

RNLI Regional Marine Licence for Low Impact Maintenance Works
(Licence No.: CML 1820)

Marine Biosecurity Plan

What are Invasive Non-Native Species (INNS)?

Non-Native Species (NNS) are those that have been transported outside their natural range by human activity. This may be through deliberate or unintentional release by humans, transported by vessels (bio-fouling) or through natural processes such as ocean currents. When a NNS grows rapidly and starts to upset our environment, economy, health and the way we live they are often referred to as INNS. Whether an NNS becomes invasive or not is unpredictable and all pose some threat.

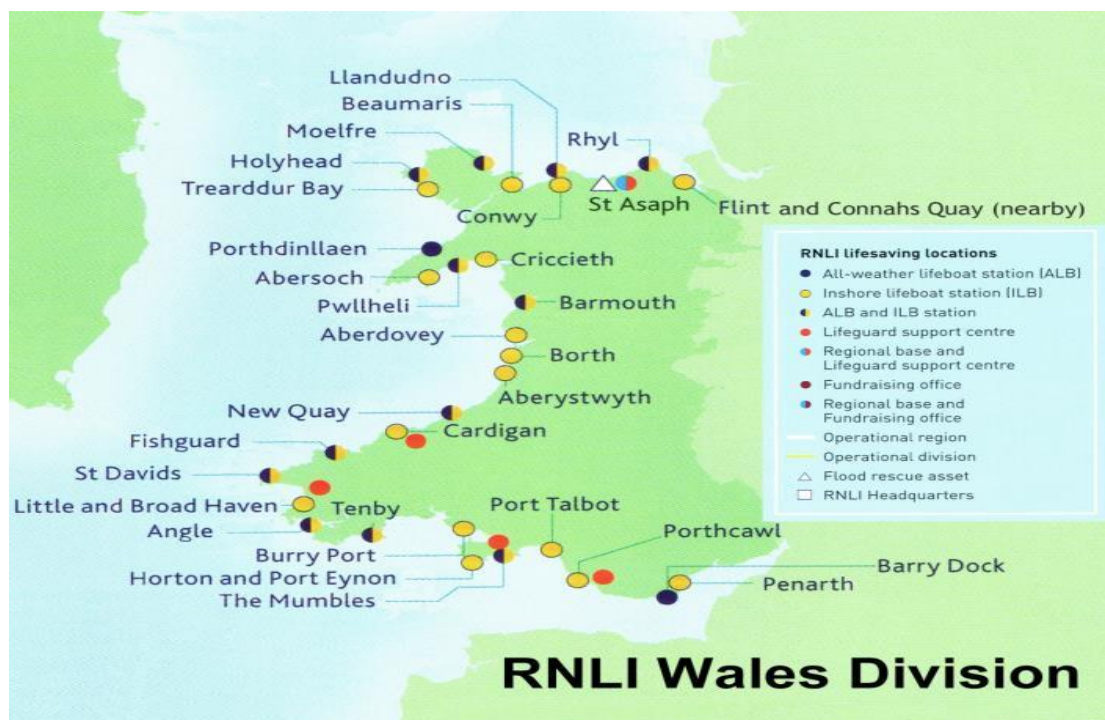
What is biosecurity?

Biosecurity means taking steps to ensure that good practices are in place to minimise the risk, spread and establishment of invasive non-native species. A good biosecurity route is essential, even where invasive non-native species are not thought to be present. The GB Non-Native Species Framework (Defra, 2008) 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.

1. Introduction

- 1.1. **Development Name:** Regional Licence for Low Impact Maintenance Activities
- 1.2. **Description of Operation:** Low impact maintenance activities as described in licence CML1820
- 1.3. **Site/Operation Location(s):** (see licence CML1820 for coordinates)



- 1.4. **Plan period:** 18 April 2019 – 17 April 2029

- 1.5. **Biosecurity Manager/Officer:** The overall responsibility for ensuring compliance with, and implementation of, the Biosecurity Plan is the RNLI's Divisional Coastal Infrastructure Manager (**the RNLI Site Manager**), whilst the individual responsibility for each project will be the relevant Coastal Infrastructure Engineer (**the RNLI Site Officer**).

2. Information related to the Environmental conditions affecting biosecurity

Salinity	Sea water. However, the following sites are situated on Rivers / Estuaries:		
	Site Ref.	Lifeboat Station	River
	15	Angle Lifeboat Station	Milford Haven Waterway
	16	Angle Moorings	Milford Haven Waterway
	23	Cardigan Lifeboat Station	Afon Teifi
	24	Ceredigion (Poppit Sands Lifeguard Area)	Afon Teifi
	29	Aberystwyth Lifeboat Station	Afon Rehidol
	31	Aberdovey Lifeboat Station	River Dyfi
	32	Barmouth Lifeboat Station	Afon Mawddach
	34	Pwllheli Lifeboat Station	Afon Erch
	36	Abersoch Lifeboat Station	Afon Soch
	45	Flint Lifeboat Station	River Dee
	46	Connah's Quay	River Dee
Marine features present	See licence CML1820		
Non-native species known to be present	No site-specific evidence of INNS present. Therefore, following the precautionary principle and assuming INNS might be present and acting as if they are present, we have therefore identified the INNS of concern in Wales. See appendix 1 and Welsh Government Guidance https://gov.wales/invasive-aquatic-species-priority-marine-species		

3. Vessel types using the site and/or involved in the operation

For each project under the regional marine licence the RNLI will appoint a Principal Contractor who will procure any vessels required to undertake the works activity. The vessels will generally fall into the following categories:

- a) Jack-up barges (working platform)
- b) Spud-leg barges (working platform)
- c) Multi-cat type workboat (general purpose boat for multiple activities including mooring works)

Other than mooring works, the use of large vessels is rare, and most vessels fall into the small to medium sized category (12m to 25m in length). Vessels will generally be locally sourced as the RNLI has a preference to use local contractors and vessels wherever possible, and this provides additional biosecurity mitigation.

For each project requiring a vessel, the Principal Contractor will be required to complete the risk assessment in Appendix 3 and include the relevant vessel details and the information in the associated guidance tables.

4. Site Activities which have a significant risk of introducing or spreading non-native species

The following activities are covered by licence CML1820

Activity Description	
1.	Maintenance to moorings (including replacement of fittings)
2.	Maintenance to pontoon berths (and associated pilings, link-spans, quay walls and approach structures)
3.	Minor beach re-profiling works
4.	Maintenance to lifeboat station boathouses (and associated slipways, quay walls, pilings etc.)
5.	Miscellaneous activities associated with safety of lifeboat launch and recovery and maintenance of some miscellaneous infrastructure
6.	Installation, removal and maintenance of beach lifeguard units.

As set out in the marine biosecurity plan guidance, the main vectors for INNS are vessels, barges, and equipment on them.

4.1. Details of how each of the activities have the potential to increase the risk of introduction or onward spread of marine non-native species?

The activities most likely to pose a risk in connection with marine non-native species are:

- Moorings maintenance (workboat used),
- Pontoon maintenance (when a workboat is used),
- Maintenance to lifeboat station boathouses etc. (if small workboats 'chasing the tide' are used).

5. Biosecurity Control Measures - Instructions for staff/contractors/site users

Who	What	Where	When
All contractors undertaking work on site	Follow 'clean check clear'. See Appendix 2.	Prior to introducing equipment to the marine environment	Pre-commencement and post-completion of works
Vessels	Prior to arrival on site ask vessel owner to complete the Risk Assessment proforma in Appendix 3 and confirm that they have complied with the guidance the Green Blue and that their vessel achieves a rank of between 0 and 2 on the table in part 2 of Appendix 3	Prior to vessel arriving at site	Prior to vessel arriving at site
All contractors	Provide them with copy of photos of INNS prior to commencement of	Prior to or at arrival on site	Pre-commencement of works

	works as part of site induction		
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6. Site surveillance and reporting procedure:

Who	What	When	Outcome
All contractors	Report sightings or potential sightings of any of the species shown on the photos in accordance with the Contingency Plan Implementation Framework in Appendix 4 of this document.	As soon as reasonably practicable after sighting	A review of the biosecurity plan will be carried out to consider whether further mitigation measures need to be put in place

7. Contingency Plan

See Appendix 4

Scenario	Action	Responsibility	Location of Equipment
Known INNS is suddenly found to have significantly grown and covered a large area in a short space of time.	Report sightings or potential sightings of any of the species shown on the photos in accordance with the Contingency Plan Implementation Framework in Appendix 4 of this document.	RNLI Site Manager (see 1.5 and Appendix 4)	Take photographs and discuss with/alert Natural Resources Wales.

8. Location of biosecurity logbook

To be held in one location at the office of the RNLI's Divisional Coastal Infrastructure Manager (refer 1.5)

9. Plan Review Date

To be reviewed by the RNLI's Divisional Coastal Infrastructure Manager **2022**.

Useful reference documents to support the review are as follows :

IMO Guidelines for the control and management of ships biofouling to minimize the transfer of invasive aquatic species

http://www.imo.org/blast/blastDataHelper.asp?data_id=30766

Shetland Biosecurity Plan

<https://www.nafc.uhi.ac.uk/research/msp/biosecurity-plan-for-the-shetland-islands/>

Marine Biosecurity Planning Guidance (SNH, Payne, Cook Macleod February 2014)

<http://www.snh.gov.uk/docs/A1294630.pdf>

GB non-native species secretariat

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=1322>

Non-native species records can be accessed via the local record centres

<http://www.lrcwales.org.uk/?AspxAutoDetectCookieSupport=1>

or the National Biodiversity Network

<http://www.nbn.org.uk/>

or the marine biological Association

<http://www.mba.ac.uk/>

NRW marine experts can also give advice on Non-native species records.

Appendix 1 - Welsh Government Guidance "Invasive aquatic species: priority marine species".

Those Already Here - Marine Non-Native Species to Live With
Present and breeding (high risk):-
Compass sea squirt (<i>Asterocarpa humilis</i>). The impact of this species may not be consistent in different locations (marinas vs natural shore). Could be a significant fouler of mussel and oyster culture gear, potentially competing for food with target species or smothering them, and rendering underwater gear and lines cumbersome.
American slipper limpet (<i>Crepidula fornicata</i>) is native to North America and arrived in England in the late 19 th Century and is now well established on the southern coasts of England and Wales. It can smother seabed species, alter seabed habitat structure dramatically and compete for food and space with other filter-feeding species including mussels and oysters. Smothering trophic competition and larval predation. Economic impact on shellfisheries. Change to sediment movement.
Carpet sea squirt (<i>Didemnum vexillum</i>) was first recorded in 2008 in Holyhead and at several locations in the UK. It forms pale orange, cream or off-white colonies of extensive thin sheets and can form long pendulous outgrowths. Colonies can rapidly overgrow other fauna and occupy a substantial proportion of available space. It can achieve very extensive coverage of the seabed, smothering species such as mussels and oysters. Potential reduction in species diversity. Environmental and social impacts will occur in harbours, marinas and sheltered bays.
Chinese mitten crab (<i>Eriocheir sinensis</i>) was first introduced to the Thames Estuary in 1935, and is now established in several sites throughout England and Wales. Breeding adults and juveniles occur in lower estuarine salinities - then, as they develop, migrate upstream into brackish, and freshwater systems. A voracious predator that will consume a range of native species, impacting on invertebrate and fish populations. Potential to outcompete the native white-clawed crayfish and common eels. May cause siltation of gravel runs used for spawning by salmon and trout. Adult crabs burrow into river banks causing bank collapse, increasing erosion and river turbidity. Economic impacts associated with repairing flood defence
Devil's tongue weed (<i>Grateloupia turuturu</i>) is a large red alga from NW Pacific with broad slippery blades and a very small holdfast. Present in the UK since 1969 and now spreading more aggressively. It grows on artificial and natural hard substrata, including rock pools, shells and stones where its large size and high reproductive output mean it can out-compete many native types of seaweed.
Red ribbon bryozoan (<i>Watersipora subatra</i>) is a rapid growing but fragile bryozoan with colonies up to several cm across of 1mm individuals arranged as a sheet - colonies orange-red, especially at outer edges. Attaches to all hard surfaces in shallow water, including natural rock shores, harbour and marina structures. A foulant nuisance that is tolerant to copper antifouls, allowing other less copper-tolerant fouling species to settle on top.
Not known to be breeding in Wales but likely to arrive: -
Asian rapa whelk (<i>Rapana venosa</i>) is likely to be introduced through shipping (ballast water) and Aquaculture (accidental contamination). There is a small and stable population on Brittany coast. In GB, no evidence of established populations but individual records of several Rapa Whelks reported from offshore GB waters in 2005. It is able to rapidly consume large quantities of prey and could become a serious competitor for the native common whelk.
American oyster (<i>Urosalpinx cinerea</i>). Transported with oysters and already established in England. Preys heavily on native oysters and may compete with native molluscs. A serious pest to the commercial oyster industry.
American lobster (<i>Homarus americanus</i>) is likely to be introduced by being imported live, escaping or being released from holding facilities. They are found sporadically in the English Channel since 1998. No established population but a live individual was found in North Wales in 2016. They could

outcompete native lobster for food and shelter, danger of hybridisation with native lobster, may compete with edible crab, significant disease risk for native lobster, potentially significant economic impact due to loss of native lobster.
Red algae (<i>Gracilaria vermiculophylla</i>). Main pathway of introduction is via oyster movements. It is present in Northern Ireland. Potential negative effect on native algae and seagrass.
American comb jelly (<i>Mnemiopsis leidyi</i>). Likely to be introduced via ballast water. No records from GB but recently recorded from the North Sea off Netherlands coast. Major predator of zooplankton, fish eggs and larvae.
Asian shore crab (<i>Hemigrapsus sanguineus</i>). Likely introduction via ballast water and natural dispersal. Individuals in South Wales (one record in Wales in 2014 - not confirmed as resident) and Kent. Found in Channel Islands since 2009. Aggressive and highly opportunistic omnivore may significantly affect native crab, fish and selfish populations by disrupting the food web. Known to feed on commercially important shellfish species.
Asian/Japanese oyster drill (<i>Ocenebra inornata</i>). Likely to be transported with shellfish. Predatory bivalves, pest on oyster beds.
Celtodoryx ciocalyptoides (cauliflower sponge), likely to be transported through movement of shellfish. Characterised by an extensive spatial brooding and it rates today among the dominant benthic megafauna in the shallow waters off the Gulf of Morbihan and Dutch inshore waters. It competes successfully with other microbenthic organisms, overgrowing some of the other sessile invertebrates such as other sponges and octocorals.
Brush clawed shore crab (<i>Hemigrapsus takanoi</i>), likely introduction through ballast water, unintentionally with transportation of oysters for aquaculture, or associated with hull fouling communities. Natural range expansion following initial introductions occurs when pelagic larvae are dispersed by currents. First recorded in the UK in 2014 in Kent and Essex. In 2016, the species was recorded as very abundant in Suffolk. In Holland, where densities are high, there has been a drastic reduction in the juvenile native common shore crab. In Dunkirk harbour this species has replaced the common shore crab. A similar impact could occur in GB.
Barnacle (<i>Amphibalanus Amphitrite</i>) likely introduction through ballast water and fouling. Fouls boat hulls, marina structures, equipment and aquaculture species resulting in both environmental and economic consequence. Level of impact for future introduction into the risk assessment area currently unclear.
Hesperibalanus fallax (barnacle) likely introduction through fishing equipment. It is apparent that species may pose a risk to a native species of sea-fan listed as vulnerable by the IUCN and section 7 list. Potential fouling organism.

Information on non-native species present in Wales is taken from Welsh Government Guidance "Invasive aquatic species: priority marine species". This guidance will be checked from time to time and the biodiversity plan updated if required.

<https://beta.gov.wales/invasive-aquatic-species-priority-marine-species>

For images of the above invasive non-native species please see the 'MSFD UK priority species ID guides' which can be found at www.nonnativespecies.org/alldocuments/. Attached below for ease of reference.

Appendix 2

HELP TO STOP THE SPREAD OF MARINE NON-NATIVE SPECIES

Simple Biosecurity Actions and Measures

'CHECK-CLEAN-DRY': Non-native species cannot survive long term desiccation.

- **Check** all vessels (dinghies, trailer-sailors, jet skis, kayaks) and equipment (trailers, dive gear etc.) which can be removed from the water
- **Clean** them thoroughly
- **Dry** completely before using again

See www.nonnativespecies.org/checkcleandry and @CheckCleanDryGB for further details.

When recovering a trailer, dinghy, PWC or RIB, drain water from every part of the boat and all equipment that can hold water.

For boats kept in the water permanently, hull fouling is the means of transfer. Clean yacht hulls well away from the water and collect all scrapings and dispose of to landfill.

If you must use a scrubbing grid, only scrub off the fouling and not the underlying paint. Collect all scrapings and dispose of to landfill.

Select a wash-down facility that collects residues and wash down water.

Make sure that the hull of your yacht has an effective anti-foul and renew on a regular basis. Keep propellers, bow thrusters and anodes clear of fouling.

Look out for vessels with high level hull biofouling, advise the boat owner of the biosecurity risk and inform the harbourmaster.

Follow best practice and encourage others to do the same. Go to the Green Blue www.thegreenblue.org.uk and to www.nonnativespecies.org for advice.

Keep vigilant, you don't need to be an expert to spot something new or unusual. Report any suspicions on invasive species sightings to the harbourmaster or water bailiffs, send records of sighting to iRecord - www.brc.ac.uk/irecord/enter-non-native-records or Sealife Survey - www.mba.ac.uk/recording

Download Non-Native Species identification cards from the Marine Biological Association http://www.mba.ac.uk/shore_thing/documents/Marine_cards_2015.pdf

Keeping a watchful eye - Site monitoring and surveillance

Everyone can play a part in looking out for marine non-native species; you don't need to be a marine biologist. Don't aim to identify every species, identify on the most unwanted. Become familiar with the NNS already present. Report any major changes in their abundance. Look out for anything new especially unusual growth patterns, areas which have obviously quickly been taken over or which just don't look 'normal'. **Take photos, a grid reference, estimate the quantity/area covered and report to the Harbourmaster.** You can also record your siting using the iRecord website or Sealife Survey. Think about combining monitoring for NNS as part of other routine checks and inspections which you may already be involved in.

What to do if there's an incident or breach of biosecurity

Some biosecurity threats may need a co-ordinated response from the relevant authorities. Anyone can help by raising the alarm in these cases and providing the authorities with information about the threat. The most likely incidents are the arrival of a vessel with heavy biofouling from a distant location. Here is some guidance on what to do if you spot a suspect vessel or species:

Biosecurity Threat	What to do
Unplanned or unexpected arrival of a vessel within the estuary which poses a high risk of introducing NNS or discovery of significant marine debris with extensive bio-fouling	Collect any information you can on the vessel (name, type, location in harbour, port of origin/recent port visits). Make a simple assessment of the level of biofouling. Alert relevant authorities and the Harbourmaster.
Discovery of a new NNS on the unwanted list or suspicious marine growth	Photograph specimen. Record location and approximate size of area affected. If feasible keep specimen in pot/bucket of seawater for expert to examine. Report to Harbourmaster.

Appendix 3 – Vessel Risk Assessment

The following assessment of residual risk should be carried out prior to deployment using the risk assessment guide in Part 1 and 2 below:

Table 1 – Vessel Details and Risk Factors (Record of Risk Assessment)

Vessel name	Photo reference (images to be inserted in appendix)	Vessel type	Details & Risk factors; Pathway, speed, biofouling control, Inspection history, Internal treatment history	Risk: High/Medium/Low
		e.g. Barge, Jack-up rig etc.	see IMO Biofouling Guidance	

Deployment & Port Visit History

The record of deployment and visit history should be recorded in support of the Risk Assessment:

Vessel name	Port of origin	Ports visited on route	Date and duration

Any information related to any slow or stationary periods or climatic conditions that may increase biosecurity risk should be recorded and used to inform the Risk Assessment.

Risk Assessment Guide

Part 1:

	Yes = HIGH	Yes = MED	Yes = LOW
1. Has the vessel/equipment just arrived from the local area?			
2. Has the vessel/equipment had an anti-fouling coating applied to submerged structures within the last 12 months (or time recommended by manufacturer)?			
3. Are all visible submerged surfaces free of bio-fouling (a green 'slime' is OK)?			
4. Do the visible submerged surfaces have more than a green 'slime' coating?			

5. Does the vessel/equipment have noticeable clumps of algae and/or animals clinging to the visible parts?			
6. Has the vessel/equipment just arrived from another country or region with similar environmental conditions (e.g. seawater temperature)?			
7. Has the vessel/equipment just arrived from a water body known to have INNS present?			
8. Does the vessel/equipment spend long periods of time stationary at sites in between anti-fouling treatments?			
9. Is the vessel 'slow moving', such as a construction barge or drilling rig?			

Part 2:

Rank	Description	Visual estimate of biofouling cover
0	No visible fouling. Hull entirely clean, no biofilm* 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

*Biofilm: Thin layer of bacteria, microalgae, detritus and other particulates.

Appendix 4 – Contingency Plan Implementation Framework

The purpose of the Contingency Plan is to provide an agreed methodology to deal with any potential sighting of INNS at the sites during the low impact maintenance works described in marine licence application CML1820.

Contingency Plan Implementation Framework:

The Framework is intended to provide a sequential series of defined reporting actions in the event that the risk of an INNS becomes apparent at site level during the works (mobilising, carrying out the works, and demobilisation)

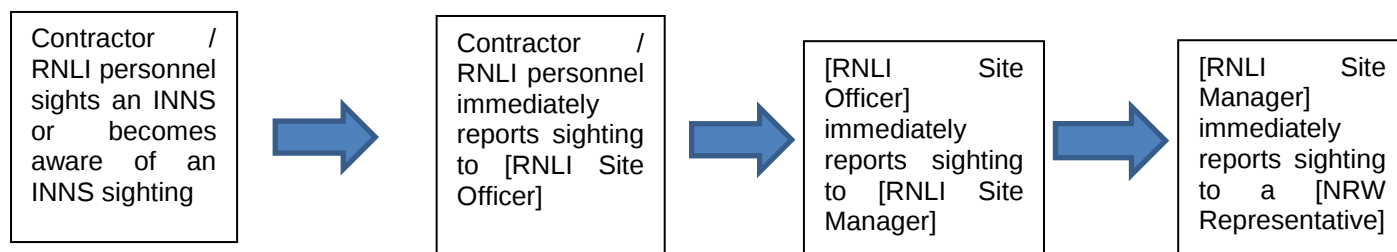
The RNLI Site Officer (refer 1.5) has overall responsibility for the implementation of the Contingency Plan Implementation Framework on site at the lifeboat station. The RNLI Site Officer will report as necessary to the RNLI Site Manager (refer 1.5).

The RNLI Site Officer will ensure that prior to undertaking licensed works, all contractors and RNLI personnel have read and understood the Biosecurity Plan of which this Contingency Plan Implementation Framework forms part.

The RNLI Site Officer will be responsible for ensuring that all contractors on site engaged in the licensed work to which the Contingency Plan Implementation Framework applies, have confirmed that they have understood the need to report immediately any sighting of an INNS as set out under 'Reporting an INNS Sighting' below.

Reporting an INNS Sighting:

1. Contractor / RNLI personnel sighting



2. Sighting by Member of Public

