INTRODUCTION – ABOUT INVASIVE SPECIES

What are Non Native and Invasive Non Native Species?

Non Native Species are those species outside their normal or native range. Some of these have been moved around the world accidentally for example on boat hulls or in ballast water or via the transport of goods and materials. Some species have been intentionally released for food or sport, for example rabbits or for horticulture e.g. garden plants such rhododendron. Some species may have been introduced many times before they have become established in the UK.

When a species is established and then thrives aggressively becoming a problem to the local ecology and economy, it is termed ‘Invasive’.

Why should we worry about them?

Invasive Non Native Species can often grow at tremendous rates, out competing native species for food, space and light. They can smother native species and lead to a mono culture which can destroy entire ecosystems. They can also clog or damage important infrastructure such as roads and buildings on land or water intakes, fish cages, propellers and lock gates in the marine environment. INNS are thought to be one of the greatest threats to biodiversity and Defra have estimated that they cost the UK economy at least £2 billion per year.

What is Biosecurity?

Biosecurity is a way of managing and lowering the risk associated with non-native species. There are almost always sensible steps we can take to reduce the risk of moving species from one place to another and also to reduce the likelihood of the species becoming established and therefore invasive. The GB Invasive Non-Native Species Framework Strategy has a three tier approach:

- Prevention – most effective and least environmentally damaging
- Rapid Response – early detection and surveillance, potential eradication
- Control & Containment – where the INNS is widespread and eradication is not feasible, control of the population and mitigation against negative impacts

Given the high costs for the mitigation, control and eradication of INNS once they are established prevention is the obvious first choice and biosecurity planning is an excellent way to achieve this.

POLICY AND LEGISLATION

A detailed description of the various international, EU and UK policies and legislation relevant to
NNS is given in the Marine Biosecurity Guidelines for England and Wales\(^1\) and in the legislation section of the GB NNSS website\(^2\). The most significant of these are:

- The 2004 International Convention for the Control and Management of Ships’ Ballast Water and Sediment (enters into force in September 2017),
- The European Strategy for Invasive Alien Species,
- The European Water Framework Directive (WFD),
- The European Marine Strategy Framework Directive (MSFD),
- The EU Invasive Alien Species regulation (2015) and,

**BIOSECURITY PLANNING AND MARINE LEISURE SECTOR**

Although biosecurity planning is a voluntary measure at the moment it is recommended as best practice by Natural England, Natural Resources Wales, DAERA in N Ireland and Scottish Natural Heritage. Major port groups as well as harbour authorities and others marine users are developing biosecurity plans relevant to their operations and it is appropriate for the marine leisure sector to do the same. A biosecurity plan should not be cumbersome or onerous; it should focus on awareness raising, monitoring and practical actions which will protect the organisation and site from the threats associated with INNS.

**REPORTING AND FURTHER INFORMATION**

- Record known species - [www.brc.ac.uk/irecord/enter-non-native-records](http://www.brc.ac.uk/irecord/enter-non-native-records)
- Report high alert species – alertnonnative@ceh.ac.uk
- Check Clean Dry campaign: [www.nonnativespecies.org/checkcleandry/index.cfm](http://www.nonnativespecies.org/checkcleandry/index.cfm)
- The Green Blue: [www.thegreenblue.org.uk](http://www.thegreenblue.org.uk)


\(^2\) [www.nonnativespecies.org/home/index.cfm](http://www.nonnativespecies.org/home/index.cfm)
1. Introduction

Site Name: Haslar Marina

Brief Description of Site:
- Haslar is an all tide 650 berth marina.
- Started a comprehensive dredging programme.
- Many visitor berths are available, largely on L and M pontoons.
- Sealift is available on site for boat wash down up to 19m length.
- Yacht Brokerage and on site marine services.
- Haslar Yacht Club meet regularly at the lightship and many berth holders are members.
- Haslar is home to international racer Alex Thomson and has areas suitable for berthing superyachts up to 55m in length.

- **Site Location**: Haslar Marina, Haslar Road, Gosport, Hampshire, PO12 1NU

- **Plan period**: March 2017 – March 2020

- **Biosecurity Manager/Officer**: Ben Lippiett

From the DRAFT MMO marine plan for the south area

<table>
<thead>
<tr>
<th>Objective 11: Activities within and adjacent to the south marine plan areas must contribute to the achievement or maintenance of Good Environmental Status under the Marine Strategy Framework Directive (and Good Ecological Status under Water Framework Directive) with respect to descriptors on marine litter, non-indigenous species and underwater noise, particularly where current measures need to be reconsidered or enhanced and where new measures are under development.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S-NIS-1</strong></td>
</tr>
<tr>
<td>measures to avoid or minimise significant adverse impacts on the marine area that would arise through the introduction and transport of non-indigenous species, particularly when: 1) moving equipment, boats or livestock (for example fish and shellfish) from one water body to another 2) introducing structures suitable for settlement of non-indigenous species, or the spread of invasive non-indigenous species known to exist in the area.</td>
</tr>
</tbody>
</table>

2. Relevant environmental information about the site

**Environmental Information**

Licensed to maintenance dredge (ref L/2016/00274) runs until 2021

Several areas locally have been identified as being suitable sites to benefit from dredged material.

Various subsea cables run close to the site.
Just outside of Haslar is an area labelled as ‘Ballast Disposal’, (uncertain whether historical, i.e. aggregate, or modern, i.e. water, and thus a risk of invasive species).

The adjacent mudflats form Portsmouth Harbour Inshore Special Protection Area (UK9011051), SSSI and RAMSAR site (UK11055) forming part of The Solent and Dorset Coast pSPA. Wading wildfowl use the area and the saline lagoons to the North of the site are considered important habitat for these and other species. Adjacent to the Norris and Ryde and Bembridge pMCZs.

The Portsmouth area is a shellfish harvesting zone.

Adjacent ports include Gosport, Southsea, Portsmouth and Fareham. Several small naval vessels use the dockyard adjacent to Haslar Marina. BAE systems have an area of port adjacent to the site. Larger vessels use the Naval and commercial ports across the Harbour in Portsmouth.

There are public slipways at Alverstoke Creek, Hospital Lane, Wicor, Portchester, Lower Quay, Fareham, Port Solent, Portsmouth.

The site and approaches are designed as high density navigation routes under the draft marine plan (90th percentile).

Numerous passenger ferry services run past the site to both the Isle of Wight and the continent. It is seen as being a high use area for recreational vessels, this is supported by RYA AIS data.

Wave screen recently rebuilt with steel shutters.

<table>
<thead>
<tr>
<th>Salinity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully saline site.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tidal Influences</th>
</tr>
</thead>
<tbody>
<tr>
<td>The flood tide flows in a generally Northerly direction at entrance.</td>
</tr>
<tr>
<td>The ebb tide flows in a generally Southerly direction at entrance.</td>
</tr>
<tr>
<td>Strong tidal flows can be experienced outside the marina (up to 6kts at springs).</td>
</tr>
<tr>
<td>Tidal flow mixed around marina where Haslar Creek and wave-screen add factors.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Underwater structures/features</th>
</tr>
</thead>
<tbody>
<tr>
<td>The marina contains a mix of piles and chains for securing the pontoons and walkways.</td>
</tr>
<tr>
<td>The Lightship bar/restaurant “Trinities at Haslar” is a feature of the marina, and also acts as further protection from wave and tidal action.</td>
</tr>
<tr>
<td>Harbour walls are almost entirely manmade of stone block or concrete and steel, with the</td>
</tr>
</tbody>
</table>
breakwater being made of rock aggregate to the shore and steel shuttering at the wave-screen. A small amount of natural substrates are also found around the marina area, mostly the sea bed is mud.

3. Non-native species known to be present

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>Common name</th>
<th>2005/09</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sea squirts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Styela clava</td>
<td>Leathery sea squirt</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Asterocarpa humilis</td>
<td>Compass sea squirt</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Ciona robusta</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Corbula arenaria</td>
<td>Orange-tipped sea squirt</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Botryliolus violaceus</td>
<td>Orange cloak sea</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Botryliolus diegensis</td>
<td>San Diego sea squirt</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Botryliolus species 'X'</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didemnum vestitum</td>
<td>Carpet sea squirt</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Perophora japonica</td>
<td>Creeping sea squirt</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Apilidium cf. glabrum</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Sea mats (Bryozoa)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triticella nipponica</td>
<td>Tufy-buff bryozoan</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bugula neritina</td>
<td>Ruby bryozoan</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bugula simplix</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bugula stolonifera</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Watersporus subtila</td>
<td>Red ripple bryozoan</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Schizoporella japonica</td>
<td>Orange nape bryozoan</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Barnacles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austromus modestus</td>
<td>Darwin's barnacle</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Amphibalanus amplex</td>
<td>Striped barnacle</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Amphibalanus improvisus</td>
<td>Bay barnacle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hesperibalanus falax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other animals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caprella mutica</td>
<td>Japanese skeleton shrimp</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Ammonia higendorfi</td>
<td>Japanese sea spider</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Crypticula tormata</td>
<td>Slipper limpet</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Urosalpinx cinereus</td>
<td>American oyster drill</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Crassostrea gigas</td>
<td>Pacific oyster</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ficopomatus engiomaticus</td>
<td>Trumpet tube worm</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Hydroideae ezoiensis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemigrapsus spp.</td>
<td>Asian shorebrush-clawed crab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didemene lineata</td>
<td>Orange-striped anemone</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td><strong>Seaweeds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undaria pinnatifida</td>
<td>Wakame</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sargassum muticum</td>
<td>Wireweed</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Grateloupia turuturu</td>
<td>Devil's tongue weed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Codium fragile fragile</td>
<td>Green sea fingers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colpomenia peregrina</td>
<td>Oyster thief</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>Chrysogorgia xanthi</td>
<td>Golden membrane weed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonemisasia hamifera</td>
<td>Hook weed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caulacanthus okamurae</td>
<td>Pinn-pom weed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Report prepared by Christine A. Wood, Bishop Group, Marine Biological Association of the UK
Data collected by J.D.D. Bishop, C.A. Wood & A. Yunnie
For more information contact: cwo@mba.ac.uk. Tel: 01752 426330
High risk species known to be present and to keep an eye on for changes/spread.

Styela clava, Leathery sea squirt  
Asterocarpa humilis, Compass sea squirt  
Didemnum vexillum, Carpet sea squirt  
Watersipora subatra, Red ripple bryozoan  
Grateloupia turuturu, Devil's tongue weed  
Crepidula fornicata, Slipper limpet  
Undaria pinnatifida, Wakame  
Sargassum muticum, Wireweed

Horizon scanning – high risk species to look out for.

Amphibalanus Amphitrite, Striped barnacle  
Caprella mutica, Japanese skeleton shrimp  
Urosalpinx cinerea, American oyster drill  
Crassostrea gigas, Pacific oyster  
Hemigrapsus spp., Asian shore/brush-clawed crab  
Bonnemaisonia hamifera, Hook weed  
Eriocheir sinensis, Chinese Mitten Crab  
Schizoporella japonica, Orange ripple bryozoan  
Ficopomatus enigmaticus, Trumpet tube worm

4. High Risk vessels/types of vessel using the site
Include information about to any slow or stationary periods, events or other aspects that may increase biosecurity risk.

<table>
<thead>
<tr>
<th>Vessel/vessel type</th>
<th>Vessel name (for regular use/high risk vessels)</th>
<th>Photo reference Y/N (images to be inserted in appendix)</th>
<th>Risk factors e.g. Pathway (route), speed, biofouling control, inspection history, internal treatment history, See IMO Biofouling Guidance</th>
<th>Risk Assessment High/Med/Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightship</td>
<td>Mary Mouse 2</td>
<td></td>
<td>Permanently moored at harbour and marina entrance. Low attrition allows heavy fouling.</td>
<td>High</td>
</tr>
<tr>
<td>Static Yachts</td>
<td>Numerous-Impulse, Helix, Gentle Persuasion,</td>
<td></td>
<td>Yachts that rarely, if ever, move. Low attrition allows heavy fouling.</td>
<td>High</td>
</tr>
<tr>
<td>Activity</td>
<td>Timing and Site Lead</td>
<td>Scale of Works</td>
<td>Risk Factors and Actions</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td></td>
</tr>
<tr>
<td>Use of hull cleaning products and devices.</td>
<td>Often</td>
<td>Predominantly prior to racing, but most yachts use brushes, etc. at some point.</td>
<td>Encourage owners to use facilities such as Sealift, where there are assessments and measures in place.</td>
<td></td>
</tr>
<tr>
<td>Yacht brokerage and on site marine services</td>
<td>Ongoing/year-round</td>
<td>Constant boat movements</td>
<td>Make tenants aware of biosecurity plan. Ensure they confirm that boats arrive clean and are kept clean and appropriately antifouled whilst in the marina.</td>
<td></td>
</tr>
<tr>
<td>Sealift</td>
<td>Ongoing/year-round</td>
<td>On the water wash-down facility in constant use</td>
<td>Water is treated before being discharged back to the sea. Check with Sealift about how their water treatment effects biological contamination. If necessary, have the</td>
<td></td>
</tr>
<tr>
<td>Dredging operations</td>
<td>Begun in Sept 2016 and continues into 2017. Planned to continue onwards into future.</td>
<td>The central G-H and F-G channels and all associated berths will be dredged to 2.5-3m below chart datum</td>
<td>Discuss NNS with contractors and encourage awareness and reporting of any sightings of key species.</td>
<td></td>
</tr>
</tbody>
</table>

6. **Biosecurity Control Measures – Instructions for staff/contractors/site users**

<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marina staff/berthing manager</strong></td>
<td>Be aware of long distance or slow moving craft and take steps to assess risk. Make a note in the Biosecurity Log Book of any vessels of concern.</td>
<td>In the marina</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
| **Marina staff/berthing manager** | Write into any event plans that biosecurity needs to be taken into account prior to boats arriving. This is to/could include:  
- ensuring that participants in an event receive ‘Check/Clean/Dry’ message when they register. See [http://www.nonnativespecies.org/checkcleandry/](http://www.nonnativespecies.org/checkcleandry/)  
- That boats with considerable fouling will be removed and cleaned at the owners expense/will be refused launch.  
- Enquire as to origin and previous stops on passage. | | |
<p>| <strong>Marina staff/berthing manager</strong> | Check all relevant contractors are aware of the need for clean hulls on workboats. | | |
| <strong>Marina staff/berthing manager</strong> | Check all relevant tenants are aware of the need for clean hulls on vessels including those in the brokerage. | | |</p>
<table>
<thead>
<tr>
<th>Role</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marina staff/berthing manager</td>
<td>Include biosecurity information in communications with berth holders e.g. in the annual handbook.</td>
</tr>
<tr>
<td>Marina staff/berthing manager</td>
<td>Seek opportunities to work with The Green Blue to develop useful messages for berth holders.</td>
</tr>
<tr>
<td>Marina staff/berthing manager</td>
<td>Encourage staff to be aware of and report any heavily fouled vessels.</td>
</tr>
<tr>
<td>Marina staff/berthing manager</td>
<td>Encourage ethos of Check/Clean/Dry where possible – check pontoons, clean boats, dry kit.</td>
</tr>
<tr>
<td>Marina staff/berthing manager</td>
<td>Talk to NE contacts about biosecurity and seek a knowledgeable local volunteer to help with identification and reporting.</td>
</tr>
<tr>
<td>Marina staff/berthing manager</td>
<td>Talk to Jenkins Marine about looking out for NNS while they are dredging, make them aware of the reporting procedures. Prior to using the material for any replenishment work discuss biosecurity with the contractors or managers of the project – share the list of known NNS with them as appropriate to facilitate discussions.</td>
</tr>
<tr>
<td>Marina staff/berthing manager</td>
<td>Seek opportunity to discuss NNS with the manager of the Portsmouth Harbour Inshore Special Protection Area</td>
</tr>
<tr>
<td>Marina staff/berthing manager</td>
<td>The oyster reseeding programme for the Solent has the potential to introduce new NNS. Be aware of the timing of this programme and increase monitoring around this time. Take advice from Natural England about possibility of transfer of species and changes to the local ecosystem.</td>
</tr>
</tbody>
</table>
7. Site surveillance and reporting procedures

<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
<th>When</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yard Manager</td>
<td>Wash down area</td>
<td>Quarterly at Mean Low Water Springs</td>
<td>Photograph any unusual species and record in biosecurity log book.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Monitor over time and collect samples for analysis or send on photos for identification if concerned.</td>
</tr>
<tr>
<td>Berth Masters</td>
<td>Pontoons, particularly visitors pontoons L and M.</td>
<td>Quarterly</td>
<td>Photograph any unusual species and record in biosecurity log book.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Monitor over time and collect samples for analysis or send on photos for identification if concerned.</td>
</tr>
<tr>
<td>Berth Masters</td>
<td>Breakwater/wave screen</td>
<td>Annually at Mean Low Water Springs</td>
<td>Photograph any unusual species and record in biosecurity log book.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Monitor over time and collect samples for analysis or send on photos for identification if concerned.</td>
</tr>
<tr>
<td>Berth Masters</td>
<td>Lightship/Hygiene Facilities</td>
<td>Quarterly</td>
<td>Photograph any unusual species and record in biosecurity log book.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Monitor over time and collect samples for analysis or send on photos for identification if concerned.</td>
</tr>
<tr>
<td>Berth Masters</td>
<td>Area around Sealift</td>
<td>Quarterly</td>
<td>Photograph any unusual species and record in biosecurity log book.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Monitor over time and collect samples for analysis or send on photos for identification if concerned.</td>
</tr>
</tbody>
</table>

8. Contingency Plan

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Lead Person</th>
<th>Location of Equipment</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavily fouled boat departs after refusing wash down</td>
<td>Marina Manager</td>
<td>Biosecurity email group (see list of interested parties)</td>
<td>Alert local harbours of vessel name and planned route (if known). Make a note in the Biosecurity Logbook.</td>
</tr>
<tr>
<td>Heavily fouled vessel</td>
<td>Marina Manager</td>
<td>Contact list</td>
<td>Contact Natural England</td>
</tr>
</tbody>
</table>
arrives to berth or undertake work on site and ask advice about hull cleaning before proceeding.

| A known INNS is suddenly found to have significantly grown and covered a large area in a short space of time. | Marina Manager | Contact list | Take photographs and discuss with/alert Natural England. |

8. Interested parties and sources of further information

- Hampshire and Isle of Wight Wildlife Trust
- Natural England
- Ports of Gosport, Southsea, Portsmouth (QHM) and Fareham.
- Ministry of Defence / HMS Alliance
- BAE systems
- Gosport Borough Council - managers of public slipways at Alverstoke Creek, Hospital Lane, Wicor Marine, Portchester, Lower Quay, Fareham, Port Solent, Portsmouth.
- Haslar Yacht Club
- Phoenix Yacht Club
- Royal Naval Sailing Association
- Ocean Sports Tuition Ltd
- Hornet Services Sailing Club
- Joint Services Adventurous Sail Training Centre
- Royal Signals Yacht Club (ASA 06)
- Sea Cadets Offshore
- Hornet Marina
- The Gosport Model Yacht & Boat Club
- Portsmouth Sailing Club
- Gosport Marina (Premier Marinas)
- Endeavour Quay (Premier Marinas)
- Gunwharf Quays Marina
- Portsmouth QHM
- Royal Clarence Marina (Castle Marinas)
- Gosport Boatyard
- Quay Lane Boatyard Ltd
- Wicor Marine Yacht Haven
- Port Solent Marina
- Fareham Marina
- Hardway Sailing Club
- Portchester Sailing Club

9. Location of biosecurity logbook
Marina office

10. Signed
Figure 10: Monthly climatic average with the first standard deviation. The standard deviation has been derived from the difference in the monthly average from the long-term mean (1971 - 2005).