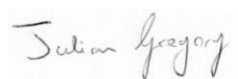
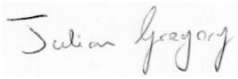


2022

Bynea Tidal Flap

Biosecurity Management Plan & Risk Assessment



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1. INTRODUCTION

1.1 OVERVIEW

- 1.1.1 This Biosecurity Management Plan & Risk Assessment identifies the biosecurity risks associated with the Bynea Tidal Flap Replacement works. It identifies potential biosecurity sources, pathways and receptors.
- 1.1.2 Key risks are:
- ◆ Release of Invasive non-native plant species (Terrestrial and Marine);
 - ◆ And release or propagation waterborne diseases and fungus;
- 1.1.3 This document supports the Band 1 Marine License Application - Method Statement. These documents have been submitted to Natural Resources Wales as part of the necessary Marine License Application to sanction works with the protected designated sites and estuary environment.

1.2 PROJECT BACKGROUND

- 1.2.1 Network Rail & Dyer & Butler engineers have identified that the tidal flap flow into the Loughor estuary on the eastern facing side of the rail corridor is no longer in a serviceable condition. Consequently, Network Rail have instructed the principal contractor (Dyer & Butler Ltd) to undertake the clearance and replacement of the tidal flap at the earliest opportunity.

1.3 SITE CONTEXT

- 1.3.1 The project is situated within the Carmarthen Bay and Estuaries - Special Area of Conservation (SAC) and Burry Inlet and Loughor Estuary SSSI

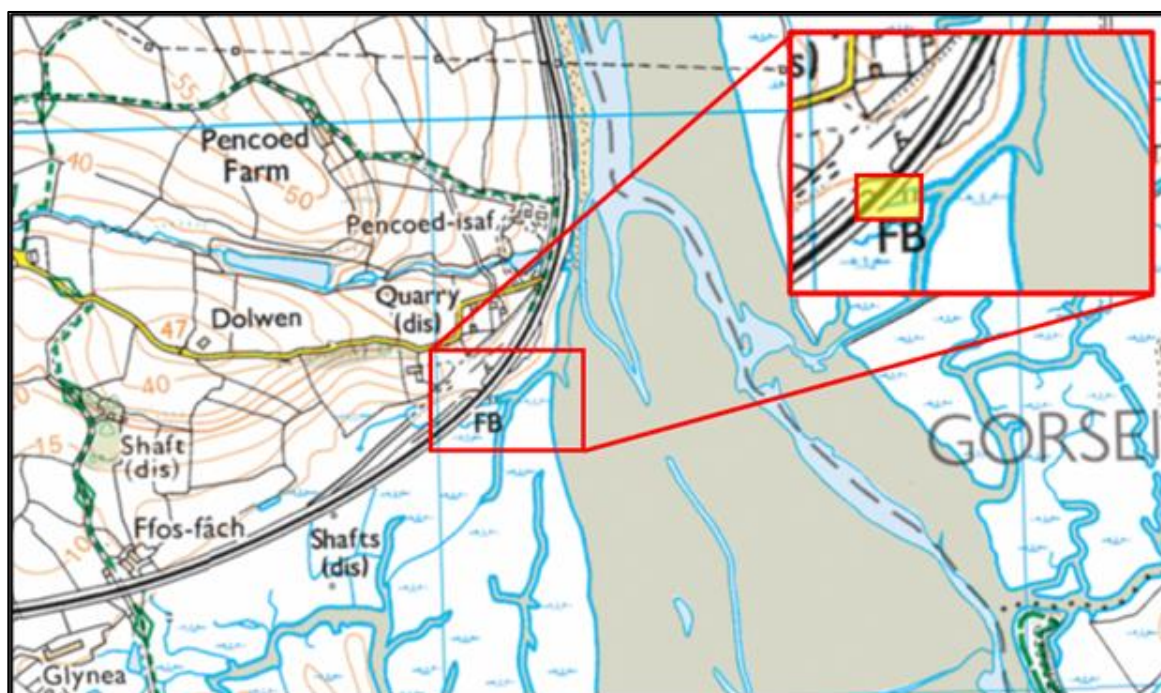


Figure 1: Project location within the wider area.



1.4 VESSELS TO BE USED DURING THE PROJECT

1.4.1 No vessels are currently envisaged to be used during this project. If however, vessels do become a requirement then this section will detail the vessel type, intended role, vessel operator/owner and port of origin.

1.4.2 A single 1-2 tonne 360 excavator is to be used, delivered by an RRV mounted on the rail track itself.

1.5 INVASIVE SPECIES – SUMMARY

1.5.1 Invasive, non-native, alien or exotic species (INNS), are species that have been released into an environment outside of their native bio-geographic range or habitat either by accident or intentionally.

1.5.2 Consequently, some species are more resilient or aggressive in the new environment to their native counterparts, out-competing and ultimately having a detrimental impact on native habitats as a whole.

1.5.3 Within the marine environment, INNS can be spread via a number of natural and anthropogenic pathways including ocean currents, aquatic debris, aquaculture, biofouling of marine vessels, exchange of ballast water and or even intentional introductions.

1.5.4 The general stages describing the encroachment of a new INNS is summarised below:

- ◆ **Introduction** – this is most frequently due to human activity e.g. shipping, aquaculture, poor biosecurity controls.
- ◆ **Establishment** – having arrived in the new habitat, a species will begin to compete with a niche.
- ◆ **Expansion** – once established, the species will expand and occupy as much space as possible, reducing available resources or directly attacking native species.
- ◆ **Persistence** – successful expansion can lead to long term establishment of that species in an area, with an increasing difficulty to control the spread. Additionally, the further the expansion the higher the likelihood of a species being introduced in other areas, continuing a vicious cycle.

1.6 PRIORITY MONITORING AND SURVEILLANCE LIST FOR WALES

1.6.1 NRW have produced a list of invasive species identified as High, Medium and Low Risk for Wales in the Marine environment. This is referenced to in Appendix A - Marine Invasive Non-native Species Priority Monitoring and Surveillance List for Wales.

1.6.2 The table below highlights the marine INNS currently known in be proximity to Loughor Tidal Flap and the wider estuary. Current known records originate slightly downstream of the structure in the wider estuary close to centre (this may be due to limited accurate grid reference recording at the time of identification). However, any new sightings should be recorded and forwarded to NRW.

Table 1: Known Invasive Marine Species.

	Loughor Estuary (Bynea Area)	
Marine Non-native species known to be present	<i>Mya arenaria</i> Linnaeus, 1758 - Sand Gaper (Established Status)	



1.7 CHARACTERISTICS OF KNOWN INNS

1.7.1 The table below are extracts from Appendix A - Marine Invasive Non-native Species Priority Monitoring and Surveillance List for Wales. This illustrates the level of risks posed by the species, likely pathway, impact and current management actions.

Table 2: Summary of Marine INNS characteristics.

Species and Group	Risk Assessment Score	Justification	Primary Introduction Pathway	Impact Summary	Management Action
Mya arenaria Linnaeus, 1758 - Sand Gaper	Low / unknown risk Risk assessment not available	NA	Recorded in Wales and UK	More data required	Record sightings

1.8 TERRESTRIAL INNS

1.8.1 There is currently 2 identified terrestrial INNS within proximity to the working footprint. Should any of these species be identified within the working area, then this information will be added to the figure on the follow page.

Table 3: Terrestrial INNS in proximity to the project.

INNS Name	Identification
Japanese Knotweed (Left image) Himalayan Balsam (Right image)	



1.8.2 The figure below illustrates the current known location of terrestrial INNS species within proximity to the works area.



Figure 2: Terrestrial INNS Locations.



2. BIOSECURITY RISK ASSESSMENT & MANAGEMENT

2.1 SUMMARY OF THE RISKS OF INNS SPREAD AS A RESULT FROM PROJECT ACTIVITIES AND PREVENTATIVE MANAGEMENT MEASURES

2.1.1 The following aspect register formulates the assessed risk by multiplying the likelihood of an event or encountering a species (L), by the severity implicated by that event/encounter (S). This quantified the assessed risk of the impact (R).

2.1.2 (L) & (S) are measured between Negligible (1), moderate (2) & high (3) to create the final value.

Activity	Pathway/Vector	Risk Assessment			Preventative Measures	Risk of spread following mitigation		
		L	S	R		L	S	R
Import/removal/disposal of materials	Transfer of INNS on materials	1	1	2	No importation of loose material to occur. The only new elements will be the new tidal flap, fittings and potentially handrails.	0	0	0
Introduction of manmade structures	Increased availability of artificial hard surfaces available for colonisation by INNS	1	1	2	No new manmade structure independent of the refurbishment works will be introduced to the estuary.	0	0	0
Disturbance of INNS present	Dispersal of INNS released into the water during construction activities	2	2	4	Mya arenaria Linnaeus, 1758 - Sand Gaper have been recorded downstream of structure but has not been visual confirmed to be present on the tidal flap. A pre-works check by an ecologist for the preens of marine and terrestrial INNS will be undertaken ahead of the works (1 week before). The main control measure will be to demarcate any species and leave in-situ. However, should any species be found within the working footprint, then a bespoke control plan for the species in question will be implemented.	1	1	2



Activity	Pathway/Vector	Risk Assessment			Preventative Measures	Risk of spread following mitigation		
		L	S	R		L	S	R
Use of plant machines and support vehicles during project.	Transfer of INNS from previous sites				All site personnel and site visitors will be informed if any INNS are known to be present on site and that they are jointly responsible for preventing their spread/impacts. They will be made aware of what these species look like so they can avoid it where possible and take appropriate actions. All site personnel and visitors will be inducted in good biosecurity practices. This will include adoption of the CHECK-CLEAN-DRY campaign (NNSS, 2015). The CHECK-CLEAN-DRY poster will be displayed in the site office as a reminder of good biosecurity practices: - http://www.nonnativespecies.org/checkcleandry/ The spread of waterborne diseases will be limited through the adoption of the CHECK-CLEAN-DRY campaign. This would entail the use of a suitable disinfectant e.g. Virkon® S Aquatic to decontaminate all machinery and PPE prior to it entering site for the first and upon leaving site, either at the end of the phase or if being sent to a different project/off hired. Following application of a suitable disinfectant, machinery and PPE will be allowed to fully dry for at least 72 hours before being used near another aquatic site.			
Personnel transferring between roles and different sites.	Transfer of terrestrial INNS	1	3	4	Personal and Company vehicles will likely visit other sites as part of the normal role of a given employee. A disinfection station will be set up at the entrance to the compounds to disinfect wheels and boots/wellies, using an aquatic disinfectant such as Virkon S. All equipment, tools, vehicles and personal protective equipment (PPE) used on site will be checked for seeds originating from any identified INNS before leaving the area. If seeds from identified invasive species are identified, the items will be cleaned and removed seeds will be destroyed.	1	1	2



3. MONITORING AND CORRECTIVE ACTION

3.1 INNS MONITORING

- 3.1.1 Monitoring for non-native species will continue during the refurbishment process.
- 3.1.2 Implementation of a monitoring programme for non-native species would include toolbox talks with site personnel on INNS identification. This information could then be shared with NRW to improve knowledge of INNS whereabouts in this specific portion of the Loughor Estuary.
- 3.1.3 The ongoing requirement for vigilance and reporting of instances of INNS identification.
- 3.1.4 Inspections and cleaning should be undertaken periodically as a means of routine surveillance but may be specifically appropriate before and after any planned period of machine inactivity.

3.2 CORRECTIVE MEASURES SHOULD NON-COMPLIANCE OCCUR

- 3.2.1 Corrective measures will be implemented in the event of a machine or individual found breaching biosecurity protocol, for example a plant machine being allowed to arrive at the structure but on arrival found to have significant biofouling or a vehicle coming into contact with terrestrial INNS and entering the vicinity of the estuary without prior biosecurity measures being implemented.
- 3.2.2 Corrective actions could include:
 - Inform relevant authorities where appropriate i.e. for non-compliant vessels or machines.
 - Remove offending machine back to local yard or nearest compound.
 - Undertake appropriate measures to clean the machine while minimising any further risks e.g. cleaning in situ within secure compound.
 - Investigate the cause of the incident and implement measures to avoid such events from occurring again.

4. CONCLUSION

- 4.1.1 The assessment has considered the individual project activities and specific known marine and terrestrial non-native species present within the works footprint and access routes.
- 4.1.2 Consequently, implementation of the management measures will ensure the risk of INNS spreading in this section of the Loughor Estuary as a result of the scour protection project will remain low.
- 4.1.3 This document will be reviewed in 6 months to ensure any new data is added to assessment to ensure it is always robust and reflects all available data.