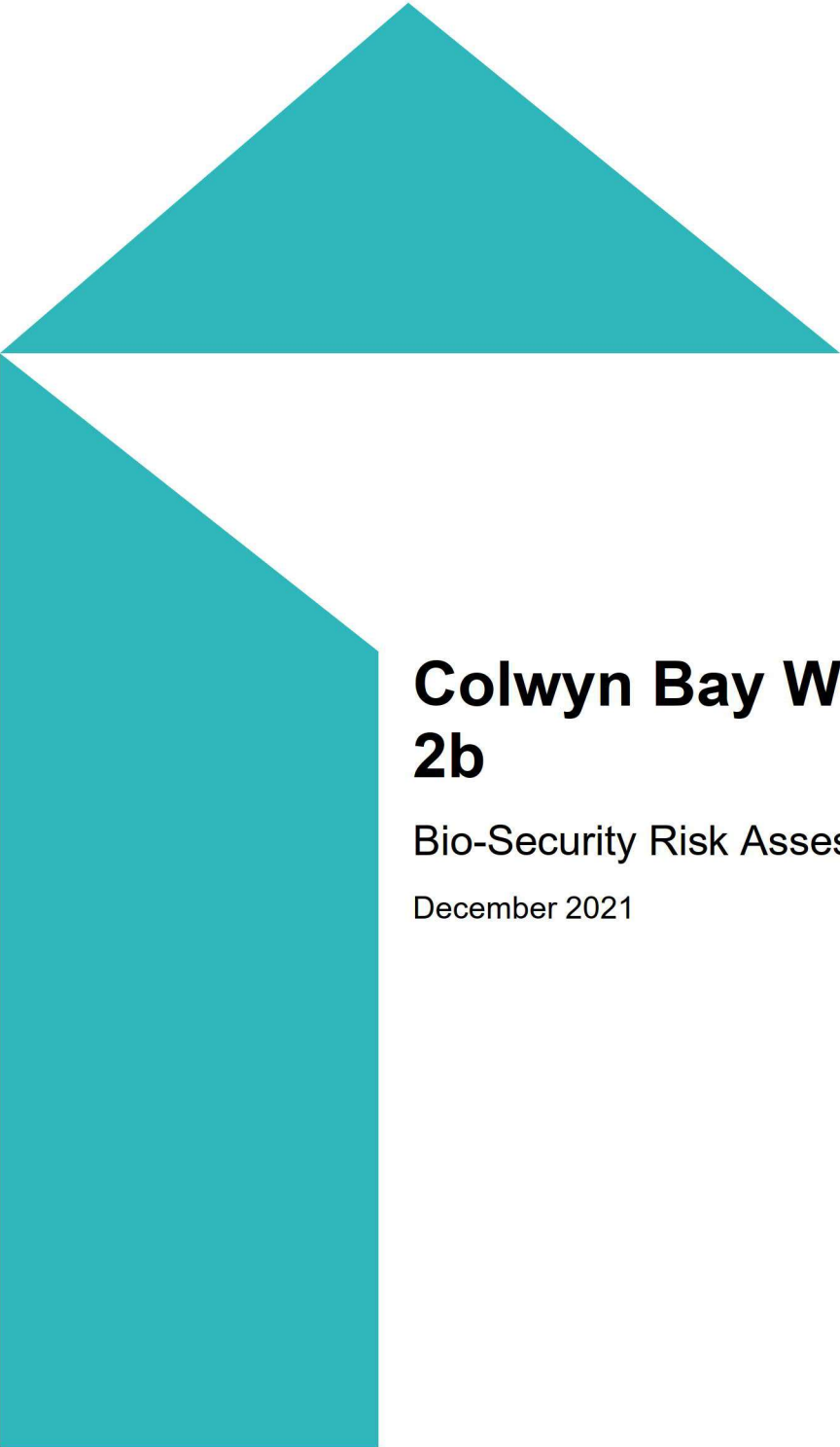


A.1 Biosecurity Risk Assessment/ Marine Bio Security Plan



Colwyn Bay Waterfront Phase 2b

Bio-Security Risk Assessment

December 2021

Mott MacDonald
Mott MacDonald House
5 Woodland Road West
Colwyn Bay LL29 7DH
United Kingdom

T +44 (0)1492 534601
mottmac.com

Environment Roads &
Facilities
Conwy County Borough
Council
Mochdre Council Offices

Colwyn Bay Waterfront Phase 2b

Bio-Security Risk Assessment

December 2021

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
P01	16/08/2021	A. Jones E. Haggett	D. Jones C. Williams	N. Haines	First issue
P02	23/12/2021	A.Jones	C. Williams	N. Haines	Update following Pre-Application consultation (PAC)

Document reference: 100374-MMD-00-XX-RP-N-0006

Information class: Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

1	Introduction	3
1.1	Overview	3
1.2	Terrestrial INNS	3
1.3	Marine INNS	3
1.3.1	High Risk INNS	4
1.3.2	Medium Risk INNS	4
2	Bio Security Risk Assessment	5
A.	Bio-security Risk Assessment Scoring Matrix	9

1 Introduction

1.1 Overview

This bio-security risk assessment (BSRA) has been produced in support of Phase 2b of the Colwyn Bay Waterfront Project, hereafter referred to as “the Scheme”. This BSRA outlines the potential hazards relating to the introduction and spread of invasive and non-native species (INNS) on site for the Scheme.

The Scheme will involve working on land, within the intertidal zone and will also include beach recharge using dredged materials from offshore, delivered via pipeline (with the dredger and tug moored offshore). The pipeline would be constructed at Pensarn Beach approximately 9.5km east of the main Scheme location. As a result, INNS relating to the terrestrial and marine environments have been considered both for the Scheme and the Pensarn pipeline construction area.

Prior to implementing this risk assessment on site, a site briefing and a toolbox talk should be provided to all site workers regarding the importance of bio-security. The required inspection, preventative and management techniques for personnel should be outlined and pest/containment identification should also be explained to ensure rapid and appropriate responses to any INNS present, (if INNS are found on site, the Ecological Clerk of Works (ECoW) where present or Supervisor should be notified, and guidance should be sought with statutory agencies). An ecological walkover survey should be undertaken on site approximately 6-8 weeks prior to the construction phase commencing (this should be undertaken by both a suitably qualified marine ecologist and a suitably qualified terrestrial ecologist). This will provide an opportunity to confirm any new occurrences of INNS on site and for these to be managed suitably prior to works starting.

Formal standardised reporting to Natural Resources Wales (NRW)¹ should be implemented on site throughout the duration of the works regarding the presence of INNS should any be discovered.

1.2 Terrestrial INNS

A Preliminary Ecological Appraisal Report (PEAR) was produced for the whole of Colwyn Bay (including the Scheme area and the Old Colwyn Coastal Defence and Active Travel Scheme)² in 2020 along with further supplementary assessments (both terrestrial and intertidal) undertaken from February to July 2021 for the Scheme and Pensarn Beach areas. During these surveys no invasive plant species were identified on site. However, it is noted that INNS can be introduced into the site through poor bio-security protocols and construction practice, so a precautionary approach for the management of terrestrial INNS on site is outlined in Section 2 in addition to the management of marine INNS.

1.3 Marine INNS

Intertidal surveys were undertaken on the 25th and 26th March 2021³ across the Scheme and Pensarn Beach areas. No INNS were identified during these visits. However, due to the beach recharge element of the Scheme, precautionary measures to manage potential INNS within the marine environment need to be outlined.

¹ NRW Reporting online: [Natural Resources Wales / Report an incident](#), accessed August 2021

² Mott MacDonald, 2020. Preliminary Ecological Appraisal Colwyn Bay (Doc ref: 410895-MMD-N-R-00-XX-1701)

³ Mott MacDonald Ltd, 2021, Colwyn Bay Waterfront Intertidal Survey Report (Doc ref: 100374-MMD-00-XX-RP-N-0002)

The Marine Strategy Framework Directive (MSFD) (2008) outlines a monitoring list for INNS. These INNS listed by the MSFD are further outlined within the “Priority Monitoring and Surveillance List of Marine INNS for Wales”⁴ and have been categorised into “High Risk” and “Medium Risk” INNS. A “Low Risk” category also exists, but there are no low risk INNS considered to require monitoring by the MSFD.

The “High” and “Medium” risk INNS listed by the MSFD have been reviewed and INNS from these categories that are believed to have the potential to interact with the site as a result of the beach recharge activities and general works on the foreshore have been considered for this BSRA. These species considered for this risk assessment are outlined below:

1.3.1 High Risk INNS

- Compass sea squirt (*Asterocarpa humilis*) – potential for introduction through fouling (via the use of anchors, marine vessels and marine plant within the marine environment);
- Carpet sea squirt (*Didemnum vexillum*) – potential for introduction through fouling (via the use of anchors, marine vessels and marine plant within the marine environment);
- Chinese mitten crab (*Eriocheir sinensis*) – potential for introduction through ballast water (from the use of marine vessels for beach recharge activities); and
- Red ribbon bryozoan (*Watersipora subatra*) – potential for introduction through fouling (via the use of anchors, marine vessels and marine plant within the marine environment).

1.3.2 Medium Risk INNS

- Bonnemaison's hook weed (*Bonnemaisonia hamifera*) – potential for introduction through fouling and ballast water (via the use of anchors, marine vessels (and associated ballast water) and marine plant within the marine environment);
- Japanese skeleton shrimp (*Caprella mutica*) – potential for introduction through fouling (via the use of anchors, marine vessels and marine plant within the marine environment);
- Orange striped anemone (*Diadumene lineata*) – potential for introduction through fouling (via the use of anchors, marine vessels and marine plant within the marine environment);
- Japanese wireweed (*Sargassum japonica*) – potential for introduction through fouling (via the use of anchors, marine vessels and marine plant within the marine environment);
- Leathery sea squirt (*Styela clava*) – potential for introduction through fouling (via the use of anchors, marine vessels and marine plant within the marine environment); and
- Wakame, Asian kelp (*Undaria pinnatifida*) – potential for introduction through fouling (via the use of anchors, marine vessels and marine plant within the marine environment).

⁴ Gov.Wales, December 2017. Marine Invasive Non-Native Species Priority Monitoring and Surveillance List for Wales [Online] Available at: <https://gov.wales/sites/default/files/publications/2018-02/invasive-aquatic-species-priority-marine-species.pdf>

Bio Security Risk Assessment

The risk assessment in Table 2.1 outlines the potential hazards of the Scheme associated with the introduction, transfer and spread of INNS. This risk assessment should be included within the Construction Environmental Management Plan (CEMP). As outlined above, this risk assessment is precautionary as it relies upon records of INNS within and near to the site. The BSRA scoring methodology is presented in Appendix A. Error! Reference source not found. Table 2.1: BSRA for the Scheme (risk is the transfer and introduction of INNS)

Hazard	Who or what might be affected?	Initial Assessment			Risk Control Measures	Residual Risk		
		Severity	Likelihood	Assessed Risk		Severity	Likelihood	Assessed Risk
Land Based Plant								
Use of land-based plant on the foreshore	Land-based plant will be used in the intertidal zone for the removal of sections of revetment, modification of outfalls, repairs and rock groyne improvements. This provides the opportunity for the spread of INNS across the intertidal area.	4	M	AR	Sections of the plant that would come into direct contact with the intertidal area (track/wheels) should be thoroughly cleaned before and after use to avoid the spread of any INNS (e.g. wheel washing facilities should be provided). This will also prevent potential spread from the Scheme's site area into other sites that may be used after the Scheme's construction is completed. If the risk is deemed to increase as a result of the discovery of INNS, the use of intertidal tracking matting should be considered. The number of vehicles used on site and the frequency at which they enter the intertidal area should be limited (vehicles should only enter the intertidal area on an ebb tide when there is a suitable dry area available for working).	2	L	A
Machinery origins/previous works	Machinery travelling or having previously worked on different sites has the potential to introduce non-native or non-localised species to site.	4	H	HA	A stringent system of vehicle maintenance and cleanliness should be implemented during construction works, including frequent vehicle washing between road and beach access. A CEMP should be adhered to and available on site and NRW Pollution	3	M	AR

					Prevention Guidelines should be followed.			
Promenade works	Material used for improvement works to the promenade may introduce alien species or spread existing species and/or pathogens on site.	3	H	AR	Where possible, existing material should be reclaimed, therefore lowering the risk of the introduction of invasive species. Any brought in material should be bespoke. If this is not possible, it should be ensured that brought in material hasn't been utilised in the marine environment previously. Again, if this is not possible, material brought in should be screened for INNS ahead of its use on site.	2	L	A
PPE – contractor staff, operatives and sub-contractors	PPE can collect contaminants including mud, seeds, pathogens etc. which can easily be transferred to and between sites.	4	VH	JA	All PPE especially footwear, Velcro closures, gloves, etc. should be thoroughly inspected and cleaned before arrival on site. Boot washing as well as equipment cleaning facilities (with a biocide such as Virkon) should be provided and carried out when entering and exiting site. Ideally equipment should then be allowed to dry for 48 hours before it is used elsewhere (a different site). Transfer between work areas on site should be avoided and minimised where possible. Measures for biosecurity in the field are also further outlined in NNSS guidance.	3	M	AR
Use of brought-in green hay at Cayley embankment	In order to ensure a local seed mix is successfully used for ecological improvements at Cayley embankment, green hay will be cut and brought in from a donor site.	3	H	AR	Green hay should be sourced locally and be from a meadow or old grassland that has been screened for invasive plant species prior to spreading at Cayley embankment through survey/an assessment of survey data at the donor site.	2	L	A
Marine Vessels/Plant								
Ballast Water	It is currently anticipated that a dredger and associated tug will be utilised for the beach recharge element. It may be necessary for these ships to take on board ballast waters from seas of different nations and to then dispose of these in UK	4	H	JA	All vessels and associated staff must ensure adherence to the Ballast Water Management Convention, 2017 for each vessel required for the works. This legislation outlines the requirements for each vessel to have a ballast water management plan, a ballast water record	3	L	A

	waters (and vice versa). This could result in the spread of INNS in the form of marine microbes, plants and animals (such as Carpet sea squirt (<i>Didemnum vexillum</i>) larvae).				book and an international ballast water management certificate. Vessels should have an on-board ballast water treatment system, if this is not possible then ballast water should be exchanged mid-ocean and not near the shoreline of the site.			
Hopper Water	It is currently anticipated that vessels may retain some water in the hopper, taken on board during the dredging operations and retained within the sand. However, the risk of INNS is considered lower given both the sand and water are taken onboard within the same marine biogeographic realm as the discharge location .	4	M	AR	Exchange of hopper water (not covered under the ballast water convention) should adhere to the same measures as ballast water if being discharged as ballast.	3	L	A
Anchorage	Anchors may be required for the mooring of vessels (dredgers and tugs) and if used, these pose the opportunity for bio-fouling and introduction of INNS to the site when lowered to the seabed.	3	L	A	Anchors for vessels used on site should be cleaned when the opportunity arises (e.g. at port or when refuelling) to minimise cross contamination between sites. It should be noted that the anchor (if used) will provide a relatively small opportunity for cross site contamination in comparison to other hazards listed in this risk assessment.	2	L	A
Bio-fouling of rock for groyne improvements	It is currently anticipated that existing revetment removed will be utilised for the groyne improvements. However, if rocks delivered on site have been reused from other projects or have spent prolonged periods of time in the marine environment, they may already be colonised with marine INNS which would then be introduced to the site.	4	M	AR	Any rock delivered to site should preferably be virgin material and not consist of rocks that has been sourced from other coastal defence schemes. Rocks should also be clean prior to introduction into the intertidal zone on site.	2	L	A
Bio-fouling (barge and tug used for beach recharge)	It is possible for the hulls of ships, barges and tugs used on site to be fouled by INNS such as algae, barnacles, and sea squirts. This presents an opportunity to introduce INNS to site and to other waters	4	M	AR	All vessels used on site should ensure they have a copy of their Bio-fouling Management Plan on board with clear information outlining efforts to reduce bio-fouling of the vessel, e.g. through anti-fouling treatments or use of biocides.	4	L	AR

Bio-fouling (materials removed)	Sections of the existing structures (such as rock revetment) will be required to be removed as part of the repair works. It is intended for the materials to be reused on the Scheme as far as it is possible. However, it is possible that if these sections of removed groyne are reused on other projects elsewhere, there could be a cross contamination of INNS from the Scheme area to other locations as the structures could be fouled.	3	M	AR	Once removed, (if not being utilised within the Scheme for the groyne improvements) the sections of rock revetment should be disposed of suitably on land and should not be disposed of or reused within the marine environment.	3	VL	A
Bio-fouling (previous origins of pipe)	Pipeline and associated equipment previously utilised on different sites have the potential to introduce non-native or non-localised species to site.	4	H	JA	The pipeline should be cleaned before first use and after final use for this project to prevent any cross-contamination. It should be noted that the pipeline will provide a relatively small opportunity for cross site contamination in comparison to other hazards listed in this risk assessment.	2	L	A
Dredged beach recharge materials	It is possible for INNS to be introduced/spread from the dredged material used for beach recharge.	4	M	AR	The dredged sand will be obtained only from a licenced dredging area and not from an area known to contain marine INNS. Additionally the dredged sand is coming from a subtidal site, meaning that any INNS contained are unlikely to survive transition into an intertidal area due to exposure at low tide.	2	L	A

A. Bio-security Risk Assessment Scoring Matrix

Table A.1: Bio-Security Risk Assessment Scoring Matrix

Biosecurity Severity or Consequence						
1 = Slight – no measurable consequence						
2 = Minor – slight impact, small scale, easily contained						
3 = Moderate – damage recoverable, moderate impact						
4 = Permanent – considerable damage, long term impacts no native flora and/or fauna						
5 = Catastrophic – major damage, threat to species						
Likelihood						
VL = Improbable – unlikely to occur						
L = Remote – unlikely but possible						
M = Occasional – possible at some time						
H = Probable – likely to occur several times						
VH = Frequent – likely to occur many times						
Acceptability of Assessed Risks						
N = Negligible						
A = Acceptable (manage risk)						
AR = Action required (if reasonably practical)						
UA = Unacceptable (action essential)						
Assessed Risk						
		Severity				
Likelihood		1	2	3	4	5
	VL	N	N	A	A	A
	L	N	A	A	AR	AR
	M	A	A	AR	AR	UA
	H	A	AR	AR	UA	UA
	VH	A	AR	UA	UA	UA

Source: Mott MacDonald Ltd, 2015

