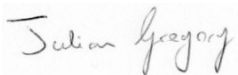


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Appendix A

North Gwendraeth Fawr Biosecurity Method Statement



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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 North Gwendraeth Fawr - Rail Bridge Abutments - Band 2 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 Habitat Regulations Assessment (HRA), Water Framework Directive (WFD). 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 The work site focuses on the areas of wall masonry and scour protection measures at and below MHWS on the seaward facing side of the Sea Defence Abutments. Working access to the north and south abutment sections is only possible during low tide.
- 1.2.2 These will be accessed on foot during those periods, no machines will be utilised within the estuarine environment. A vehicle utilising an existing agricultural track may be used to provide material and supporting functions to teams during works. The vehicle will not be permitted off the track or improved grassland, as to ensure the adjacent saltmarsh areas are not impacted upon.
- 1.2.3 Any access within Saltmarsh habitats will be on foot only (see figure 9) for an indicative location of broad saltmarsh habitat. Material may be stored within the rail boundary, outside of the MHWS areas, where space allows.



Figure 1: Proposed Marine License Footprint.



1.3 VESSELS OR VEHICLES TO BE USED DURING THE PROJECT

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

Table 1: Vehicle or Vessel to be used.

Machine or Vessel Description	Operator	Figure
NA	NA	NA

- 1.3.2 Temporary scaffolding will be utilised to access high portions of the abutment walls. These scaffolding will be dismantled at the end of each shift and removed from the estuary.

1.4 INVASIVE SPECIES – SUMMARY

- 1.4.1 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.
- 1.4.2 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.
- 1.4.3 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.
- 1.4.4 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.

1.5 PRIORITY MONITORING AND SURVEILLANCE LIST FOR WALES

- 1.5.1 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.
- 1.5.2 Currently there is no data originating from the sea wall within this area that highlighted marine INNS presence. There is significant data related to terrestrial INNS flower species and areas of Japanese Knotweed and Himalayan Balsam in the general records. To date, these species have not been identified near the working areas.
- 1.5.3 The table below (next page) will be used to highlight any marine INNS that may be identified at the sea wall during works.



Table 2: Known Invasive Marine Species.

Gwendraeth Rail Bridge		
Marine Non-native species known to be present	<i>Austrominius modestus</i> (Risk assessment not available) This species has been recorded near the viaduct structure itself. It has not been confirmed to be on the structure itself to date as the most recent records are from 1999.	
	<i>Mya arenaria</i> - Sand gaper (Risk assessment not available) This species has been recorded near the viaduct structure itself. It has not been confirmed to be on the structure itself to date as the most recent records are from 1999.	



1.6 CHARACTERISTICS OF KNOWN INNS

1.6.1 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 3: Summary of Marine INNS characteristics - Example.

Species and Group	Risk Assessment Score	Justification	Primary Introduction Pathway	Impact Summary	Management Action
Austrominius modestus Crustacean	Low / unknown risk Risk assessment not available	NA	Recorded in Wales	More data required	Record sightings
Mya arenaria - Sand gaper / Soft shelled clam	Low / unknown risk Risk assessment not available	NA	Recorded in Wales	More data required	Record sightings

1.7 TERRESTRIAL INNS

1.7.1 There is currently 1 identified terrestrial INNS within or adjacent to the working footprint. Should any other species be identified, then this information will be added to the table below.

Table 4: Terrestrial INNS in proximity to the project.

INNS Name	Identification
Japanese Knotweed	This is species has been recorded within 50-100m adjacent to the working area. Any stands of Japanese Knotweed will be demarcated and left in-situ to avoid any further spread of this species.
Himalayan Balsam	This is species has been recorded within 50-100m adjacent to the working area. Any stands of Himalayan Balsam will be demarcated and left in-situ to avoid any further spread of this species.



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 is to occur.	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, repair and upper embankment repair works will be introduced to the estuary.	0	0	0
Disturbance of INNS present	Dispersal of INNS released into the water during repair activities	2	2	4	Pre-works checks of any areas influenced by the tidal limits which could allow for INNS establishment will be undertaken. If found, these will be marked up and left in situ. Japanese knotweed and Himalayan Balsam have recorded within 50-100m of the structure. A pre-works check will reassess access routes and demarcate any INNS stands identified that could be in proximity to any working. If <i>Austrominius modestus</i> or <i>Mya arenaria</i> - Sand gaper are identified on areas of masonry requiring works. Then works will cease, with these locations first being marked up, to ensure no cross contamination of other working locations. During low tide	1	1	2



Activity	Pathway/Vector	Risk Assessment			Preventative Measures	Risk of spread following mitigation		
		L	S	R		L	S	R
					conditions, a membrane or plastic container will be placed below the section of wall where the INNS has been identified. These INNS's will be scraped carefully into the awaiting receptacles until the working face is clear of the species. This process will be repeated until all working locations have been assessed and cleared where necessary. The material will be wrapped or sealed (depending on container) and transport away from site, to the nearest compound where the material will be left to dry for 48hrs. Once this has been completed, the waste will be transferred to landfill as controlled waste. Any containers that can be reused, will be cleaned with fresh water and left to dry for 48hrs.			
Use of plant machines and support vehicles during project.	Transfer of INNS from previous sites				Any plant machine or vehicles will be checked ahead of any usage on site. Should the vehicle fail this inspection it will be returned to the nearest yard or yard of origin for further decontamination before being allowed to return to site. 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			



Activity	Pathway/Vector	Risk Assessment			Preventative Measures	Risk of spread following mitigation		
		L	S	R		L	S	R
					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 remedial 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 Gwendraeth Estuary.
- 3.1.3 The ongoing requirement for vigilance and reporting of instances of INNS identification.
- 3.1.4 Should terrestrial INNS be encountered near working areas or along access and egress points that cannot be segregated from these areas. Then a be-spoke INNS Management Plan will be required.
- 3.1.5 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 Gwendaeth 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.