Guidance for completing NRW's Marine Non-native Species Biosecurity Risk Assessment and Management Plan

This document provides guidance on how to fill out the 'Marine Biosecurity Risk Assessment and Management Plan' form. Please ensure you have this guidance and the form open before starting. If you have any queries that are not answered below, please contact the Marine Licencing Team marinelicensing@cyfoethnaturiolcymru.gov.uk, or your NRW Marine License Case Officer, referencing the application number if known.

Why do we require biosecurity information?

A Biosecurity Risk Assessment and Management Plan enables marine operators and contractors to understand and minimise the risks posed by activities which could introduce and spread of marine invasive non-native species (INNS). Management of marine INNS is extremely challenging once they are introduced to a new area. Effective biosecurity measures that minimise the risk of spread are therefore key to effective management, reflected in the GB Invasive Non-native Species Strategy (2015).

There are numerous pieces of legislation that cover the management of marine INNS. Section 14 of the Wildlife and Countryside Act (W&CA) 1981 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 activities, these include the Chinese mitten crab (*Eriocheir sinensis*), American Oyster Drill (*Urosalpinx cinerea*) and the American Slipper Limpet (*Crepidula fornicata*). A species of special concern, Chinese mitten crab (*Eriocheir sinensis*) is subject to strict restrictions under the Invasive Alien Species (Enforcement & Permitting) Order 2019 such that it is an offence to import, keep, breed, transport, release into the environment or allow to escape. Policy ENV_03 of the Welsh National Marine Plan also states that proposals should demonstrate how they avoid or minimise the risk of introducing and spreading INNS, and where appropriate, proposals should include biosecurity measures to reduce the risk of introducing and spreading INNS.

Good biosecurity risk management involves ensuring that all equipment, materials, machinery and Personal Protective Equipment (PPE) used as part of the licensed activities are in a clean condition prior to their arrival at and subsequent departure from the licensed area and free from contamination of INNS. For vessels, clean condition means all immersed surfaces (e.g. hull and niche areas) are clean from slime and other biofouling and have an appropriate anti-fouling regime in place that is effectively maintained. Equipment, machinery and PPE should be washed with freshwater and/or thoroughly airdried before moving between locations to ensure that no water or material is trapped that could transfer marine

invasive non-natives. Any materials transferred should be clean and free from contamination with INNS.

It is important that the operator obtain as much information related to the proposed activity as possible to fully understand the risk posed by the activity and identify suitable risk management measures. Completion of the Biosecurity Risk Assessment and Management Plan as fully and accurately as possible will allow you to identify the potential pathways for the introduction and spread of marine INNS and assess the risk associated with each one.

Sections of the form

Section A: Activity Overview

Applicant name

The name of the person who will apply for the marine licence.

Description of activity

Describe the activity you will be carrying out. Please keep the description brief but provide enough detail for NRW to understand the different elements of the licensed activity, including the location.

Estimated timings of activities

The estimated start and end date of the activity.

Section B: Risk Assessment

B.1 Assessing the pathway risks associated with vessels

This section of the form asks for information about the vessels being used in your licensed activity.

This section will assess the potential impacts of INNS from the vessel itself (e.g. fouling of the hull and hopper water). This will cover many activities including marine construction using a vessel, dredging, grab sampling, drop down video, ground investigations or aquaculture activities which require a vessel.

B.1.1. It is important to understand where the vessels have been prior to arriving at the location of the licensed activity area because INNS may be present on their hulls, in bilge water, and in other niche areas of the vessel.

In some situations, it may be one of a fleet of vessels that could be used in the activity. If this is the case, please fill out the form considering all possible vessels that could be used.

Where exact ports/locations are unknown, provide a description of the area – e.g. The Wadden Sea. If the pool of potential vessels is too large, or you don't currently know where the vessels will visit prior to being used in the activity, leave the table blank and put unknown. In this scenario, as risks cannot be ruled out, the risk level would be considered high in order to take a precautionary approach. Stringent conditions and / or a Biosecurity Risk Assessment Protocol are likely to be required prior to work commencing.

If you are not sure whether INNS are present in the ports you list, there are online resources that can help, especially in the UK, including the National Biodiversity Network (NBN) Atlas and NBN Atlas Wales INNS Portal. For other records you may find information on the Global Biodiversity Information Facility (GBIF) and from a search of relevant literature online.

Please have special regard for the high and medium priority species listed on the Marine Invasive Non-native Species Priority Monitoring and Surveillance list for Wales and other relevant high risk invasive species. The species *Agarophyton vermiculophylla* and *Ostrea chilensis* should also be considered along with any other potentially high risk INNS.

This table also asks whether the vessels have undergone antifouling treatment.

Vessel Antifouling

Vessels with appropriate antifouling regimes will present a lower risk of transferring marine INNS because there is a lower risk of organisms being attached to the hull of the vessel.

Biocidal coatings – a chemical substance applied to the vessel which is intended to destroy, deter, render harmless, or exert a controlling effect on any harmful organism as a means of controlling marine growth. These biocides are toxic and usually contain copper.

Biocide-free coatings – a substance applied to the vessel which does not contain a toxic biocide, but instead, reduce the ease at which biofouling species can attach to a vessel and increase the ease they are removed.

The following text provides information on risk levels associated with both biofouling and antifouling, to help you complete the table on level of risk.

Risk Level (Biofouling)

High: the pathway has a high probability of transporting live INNS organisms among locations. For example, the vessel is coming from a site with records of highly invasive non-native species that are not present at the licensed activity location.

Medium: the pathway has a medium probability of transporting live invasive non-native organisms among locations. For example, the vessel used in the activity is coming from a site that is near a known population of INNS that are not present at the licensed activity location.

Low: the pathway has a low probability of the transport of live invasive non-native organisms among locations. For example, the vessel used in the activity will come from a location with no known INNS present or in nearby locations.

Where it is not possible to provide information at this time around the vessel(s) to be used because of operational planning issues, the risk should be set to high.

Risk Level (antifouling regime)

High: the pathway has a high probability of transporting INNS on vessels. For example, the vessel has not been treated with antifouling within the last 12 months (24 months for biocide-free coatings), and/ or, has been stored in water and visited many ports over the last 12 months which have INNS present and is a slow moving vessel.

Medium: the pathway has a medium probability of transporting INNS on vessels. For example, the vessel has not been treated with antifouling within the last 12 months (24 months for biocide-free coatings), but has been stored out of water and visited a small number of ports over the last 12 months, one of which had number of INNS present.

Low: the pathway has a low probability of transporting INNS on vessels. For example, the vessel has been treated with antifouling within the last 12 months (24 months for biocide-free coatings), or, has been stored out of water and visited few / no ports over the last 12 months which do not contain INNS.

Justification of Risk:

This should provide an explanation of the risk identified, from both biofouling and antifouling treatment, and give an overall risk score. For example, if the vessel used in the licensed activity is coming from a site with known INNS, some of which are known to be easily transferable on vessel hulls, the risk is high. If the vessel to be used in the licensed activity has also not had antifouling treatment or an alternative in the last 12 months, it will pose a much greater risk than one with appropriate recent antifouling. Some examples of risk levels for different activities are given in Table 2.

B.1.2. Alternative antifouling regime

This section asks for further information on vessels which are not deemed as having adequate antifouling treatment. If the vessel has not had the specified antifouling treatment, it may have had another type of treatment or management regime (e.g. storage on land) which can be described in this section.

The risk level may be reduced for these vessels if another suitable management regime is in place and this should be captured in B.1.2.

B.2. Assessing pathway risks associated with the transfer of non-biological materials and water

Transfer of non-biological materials, sediments and water are relevant to activities such as dredging, beach replenishment and construction and some elements of aquaculture activities (the construction of the facility).

Pathway

The method or route of transfer of material or water between locations forms a potential pathway for INNS introduction and spread. Pathways can include hopper water, dredge material or construction material. Some example pathways are listed in Table 1.

Location

Please provide locations in decimal degrees in WGS84.

Environmental Conditions

Please outline any environmental conditions that may decrease or increase the risk of INNS being introduced and established. For example, transferring material from a fully saline location to an estuarine location with extensive freshwater input may lower the survival chances of transferred organisms.

INNS present

If you are not sure whether INNS are present in the locations you list, there are online resources that can help, especially in the UK, including the National Biodiversity Network (NBN) Atlas and NBN Atlas Wales INNS Portal. For other records you may find information on the Global Biodiversity Information Facility (GBIF) or from a search of relevant literature online.

Please have special regard for the high and medium priority species listed on the Marine Invasive Non-native Species Priority Monitoring and Surveillance list for Wales and other relevant high risk invasive species. The species *Agarophyton vermiculophylla* and *Ostrea chilensis* should also be considered along with any other potentially high risk INNS.

Risk Level

The form asks you to assess risk level for the pathway based on the information you provide.

High: the pathway has a high probability of transporting live INNS organisms between locations. For example, sediment for a beach replenishment project is collected from an accreting site a few miles along the coast with a known population of invasive non-native species and deposited within 48 hours on the site of the licensed activity.

Medium: the pathway has a medium probability of transporting live invasive non-native organisms between locations. For example, sediment used is from an area of coast with an invasive non-native species, but the collection is undertaken at a site within the area without INNS present according to a recent survey.

Low: the pathway has a low probability of the transport of live invasive non-native organisms between locations. For example, sediment used in the beach replenishment comes from a site offshore with very different environmental conditions to the site of the licensed activity.

Justification of Risk:

This should provide an explanation of the risk identified.

B.3. Assessing pathway risks associated with biological material

Pathway risks associated with biological material could involve seaweed cultivation or rope grown shellfish. The vessel elements of these activities would be covered in Section B.1, any construction materials in Section B.2 and any equipment not integral to the boat (e.g. harvesting equipment) in Section B.4.

Section **B.3.1** asks what species will be transferred to the marine environment and is the focus of the marine licence activity. This could be the species of seaweed or shellfish which have been seeded onto a rope and placed in the marine environment or are being moved from one area to another. It should also include the potential for INNS to be contained within the biological material being transferred.

B.3.2.

Pathway

Biological material that is being transferred between locations forms a potential pathway for INNS introduction and spread, for example, bringing in ropes seeded with young seaweed into the marine environment could directly or indirectly transfer INNS.

Location

Please provide locations in decimal degrees in WGS84, or the location and name of the culture facility.

Environmental Conditions

Please outline any environmental conditions that may decrease or increase the risk of INNS being introduced and established. For example, transferring material from a fully saline location to an estuarine location with extensive freshwater input may lower the chance that any organisms that are transferred with the material survive.

INNS present

If you are not sure whether INNS are present in the locations you list, there are online resources that can help, especially in the UK, including the National Biodiversity Network (NBN) Atlas and NBN Atlas Wales INNS Portal. For other records you may find information on the Global Biodiversity Information Facility (GBIF) or from a search of relevant literature online.

Please have special regard for the high and medium priority species listed on the Marine Invasive Non-native Species Priority Monitoring and Surveillance list for Wales and other

relevant high risk invasive species. The species *Agarophyton vermiculophylla* and *Ostrea chilensis* should also be considered along with any other potentially high risk INNS.

Risk Level

The form asks you to assess risk level for the pathway based on the information you provide.

High: the pathway has a high probability of transporting live INNS organisms between locations. For example, transferring ropes seeded with seaweed into the sea from a facility which grows non-native species in tanks connected to the seeded ropes and is transported in an unwashed container.

Medium: the pathway has a medium probability of transporting live invasive non-native organisms between locations. For example, transferring ropes seeded with seaweed into the sea from a facility which grows non-native species in tanks separate from the seeded ropes and is transported using a washed and air dried container.

Low: the pathway has a low probability of transporting of live invasive non-native organisms between locations. For example, transferring ropes seeded with seaweed into the sea from a facility which grows only one species of native seaweed, transferred by a washed and air dried container.

B.3.3 asks for further information about the biosecurity measures in place at the culture facility. Please outline what protocols exist and how they are followed to manage the risk of spread of INNS species.

B.3.4 refers specifically to the movement of shellfish and asks whether the relevant CEFAS documentation has been completed. If this does not apply to your activity, then put a cross in the ‘Not Relevant’ box.

B.4. Assessing pathway risks associated with immersible equipment

Immersible equipment includes items that are not an integral part of the vessel or construction infrastructure, for example water injection dredge nozzle, suction dredge and screens, drill string, grab sampling equipment, drop down video or harvesting equipment.

Each movement of immersible equipment that has not been thoroughly washed and dried between deployments presents a potential pathway for the transfer of INNS. The following questions require you to assess the risk of the immersible equipment the licensed activity will use.

B.4.1. asks you to list all immersible equipment. This includes any equipment which is not attached to the vessel and will be used during the licensed activity.

B.4.2. asks you whether the immersible equipment will undergo cleaning:

a. prior to departing the port of origin (where the equipment came from immediately before arriving at the licensed area)

b. prior to leaving the licensed activity area to return to a port

B.4.3 asks whether immersible equipment will be cleaned between areas of the same activity which is under licence. This may include different habitats and have different INNS risks within the same licensed area.

If all immersible equipment will not be washed and dried between either the original port and licensed area or between locations within the licensed area, you will be asked to provide more information about the equipment in Section **B.4.4.**

B.4.4. captures where the equipment has been used prior to it moving to the site where the licensed activity is being undertaken to assess the level of risk.

Location

Please provide GPS locations (decimal degrees in WGS84) where the immersible equipment has been used since it was last washed and left to completely dry.

Risk Level

The form asks you to assess the risk level for immersible equipment based on the information you provide.

If you are not sure whether INNS are present in the locations you list to help you assess risk, there are online resources that can help, especially in the UK, including the National Biodiversity Network (NBN) Atlas and NBN Atlas Wales INNS Portal. For other records you

may find information on the Global Biodiversity Information Facility (GBIF) or from a search of relevant literature online.

Please have special regard for the high and medium priority species listed on the Marine Invasive Non-native Species Priority Monitoring and Surveillance list for Wales and other relevant high risk invasive species. The species *Agarophyton vermiculophylla* and *Ostrea chilensis* should also be considered along with any other potentially high risk INNS.

High: the pathway has a high probability of transporting live INNS organisms between locations. For example, the drill string will be used within the same week at a site in the region with similar environmental conditions and a known INNS and there is no routine post deployment maintenance.

Medium: the pathway has a medium probability of transporting live invasive non-native organisms between locations. For example, the drill string is rinsed with seawater after the previous deployment and has 48 hours land transport to deployment at the licensed activity site.

Low: the pathway has a low probability of the transport of live invasive non-native organisms between locations. For example, the drill string is washed between deployments with freshwater and allowed to dry completely.

B.5. Assessing other pathways

This section asks you to provide information on any other licensed activity that could spread INNS not listed in previous sections. Please provide the risk pathway, risk level and a justification of the risk.

Section C: Management Measures

C.1 Management Measures

This section takes you through the management plan for the risks you have identified from the previous sections. Each risk will have its own risk management measure. All risks may have management measures that can reduce the risk, but where possible all **high and medium risks** should have management measures put in place.

Risk pathway and level

The risk pathways have been identified in sections B.1 to B.5 of the form and relate to risks such as vessels, transfer of material and use of equipment. The risk level is that which has been identified in the sections above.

Risk management measures

These are measures which could lower the risk of spreading INNS. They include actions such as thorough cleaning and drying of vessels and equipment, the order in which activities are undertaken to reduce the risk of transferring INNS and the existence of a suitable biosecurity plan in place for the activity.

Risk level after management

This risk level should take into consideration the risk management measures and assess if the risk level is lowered by these measures.

Section D: Recommendations

This section details how you may wish to record compliance with the management measures.

Submitting your form

You should send this form with you application for a marine licence that is for:

- A Band 3 activity
- Dredging and/or disposal
- Works related to aquaculture or seaweed farming

For all other Band 2 applications we will let you know during the application process if we need you to submit this form.

In considering whether to grant your marine licence the Marine Licensing Team will review the measures detailed in the form. It may be considered sufficient to address the containment/spread of INNS, or you may be asked to produce a more extensive biosecurity management plan. This may either be prior to any determination decision of a licence application or when we consider it appropriate, as a condition of the marine licence to be discharged post licence determination (please note that discharge of conditions of a marine licence will incur a cost).

Table 1. Common pathways for the introduction of INNS through marine activities

Pathway	Relevant types of activity	Risk description	Minimising risk
Hull fouling	Any form of operation that involves a vessel. Examples include dredging, construction and survey work. Vessels that are slow moving, such as jack up rigs, or have an inadequate biofouling management regime can have a higher risk of hull fouling.	INNS can attach to the hull of vessels while stationary or moving slowly. The risk of this pathway is increased where there is not a comprehensive vessel maintenance regime in place and when antifouling treatment is ineffective.	Ensuring vessels have an appropriate maintenance routine, including effective antifouling following the IMO biofouling guidelines
Ballast water / Hopper water	Any form of activity that includes a vessel with ballast. Examples include tug vessels, survey vessels and jack up rigs. Vessels that have travelled from a different area with known invasive species are a particular risk. Some dredging vessels may also collect and deposit hopper water.	Discharge of ballast/hopper water that was collected in a different location can contain larvae and juveniles of INNS that are not present in the recipient location, including introducing new INNS to the UK, and facilitating the spread of those species already present to new locations. Hopper water can pose an equal or greater biosecurity risk as ballast water.	Vessels should comply with the IMO Ballast Water Convention where it applies. Additionally, where the IMO Convention does not apply, vessels should exchange ballast / hopper water as far away from land as possible to minimise the risk of local and regional spread of INNS. At a minimum hopper water should be exchanged under the same parameters as ballast water.
Deposition of material	Any activity that includes the movement of non-biological material or hopper water, such as dredging, construction and grab sampling.	Any material or water that is collected in one location and transferred to another location, either purposefully or accidentally, can introduce INNS into the new location. Furthermore, any material introduced into the marine environment may provide new habitat for non-native species facilitating spread.	Consideration should be given to the environmental conditions of the source and recipient environments to either move materials as little distance as possible or ensuring that the recipient environment has environmental conditions that are not conducive to the survival of INNS from the source environment.

Pathway	Relevant types of activity	Risk description	Minimising risk
Equipment	Many activities involve immersible equipment, such as suction dredge and screens, grab sampling equipment, harvesting equipment or drilling equipment.	Equipment with trapped water or sediment can carry non-native INNS and introduce them to another.	Ensure all practical measures to are undertaken to minimise the transfer of trapped water or sediment between locations by thorough checking, cleaning and drying.
Aquaculture / Biological material	Aquaculture activities could involve transfer of seeded ropes, with seaweed and possibly shellfish, from onshore facilities or elsewhere in the marine environment to new locations.	Either the planned movement of INNS species or equipment with trapped or unidentified non-native biological material can introduce INNS to another area.	Ensure all practical measures to are undertaken to minimise the transfer of trapped or unidentified biological material between locations by thorough checking, cleaning and drying.

Table 2: Example levels of risk with different types of activity. Please note: these are examples of common activities and risk descriptions for illustration purposes, and will not reflect specific activities.

Risk Level	Construction with a vessel (Section B1 example)	Beach Replenishment (Section B2 example)	Aquaculture (Section B3 examples)	Dredging (Section B4 example)	Ground investigation (Section B4 example)
High The pathway has a high probability of transporting live marine organisms among locations	The jack-up rig is being towed at a slow speed from a site with records of INNS	The sediment is collected from an accreting site a few miles along the coast with a known population of INNS and deposited within 48 hours on the operations beach	Ropes seeded with seaweed, are transported to marine environment from onshore facility which grows a variety of seaweed and shellfish species, including INNS species, in tanks connected to the seeded ropes, with poor biosecurity control. Transported using an unwashed vehicle not allowed to dry between loads. No biosecurity plan in place.	The suction dredge and screens will not be rinsed between deployments immediately after the previous deployment and will be stored in a damp location for transit before being deployed in the licensed activity.	The drill string will be used within the same week at a site in the region with similar environmental conditions and a known INNS, and there is no routine post deployment maintenance
Medium The pathway has a medium probability of transporting live marine organisms among locations	The jack-up rig used in the licensed activity has been towed from a nearby location that is closer to a known population of INNS than the site of the licensed activities.	The sediment used is from an area of coast with a non-native species, but the collection is undertaken at a site within the area without INNS present according to a recent survey.	Ropes seeded with seaweed, are transported to marine environment from an onshore facility which grows INNS species, but in tanks well separated from the seeded ropes with a biosecurity plan in place. Transported to the site using an unwashed vehicle not allowed to dry between transporting other species.	The suction dredge and screens will be rinsed in seawater immediately after the previous deployment, however the equipment is stored in a damp location for a short transit period before being used in the licensed activity.	The drill string is rinsed with seawater after the previous deployment and has 48 hours land transport to deployment at the site of the licensed activity.
Low The pathway has a low probability of the transport of live marine organisms among locations	The jack-up rig used in the licensed activity will have been out of water for one week prior to being assembled and deployed at the licensed activity site.	The sediment used in the beach replenishment comes from a site offshore with very different environmental conditions to the site of licensed activity.	The ropes seeded with seaweed are transported from an onshore facility which only grows one species of native seaweed. It is transported using a freshly washed vehicle which has been allowed to dry out between transfers.	The suction dredge and screens will be rinsed in freshwater immediately after the previous deployment, and stored in dry conditions for 7 days prior to being used for the licensed activity).	The drill string is washed between deployments with freshwater and allowed to dry completely