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Dovey Junction Viaduct No.1

Biosecurity Management Plan & Risk Assessment



AMCO GIFFEN



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CONTENTS

1.	Introduction	3
1.1	Overview.....	3
1.2	Project Background	3
1.3	Site Context	3
1.4	Vessels to be used during the project	4
1.5	Invasive Species – Summary	4
1.6	Priority Monitoring and Surveillance List for Wales	4
1.7	Characteristics of Known INNS	5
1.8	Terrestrial INNS	5
2.	Biosecurity Risk Assessment & Management.....	6
2.1	Summary of the risks of INNS spread as a result from project activities and preventative management measures	6
3.	Monitoring and Corrective Action	8
3.1	INNS Monitoring.....	8
3.2	Corrective measures should non-compliance occur	8
4.	Conclusion	8

FIGURES

Figure 1: Project location within designated site boundaries.....	3
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TABLES

Table 1: Known Invasive Marine Species.	4
Table 2: Summary of Marine INNS characteristics.....	5
Table 3: Terrestrial INNS in proximity to the project.	5



1. INTRODUCTION

1.1 OVERVIEW

- 1.1.1 This Biosecurity Management Plan & Risk Assessment identifies the biosecurity risks associated with the Dovey Junction Viaduct No.1 refurbishment 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 Refurbishment of the timber and steel components making up the Dovey Junction Viaduct No.1 is required. Works will include this installation of new timber components, joints, Grit blasting and repair of metallic structure. Followed by painting.

1.3 SITE CONTEXT

- 1.3.1 Dovey Junction Viaduct No.1 is within the boundaries of the Llyn Peninsula Special Area of Conservation (SAC), and Dyfi Site of Special Scientific Interest (SSSI), Aber Dyfi Special Protection Area (SPA) and Cors Fochno and Dyfi RAMSAR.

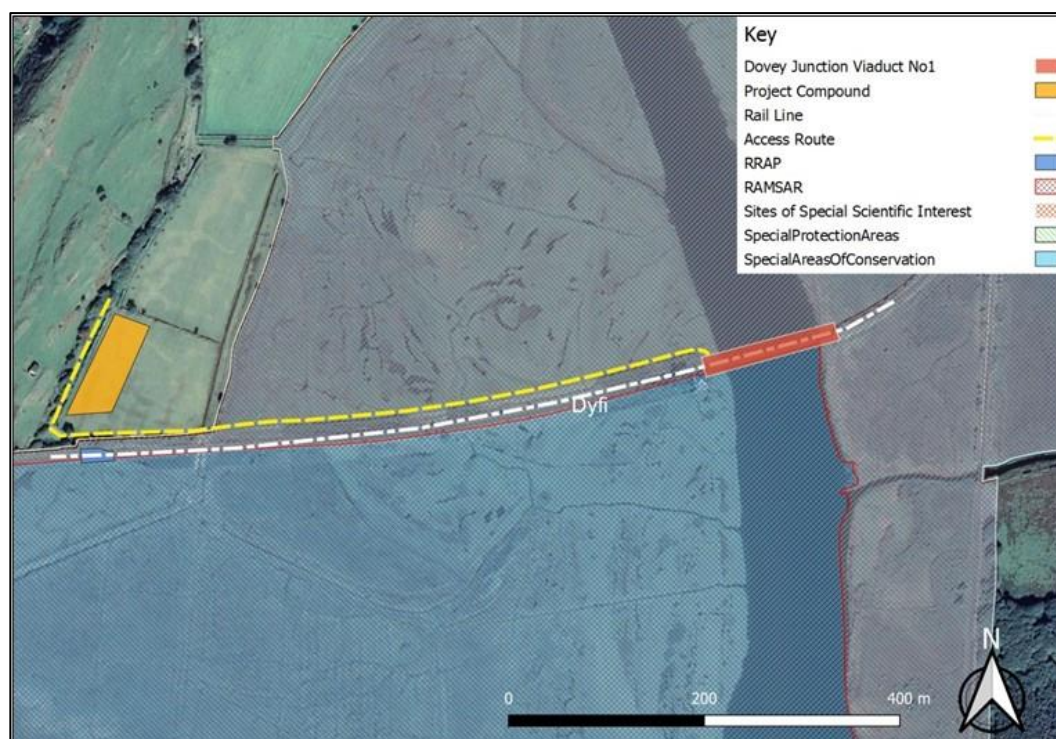


Figure 1: Project location within designated site boundaries.



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 8-9 tonne 360 excavator is to be used.

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 will highlight the marine INNS currently known in be proximity to Dovey Junction Viaduct No.1 and the wider estuary. Currently there appears to be no data available on marine invasive species present at the structure.

Table 1: Known Invasive Marine Species.

	Afon Dyfi – Dovey Junction Viaduct No.1	
Marine Non-native species known to be present		



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

1.8 TERRESTRIAL INNS

1.8.1 There is currently no identified terrestrial INNS within or adjacent to the working footprint. Should any species be identified, then this information will be added to the table below.

Table 3: Terrestrial INNS in proximity to the project.

INNS Name	Identification



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. Loose sediment will be mobilised during upright excavations however as this is not a solid substrate, it is considered unlikely invasive species could be mobilised in these areas.	1	1	1
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. Temporary man-made structure in the form of scaffolding will be present. The components will be inspected for contamination before being permitted to be used on site.	1	1	2
Disturbance of INNS present	Dispersal of INNS released into the water during construction activities	2	2	4	No known marine invasive species present. Toolbox talks and pre-works checks by Environmental Clerk of Works will be undertaken to ensure no INNS are present within the working footprint.	1	1	2
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.			



Activity	Pathway/Vector	Risk Assessment			Preventative Measures	Risk of spread following mitigation		
		L	S	R		L	S	R
					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 Dyfi 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 Dyfi 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.