Biosecurity Plan Template
Marine Maintenance Dredging

This Biosecurity Plan Template is intended to be used by marine maintenance dredging operators and contractors in order to minimise the risks posed by marine invasive non-native species (INNS), particularly related to minimising spread to new areas. It is difficult to directly manage INNS in the marine environment once they are present, therefore, prevention is key which is recognised in the GB Invasive Non-native Species Strategy (2015)

"Where direct management is not feasible, as is often the case in the marine environment, we will seek to reduce the spread of species by improved and targeted biosecurity".

There are a number of legislative drivers for this work including the Marine Strategy Framework directive (MSFD); EU IAS (Invasive Alien Species) Regulation and the Wildlife and Countryside Act (W&CA) 1981, Schedule 9. Section 14 of the W&CA states that it is an offence to '*release or allow to escape into the wild any animal which is not ordinarily resident in Great Britain or any species listed in Schedule 9 of the Act'.* Schedule 9 of the act lists a number of marine INNS particularly relevant to marine dredging activities, these include the Chinese mitten crab (*Eriocheir sinensis*), American Oyster Drill (*Urosalpinx cinerea*) and the American Slipper Limpet (*Crepidula fornicata*).

With respect to maintenance dredging activities in Wales and in order for the potential risks posed by these species to be managed in the most effective way it is important that NRW obtain as much information as possible. In certain circumstances where the activity is deemed not to contribute to the further geographic spread of those species on Schedule 9 (W&CA), NRW may issue an exemption in the form of a 'General Species Licence', however, this will be assessed as part of the licensing process.

1. Introduction

The project involves the maintenance dredge of 4,000 tonnes of predominantly sand material from the main entrance channel of Afon Artro, Llanbedr and placement on the on the nearby Bar Newydd on the seaward side of the estuary (i.e. intended beneficial use). Equipment to be used are excavators and tipper trucks.

1.1. Applicant Name: Richard Workman

1.2. Marine Licence reference number: Previous ref: no DBUML1353

1.3. Description of Operation: Shell Island Maintenance Dredge

1.4. Dredge and disposal Site Location(s): Coordinates provided in BNG (British National Grid)

Dredge site:
256664, 327382 (52º 49.491'N, 4º 7.724'W)

256401, 327334 (52º 49.461'N, 4º 7.957'W)
256377, 327418 (52º 49.506'N, 4º 7.980'W)
256448, 327474 (52º 49.537'N, 4º 7.919'W)
256552, 327477 (52º 49.541'N, 4º 7.826'W)
256642, 327435 (52º 49.519'N, 4º 7.745'W)

Disposal site:
256487, 327668 (52º 49.6424'N, 4º 7.8893'W)
256439, 327630 (52º 49.6212'N, 4º 7.9310'W)
256409, 327675 (52º 49.6450'N, 4º 7.9589'W)
256473, 327737 (52º 49.6794'N, 4º 7.9036'W)

1.5. Activity period: 01/02/2020-31/03/2023 (works to initially occur 01/02/2020 to 31/03/2020)

1.6. Biosecurity Manager/Officer: Mr. Dylan Williams – Williams Groundworks

1.7. Approval Date: To be completed by NRW Marine Licensing Team

1.8. Document version number: **1.0**

2. Information related to the Environmental conditions affecting biosecurity

	Source environment/location	Receiving environment/location
Marine Non-native species known to be present	The material to be removed is sand, therefore there is a lower risk of removing species that may be attached to hard substrates. Many of the high risk invasive non-native species (INNS) (gov.wales, 2017) found in Welsh waters live attached to the substrate rather than in sandy sediments. Benthic species that may live in sandy environments such as the slipper limpet (*Crepidula fornicata*) that are widespread in some UK locations have not been recorded in the source environment for this maintenance dredge (Bohn, 2014). Other species that are listed as present in Wales and are medium risk e.g. Japanese skeleton shrimp (*Caprella mutica*) or American Jack knife clam (*Ensis leei*), which do not live attached to hard substrates, have not been recorded in the dredge location either (Nbnatlas.org, 2017). **References:** Bohn, K. (2014). The distribution and potential northwards spread of the	Of the high risk INNS recorded in Welsh waters, there has only been Pacific oyster (*Magellana gigas*) recorded along the coast to the north of Llandanwg (Nbnatlas.org, 2017). Japanese wireweed (*Sargassum muticum*) is a medium risk INNS which is recorded around most coasts. There has been a record of occurrence along the coast, south of Bar Newydd (Nbnatlas.org, 2017).

	invasive slipper limpet *Crepidula fornicata* in Wales, UK. NRW Evidence Report No: 40, 43pp, Natural Resources Wales, Bangor Gov.wales (2017). Marine Invasive Non-native Species Priority Monitoring and Surveillance List for Wales. Available at: https://gov.wales/sites/default/files/publications/2018-02/invasive-aquatic-species-priority-marine-species.pdf [Accessed December 2019] Nbnatlas.org. (2017). Available at: https://records.nbnatlas.org/occurrences/search?q=qid:1576246297688 [Accessed December 2019]	

3. Vessels & equipment involved in the operation[1] *(please list all vessels, barges and equipment to be used as part of the maintenance dredging operation – insert additional rows as necessary)*

Vessel name	**Photo reference** (*Please insert images in the appendix)*	**Vessel type**	**Details, Risk factors & Justification** *e.g. Pathway, vessel speed, biofouling control, Inspection history, Internal treatment history etc..*	**Risk:** *(High/Medium/Low)*
*No vessels to be used. Only land-based equipment	n/a	Hymak excavator	The machines will be land based, not previously used for marine works. The machines will be fully washed before arrival and washed down regularly during the works on the slip way and before leaving. Material will be moved to a site within the local area which has connectivity on each tide (i.e. material will not be moved to/imported from a different sea area)	Low
As above	n/a	30-tonne tipper	As above	Low

[1] The licence holder should update and submit a revised plan as a result of any amendments to the list of vessels and/or equipment to be utilised as part of current licence.

3.1. Vessel & Disposal site Proposed activity log

In relation to maintenance dredging activities, marine invasive non-native species typically have three main vectors by which spread can potentially occur from one location to another. These are hull fouling, transfer in vessel ballast water and transfer within marine sediments. In order to better understand the potential risks associated to the current operation it is important to outline a brief history of vessel/equipment movements. This includes information such as vessel/equipment recent activity history (including any periods of inactivity) as well as information on ports visited and dredge/disposal site locations associated to the current licensable activity.

(Please note: a separate row should be inserted for changes in vessel and/or disposal site)

Vessel name	**Brief description of vessel activity over the last 12 months**	**Transit ports** *(list all ports to be visited on route to the current dredge activity if applicable)*	**Transit ports arrival and departures**		**Disposal site name & reference**
			Arrival date	**Departure date**	
N/A see above. Equipment has only been used for land-based works prior (and will be subsequent) to the proposed maintenance dredge activity.	NA	N/A	N/A	N/A	Material will be placed on nearby Bar Newydd which has regular tidal exchange of water and sediments with the dredge site.

4. Activities which have a significant risk of introducing or spreading marine invasive non-native species *(Please provide as much detail as possible of how each of the activities have the potential to increase the risk of introduction or onward spread of marine invasive non-native species – insert additional rows as necessary)*

Activity and brief description	**Details of how this could potentially increase the risk of introducing and/or spreading MINNS**	**Mitigation and Biosecurity measures to be implemented**
Dredging equipment being contaminated.	Increased risk from inadequate biosecurity measures related to the cleaning/flushing of equipment if previously used at another marine location, or before moving to another marine location.	Measures include utilising equipment that has only been used on land prior to the dredge activity. The machines will be fully washed before arrival and washed down regularly during the works on the slip way and before leaving.

Movement of material containing INNS between dredge and disposal site	Dredge material could introduce these organisms to the disposal site.	Movement is within the same local area. Material will be placed on nearby Bar Newydd which has regular tidal exchange of water and sediments with the dredge site. As the substrate is sand, any INNS present in the local environment would have been able to colonise either area already, e.g. through larval dispersal within the water column.

5. Mitigation & Biosecurity Control Measures – Instructions for staff/contractors/site users (*insert additional rows as necessary)*

Who	What	Where	When
Machinery operators	Ensure Hymack excavator and tipper trucks are regularly washed down.	When moving equipment between sites.	Before, during and after works.

6. Operational surveillance and reporting procedure

N/A land-based plant.

7. Contingency Plan *(i.e. when changes to the plan necessary and have been identified - insert additional rows as necessary)*

Action	Responsibility	Location of Equipment
Use of alternative equipment	Richard Workman and Dylan Williams from Williams Groundworks	If equipment has been used (or will subsequently be used) in the marine environment, the same biosecurity measures will occur as above; with the equipment being inspected for any residual marine material (e.g. shells or weed) and left to dry fully before use.

8. Location of biosecurity logbook

C/O Richard Workman.

9. Annual Review Date

N/A

Useful reference documents

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
http://www.nafc.uhi.ac.uk/departments/marine-science-and-technology/BiosecurityPlan.pdf

Marine Biosecurity Planning Guidance (England & Wales November 2015 – adapted from SNH, Payne, Cook Macleod February 2014)
https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=1401

GB non-natives species secretariat
Marine biosecurity - key guidance documents and websites

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

Additional supporting material to be added here e.g. vessel/equipment photographs

None.

WILLIAMS GROUNDWORKS
ALL ASPECTS OF GROUND WORK & EXCAVATOR WORK
10 BRYN DEILIOG, LLANBEDR, GWYNEDD, LL45 2LF
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SHELL ISLAND HARBOUR DREDGING PLANT

1X 20TON 360 EXCAVATOR

3X 30TON ARTICULATED DUMP TRUCKS

1X 13TON 360 EXCAVATOR

2X LIGHTING TOWERS

20T excavator to be used for bulk excavation in harbour.

3x 30T Dump Trucks to haul material from harbour to designated area.

13T excavator to be used for maintaining slip way to beach and on standby in case of brake down on beach.

Light tower towers to be located on each slip way for extra lighting on night shifts.

All machinery will have spill kits inside of cab in case of leaks or burst pipes on site.

All machinery will have bio degradable hydraulic oil.

The machines will be fully washed before arrival and washed down regularly during the works on the slip way and before leaving.

Dumper trucks NOT to tip in the sea as will sink and get stuck.

Reversing bleepers to be turned off for night shift to reduce noise.

Dumper truck drivers NOT to get out of cab whilst being loaded.

WILLIAMS GROUNDWORKS
ALL ASPECTS OF GROUND WORK & EXCAVATOR WORK
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Refuelling of plant only to be done in a designated area. Spill kits and drip trays will be in place by fuel bowser.

Lighting towers NOT to be erected in high winds.

Lighting towers MUST be lowered after end of shift.

Towing chains/cables and shackles to be kept on top of both slip ways in case of brake downs or machinery getting stuck.

All plant to be parked up at top of slip way after every shift and isolator keys to be removed.

All drivers to make daily checks on their plant. All defects to be reported to foreman/supervisor.

Drivers vehicles to be parked in designated area.

Mobile phones must NOT be used whilst operating any machinery.

Radios/walkie talkies will be in all machines in case of emergency.