces
5	Very heavy fouling. Many different types of plant and/ or animal covering most of visible hull surfaces.	41–100 % of visible submerged surfaces

Annex 1

Stakeholder organisations represented at the Tamar Biosecurity Plan workshop on 1st March 2017

Organisation	
ABP (Associated British Ports)	Mashfords
Babcock	Mayflower Marina
Blagdon's Boat Yard	Moorings / PCC
Brittany Ferries	National Trust
Cattewater Harbour Commissioners	Natural England
Devon & Severn IFCA	Plymouth Yacht Haven marina
DQHM	Princess Yachts
Duchy of Cornwall	QHM Port Conservancy Officer
Environment Agency	Queen Anne's Battery marina