



Fair Isle Harbour Improvement Works

A.17 Biosecurity Management Plan

On behalf of **Shetland Isle Council (SIC)**



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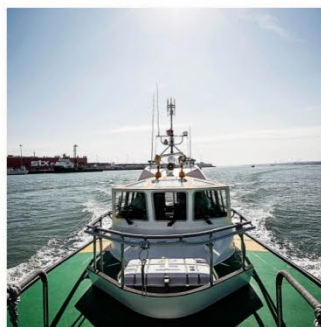
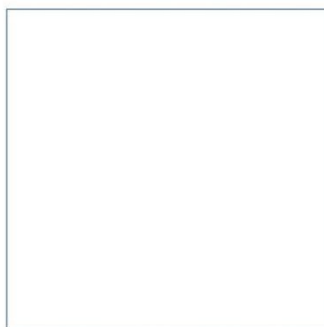
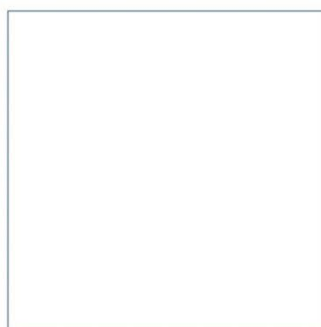
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Stantec UK Ltd
for Shetland Islands Council

Fair Isle Harbour Improvement Works

A Biosecurity Management Plan -
Final Draft for Discussion

May 2023



Innovative Thinking - Sustainable Solutions



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1 Introduction

1.1 Overview

This Biosecurity Management Plan (BMP) has been developed by ABPmer for Stantec to ensure the activities of contractors and sub-contractors always follow best practices for biosecurity during the Fair Isle Ferry Replacement project and during the operational life of the new ferry. It is a final draft for discussion pending further consultation with relevant stakeholders.

Fair Isle is highly sensitive for both its cultural and natural heritage. The island has several designations:

- **Special Protection Area:** formerly designated under the EU Directive on the Conservation of Wild Birds, and now protected by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The designation applies to the whole coastline and the northern half of the island within which North Haven bay is located. It is designated on account of hosting important breeding populations of ten seabird species and an endemic subspecies of Wren.
- **Special Area of Conservation:** formerly designated under the EU Habitats Directive, and now protected by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The SAC covers the same area as the SPA. It is designated because of the presence and extent of two Annex 1 habitats: Vegetated Sea cliffs of the Atlantic and Baltic coasts, and European dry heaths.
- **Site of Special Scientific Interest:** designated under the Nature Conservation (Scotland) Act 2004. The designated area is coincident with the boundary for the SPA. The SSSI is designated on account of its plant fossils, moorland juniper, and colonies of breeding seabirds.
- **DR (Demonstration & Research) MPA:** designated by Scottish Ministers under the Marine (Scotland) Act 2010. The designation applies to the marine environment and seas around the island. The DR MPA differs from a conservation MPA in that rather than specifically protecting species of European Importance it is specifically targeted toward carrying out research to demonstrate sustainable marine management approaches. Fair Isle's designation was prompted by decades of declining natural resources, primarily seabird and inshore fish populations. The designation, developed in collaboration with the local fishing industry, sets out an ecosystem approach which includes: monitoring of seabirds and other mobile species; development and implementation of a local sustainable shellfish fishery; and development of a research programme into local fisheries including species composition, size, distribution and temporal/spatial changes in fish stocks.
- Awarded the **European Diploma of Protected Areas** of the Council of Europe. This applies to the whole island and is awarded because of the island's rich cultural and natural heritage, and the exemplary manner in which the island is managed.

The objective of this BMP is to protect the cultural and natural heritage of the island during the construction and operation of the Fair Isle Ferry Replacement service from the threat of introduced disease or invasive non-native species.

A key consideration in fulfilling this objective is prevention. The key threat to the island's heritage is the accidental introduction of potential mammalian predators. Once biosecurity has been compromised, it may be very difficult, if not impossible to eradicate these species, which could have locally devastating consequences. Once non-native species have become established, the effect on local biodiversity may be disastrous.

According to NatureScot, non-native species are "the second most serious threat to global biodiversity after habitat loss". Islands are among the most vulnerable places to this risk. The island hosts one of the largest seabird colonies in the north-east Atlantic and the introduction of land predators, notably rats, mustelids (ferrets and their hybrids and mink) and hedgehogs would pose a severe risk.

The principal agricultural stock on the island are sheep which number several hundred in total. There are some existing issues with non-native species and seabird populations - notably the presence of several feral cats on the island, some of which frequent seabird colonies. There is currently an RSPB led project to try and establish what impact these animals are having on the island's seabird populations. Two Hedgehogs were introduced into the island in the 1990s but have since died or been removed.

As well as invasive mammalian predators, it is possible that other non-native marine species, (e.g. wireweed *Sargassum muticum*, Japanese skeleton shrimp *Caprella mutica*), have the potential to be transported to Fair Isle in construction vessels through pathways such as the fouling of hulls and in ballast water. Furthermore, the extension of the pier would introduce a new surface in the marine environment which has the potential to facilitate the spread of non-native species. Therefore, the BMP will set out measures and to ensure that these risks are minimized through best practice and use of agreed procedures.

The risk of the introduction of non-native plants that are likely to cause issues on Fair Isle given its relatively extreme climate and latitude is considered generally low.

This document will examine the potential risks and set out effective steps to minimize them. It will be crucial to ensure that effective measures are in place to monitor and ensure contractor and supplier compliance. It is considered that this plan should be an iterative document that is updated when required to reflect advances or changes in practice or when new risks or threats have been identified.

1.2 Proposed development

The proposal is for the Fair Isle Ferry Replacement Project, a project to replace the existing ferry, which takes primarily supplies, but also passengers between Shetland (Grutness and Lerwick) and Fair Isle (North Haven). The current vessel, The Good Shepherd, is approaching the end of its operational life and does not meet modern standards. The Good Shepherd is an 18m workboat, and supplies must currently be loaded on and off. It is one of the last load-on, load-off (LoLo) ferries in operation within the UK.

The ferry resides in Fair Isle permanently, only mooring up at Grutness (or Lerwick) for loading and unloading, thus minimizing opportunities for the accidental transfer of invasive non-native species (INNS). The replacement ferry will operate in the same manner.

Although the new ferry is a replacement of the old one, the port infrastructure at both Grutness and Fair Isle will need to be upgraded to operate a roll-on roll-off (RoRo) service, bringing Fair Isle in line with other similar ferry services. The vessel, being of modern build, will also be slightly longer, wider and with a deeper draft.

The following work at North Haven, Fair Isle, will therefore be required to accommodate the new ferry. This project is being progressed by Shetlands Islands Council.

At Fair Isle this will involve:

- A new quay structure be formed between the northern end of the existing quay and the existing breakwater;

- A new linkspan to facilitate the new Ro-Ro vessel;
- The existing breakwater is to be increased in size and height to provide greater shelter to the new quay structure and linkspan berth;
- Dredging to provide a sufficient water depth for new vessel around the proposed pier extension and linkspan;
- Repairs and re-fendering of the existing finger pier aligning structure to accommodate the new vessel; and
- Replacement of the existing cradle, noust, slipway and winch to accommodate the increased size of the new vessel.
- New lighting will extend along the rear of the extended quay to the north of the existing quay.
- North Haven Construction Phase 1 (Noust slipway, cradle and pier)– February to September 2024 (approximately 8 months); and
- North Haven Construction Phase 2 (Breakwater and Linkspan) – March to September 2025 (approximately 7 months).

Although the differences between the current ferry service and the new ferry, and indeed any other vessels visiting Fair Isle, are relatively minor, there is an increased risk of transfer of invasive species both during the planned construction work, and during the operational life of the ferry. The improvements made to the ferry should ensure that the number of days of operation per year is increased. Furthermore, the improvements to North Haven bay, both in terms of the strengthened breakwater and the dredging, will make the area more accessible to yachts and other leisure vessels.

1.3 Scope of the works

This BMP has been developed for managing biosecurity during the construction work described above, and during the operational life of the new Fair Isle to Grutness ferry. This document, therefore, applies to:

- The export port, i.e. the Grutness ferry terminal, Shetland.
- The island landing port, i.e. North Haven bay, Fair Isle.
- Storage on -site
- Construction work on site
- All project-specific construction staff and project-related contractors
- The ferry operator, in this case Shetland Islands Council (SIC)

1.4 Project team roles and responsibilities

The contractor's Project Manager will:

- Maintain overall responsibility for ensuring that the project is conducted in accordance with the contract requirements, the BMP and the construction Environmental Management Plan (EMP).
- Ensure that the Site Manager and Project Manager are aware of the content of the BMP and EMP, and liaise closely with both before works commence.
- Ensure that all sub-contractors, operatives, managers and workers arriving at the site are briefed on the requirements of the BMP.
- Ensure that methods statements and risk assessments are prepared for each activity, and that these incorporate consideration of biosecurity related risks, and consideration of how these will be addressed, and the contingency plans in place.
- Liaise with third parties in response to communications involving the project.
- Deliver methods statement/risk assessment briefings to subcontractors/operatives.

The Contractor’s Environmental Manager/Biosecurity Manager¹ will:

- Ensure that the project is completed in accordance with the BMP.
- Ensure that all sub-contractors, operatives, managers and workers arriving at the site are briefed on the requirements of the BMP.
- Deliver method statement/risk assessment briefings to sub-contractors/operatives.
- Authorise and implement procedures described in the BMP.

The Contractor will ensure that a Biosecurity Manager is present on Fair Isle to:

- Ensure compliance with and delivery of all biosecurity requirements at the port of departure. For the operational ferry this will be Grutness or Lerwick on Shetland, and a designated member of staff will fulfil this role. However, it is acknowledged that other specialised construction/dredging vessels may travel to Fair Isle from other ports. It is also considered likely that materials would be shipped to Lerwick via the Aberdeen ferry and then taken onto Fair Isle from Lerwick. In these circumstances the Biosecurity Manager will contact the port of departure to ensure that the requirements of the BMP are communicated and implemented.
- Ensure compliance with and delivery of all biosecurity requirements at North Haven, Fair Isle, particularly in relation to on-site storage areas and the construction site itself.
- Undertake regular review of current biosecurity risk and update the BMP as required.
- Ensure that monitoring is undertaken on Fair Isle, Grutness and Lerwick in compliance with this BMP.
- Ensure swift action is taken if biosecurity is compromised and that lessons are learned to avoid a repeat occurrence.
- Once the construction work is complete, this role will need to be transferred to a member of the SIC involved in the routine operation of the ferry.

1.4.1 Contact details of project team

Emergency Telephone Numbers of the project team responsible for the project BMP should be available to all staff and will be kept up to date as required.

Table 1. Contact details of project team

| Role | Contact Name | Contact Number |
|---|--------------|----------------|
| Contractor’s Project Manager | TBC | TBC |
| Contractor’s Environmental Manager | TBC | TBC |
| Biosecurity Manager | TBC | TBC |
| Ecological Clerk of Works | TBC | TBC |
| SIC, ferry operator | TBC | TBC |
| <p>Please send details of any incursions to the Biosecurity for LIFE website via their alert service:</p> <ul style="list-style-type: none"> ▪ Resources (biosecurityforlife.org.uk): https://biosecurityforlife.org.uk/resources/#contact | | |

¹ It is anticipated that the EcOW could also fulfil the role of Biosecurity Manager.

1.4.2 Other key contacts

Table 2. Other key contacts

| Contact | Contact Details |
|--|--|
| Holly Paget-Brown Biosecurity for LIFE Officer for Shetland and Orkney Islands: | Holly.Paget-Brown@rspb.org.uk |
| Fair Isle Bird Observatory Trust: | warden@fairislebirdobs.co.uk |
| National Trust for Scotland, Inverness: | 01463 732622 |
| NAFC Marine Centre (for marine INNS): | 01595 772000 |

1.5 Description of site and biosecurity control areas

Fair Isle is a remote island, lying 24 miles south of the Shetland Mainland and 27 miles from North Ronaldsay, the most northerly of the Orkney islands. It is administratively part of Shetland and is owned by the National Trust for Scotland (NTS). There is a permanent population of around 60 people, who mostly live in the south of the island. There are no dwellings present within or near site, the closest is located approximately 1.5 km to the southwest. Agricultural use is almost wholly sheep grazing with occasional cows and pigs and some limited cropping for food and livestock feed.

There are no invasive non-native mammal species present on Fair Isle other than the feral cats mentioned above and rabbit. The benthic surveys conducted at North Haven bay as a baseline for the Harbour Improvement Works, covering both intertidal and subtidal habitats, did not identify any marine INNS (ABPmer, 2023).

1.5.1 The construction site

The Fair Isle ferry berth is located within the harbour at North Haven, on the north-east of the island. The nearest Post Code is ZE2 9JU and the central Grid Reference is HZ 22498 72527.

The construction work described above will all take place within the approximate area inshore of the breakwater. This is defined as the construction site. The red line boundary for construction work is shown in the site plan, included as Figure 1.

1.5.2 Onsite storage areas

The two areas located near the Fair Isle Bird Observatory (hereafter FIBO) and delineated by the red line (Figure 1), show the small areas of field that will be utilised as onsite storage areas. These locations have been chosen as the fields are grazed and are considered to represent the least valuable SAC habitat available within the vicinity of the general works area.

1.5.3 Offsite fabrication areas & other vessels

It is possible that some construction materials may be transported between multiple destinations before reaching Fair Isle. It is considered likely that materials may be shipped to Lerwick via the Aberdeen ferry and then taken onto Fair Isle from Lerwick. Due to the limitations of North Haven port, it is unlikely that vessels would travel there directly, and would most likely arrive from either Lerwick or Grutness. However, the same biosecurity procedures need to be adopted regardless of the port of origin.

The Biosecurity Manager will need to identify the export port and communicate in advance to ensure that the relevant biosecurity procedures are in place. Even vessels that are working solely offshore (e.g. the dredge vessel), will also need to follow these biosecurity procedures as rats are very capable swimmers, and may swim distances of up to 2 km.

1.5.4 Construction waste

Construction waste expected to be generated by the proposed development includes non-hazardous construction materials such as off-cuts of timber, bricks, wire, fibreglass, cleaning cloths, paper, materials packaging and similar materials. Any waste that is generated will be managed in accordance with national and local policy, looking to reduce, reuse and recycle whenever possible. It is not anticipated that construction waste would be attractive to rats or other invasive species.

1.5.5 Workers

Workers will be housed in temporary accommodation on the island so that they will not have to commute each day. Although some staff may arrive by boat, it is anticipated that most staff and workers will arrive by aircraft.

1.5.6 The operational phase of the work

Since the replacement ferry will operate between Grutness/Lerwick (Shetland) and North Haven (Fair Isle), all ports will have routine biosecurity measures in place to ensure that rats or other invasive non-native species are not able to board the ferry and that other marine INNS are not transferred through fouling of vessel hulls and/or transfer of ballast water during the routine operation of the ferry.



Figure 1. Red line boundary delineating the construction site at North Haven, Fair Isle

2 Biosecurity Management Measures

2.1 Introduction

Biosecurity planning involves the identification of risk species and potential 'pathways', such as boats, aircraft and visitors. Prevention measures are required to ensure that invasive species are not transported to Fair Isle via these potential pathways.

An effective BMP will place multiple barriers along pathways, such as cleaning, disinfection, traps and checking on boats and surveillance.

This section aims to:

- Identify key risk species;
- Identify potential pathways of incursion;
- Put in place barriers reduce incursion risk;
- Describe the methods required to monitor for rats and other risk species (surveillance); and
- Define the procedures that need to be followed in the event of an incursion.

2.2 Risk species

Fair Isle has always been free of rats (black and brown), presumably due to its distance from and lack of connectivity to other islands and the mainland. It has also never had feral ferret *Mustela furo*, Red Fox *Vulpes vulpes*, Mountain Hare *Lepus timidus*, Stoat *Mustela erminea*, American mink *Neovison vison* or polecat-ferret *Mustela putorius x Mustela furo*. Previously Fair Isle has had individual hedgehogs *Erinacea europaeus*, although they are no longer present. All of these species, with the exception of Black Rat and mink, are currently present on Shetland, and as such can be considered as risk species².

Other invasive mammalian predators present on mainland Scotland that may impact on nesting seabirds include Black Rat (*Rattus rattus*) and mink, although the risks of colonisation by Black Rat is considered very low as it is only left at a handful of sites. Colonisation risk posed by mink is considered much greater. Mink are voracious predators of bird eggs and/or chicks, with the Mink Control Project currently in operation across northern Scotland, aiming to eradicate them due to the damage they cause to native wildlife.

Fair Isle does have a small number of feral cats and domestic cats. The former are known predators of the Arctic terns nesting in the south of the island, and it is likely that Storm Petrel, Black Guillemot and Puffin are also negatively impacted by cats. Fair Isle also has both Field Mouse *Apodemus sylvaticus* and House Mouse *Mus domesticus*. Although not a separate species, it is of note that field mice on Fair Isle (and other Scottish islands) look different to those on the mainland, being much larger in size. Both Field Mouse and House Mouse may predate seabird eggs when other food is scarce.

The species considered to pose the greatest risk to birds is Brown Rat (*Rattus Norvegicus*) as it is abundant on both Shetland and the mainland around any human habitation and around ports. It is also a known predator of seabird eggs, with many seabird islands showing significant improvements in populations once Brown Rats are removed (Thomas *et al.* 2017).

² [Land Mammals | Nature in Shetland \(nature-shetland.co.uk\)](https://nature-shetland.co.uk/land-mammals)

The seabird species that are most vulnerable to egg/nest predation from any of the invasive non-native mammalian predators described above are smaller ground or burrow nesting species. On Fair Isle, these include Puffin, Storm Petrel and Arctic Tern. Razorbill and Black Guillemot may also nest in boulders and at the bottom of cliffs, in areas that may be easily accessible to rats. Rats also predate the nests of ground nesting shorebirds such as Oystercatcher and Ringed Plover, [Redacted] Ness. Since rats are highly capable climbers, there is also some risk to the endemic Fair Isle Wren *Troglodytes troglodytes fridariensis*, even though it nests almost exclusively on cliffs.

As well as impacts on birds, rats may also negatively impact on plants (by eating seeds), invertebrates, and other small mammals (Thomas *et al.* 2017).

In terms of invasive marine species, in Scotland there is a growing problem with various invasive non-native species. Specific acknowledgement is given to the following species which have all been found in Scottish waters: 'Wakame' (*Undaria pinnatifida*); 'Wireweed' (*Sargassum muticum*); the red alga (*Heterosiphonia japonica*); 'Orange-striped anemone' (*Haliplanella lineata*); 'Darwin's barnacle' (*Eliminius modestus*); 'Striped barnacle' (*Balanus amphitrite*); 'Japanese skeleton shrimp' (*Caprella mutica*); 'Slipper limpet' (*Crepidula fornicata*); 'Leathery sea squirt' (*Styela clava*); 'Carpet sea squirt' (*Didemnum vexillum*); 'Pacific oyster' (*Crassostrea gigas*); 'Chinese mitten crab' (*Eriocheir sinensis*). Illustrations of these species can be found within the Biosecurity Plan for the Shetland Isles³. A desk-based search of the species listed above showed no records of these species in Grutness or Fair Isle. The following species have been recorded on Shetland at a distance greater than 3 km of Grutness: Orange-striped anemone' (*Haliplanella lineata*); 'Darwin's barnacle' (*Eliminius modestus*); Striped barnacle' (*Balanus amphitrite*); Japanese skeleton shrimp' (*Caprella mutica*).

The red alga *Bonnemaisonia hamifera* has been previously recorded at Fair Isle and the green alga *Codium fragile* has been recorded at Grutness bay, thus a potential pathway exists for transmission between the two sites via the passenger ferry. These are therefore considered risk species, although it is of note that they were not encountered in the recent benthic surveys undertaken as a part of the harbour improvement project. There are two marine INNS known to be present at Lerwick, namely Orange-tipped sea squirt *Corella eumyota* and the bryozoan *Bugula simplex*. Both are thought to spread primarily through fouling of vessel hulls. Lerwick harbour has been identified as a very high-risk port within the Shetland islands in relation to the introduction of INNS, due to high levels of shipping and boating activity. However, because of this, measures have been put in place by the NAFC Marine Centre to monitor regularly for the presence of INNS to enable the early detection of any new invasive species (Colin *et al.* 2015).

There are various invasive animal and plant species that could conceivably be introduced to Fair Isle. Up to date advice on these can be found on the UK Government website⁴.

The procedures described to prevent spread of invasive mammals would be effective in preventing the spread of other animal species. In general, the risk of invasive plants is considered low for Fair Isle due to its high latitude and difficult weather conditions. However, the invasive plants that most routinely occur within the UK are Japanese Knotweed *Fallopia japonica*, Giant Hogweed *Heracleum mantegazzianum*, Himalayan Balsam *Impatiens glandulifera*, Rhododendrons *Tsusiophyllum Maxim* and New Zealand Pygmyweed *Crassula helmsii*. Illustrations and further information on potential control measures for these invasive plants may be found on the website listed above.

³ A Biosecurity Plan for the Shetland Islands (researchgate.net)
https://www.researchgate.net/publication/273137186_A_Biosecurity_Plan_for_the_Shetland_Islands#:~:text=The%20Biosecurity%20Plan%20for%20the%20Shetland%20Islands%20has,%28SMSP%29%2C%20which%20is%20now%20in%20its%20fourth%20edition.

⁴ Invasive non-native (alien) animal species: rules in England and Wales - GOV.UK (www.gov.uk) , How to stop invasive non-native plants from spreading - GOV.UK (www.gov.uk)

2.3 Pathways

The key pathways associated with the harbour improvement works are limited to the established routes on and off the island. These are:

- Vessels, both in the construction phase (e.g. workboats) and the replacement ferry itself during the operational phase of the project.
- Aircraft, which are likely to be the main route on and off the island for construction workers and any other staff visiting the site.

Care should be considered in transporting any new material to Fair Isle, whether by boat or by plane, and careful checks should be made of everything from clothing and personal possessions to construction materials and plant machinery.

2.4 Barriers

Prevention measures, in the form of barriers to pathways, are considered for both the construction phase of the project, and the operational phase (i.e. relating to the operation of the new ferry).

2.4.1 Construction

Although a detailed construction methodology is yet to be determined, it is reasonable to assume for the purposes of this BMP that the construction activities will utilise excavators, dozers, cranes, dump trucks and possibly other small plant used during construction. The precise nature and quantity of plant employed during construction will vary with each of the activities described in paragraph 1.2.4. Therefore, the transport of plant and materials to and from the construction site, and the biosecurity measures required to minimize risk of incursion will need to be included within the risk assessments for each of these activities.

However, the following measures to control the arrival of vessels and/or construction materials from other locations (both Grutness and other ports) can broadly be applied across various scenarios. The Biosecurity Manager will need to liaise directly with the export port and vessel to ensure that the logistics are planned in advance and relevant storage areas are made available at the export port. However, the procedure adopted would be broadly as follows:

- **Measures to avoid transport of INNS through either fouling of hulls or ballast water.** The fouling of a vessel hull and other below-water surfaces can be reduced through regularly cleaning and the use of protective coatings. Therefore, copies of the vessel maintenance logbook should be obtained to ensure that a suitable cleaning regime is being regularly undertaken by the incoming vessel. If the vessel has not been cleaned recently (once per 2 years being a reasonable frequency), then it may be necessary to find out where the vessel has been working to assess likely risk on a case-by-case basis
- The vessels to be used for the construction of the proposed development will in the main originate from Scotland. Vessels operating in Scottish waters are advised against discharging water ballast in order to avoid causing an impact on the marine environment and to minimise the risk of transferring non-native species in ship's ballast water and sediments. All vessels must adhere to the International Maritime Organisation's (IMO) 'International Convention for the Control and Management of Ships' Ballast Water and Sediments', which introduced two performance standards seeking to limit the risk of non-native invasive species being imported (including distances for ballast water exchange and standards for ballast water treatment). The Convention came into force internationally in September 2017.

- **Measures to avoid accidental transport of rats or other invasive non-native species.** The export port will store the construction materials in a designated secure storage area, which should be constructed of concrete and disinfected to ensure there is no contamination. When unloaded at the export port, the construction materials should be unpacked and inspected to ensure that no rats or other non-native invasive mammalian predators are present. Rat poison and/or bait stations will be positioned around the storage area and regularly inspected. Paperwork detailing the inspections should be passed onto the Biosecurity Manager. Although the risk species may vary between ports, Brown Rat is of concern at virtually all locations.
- The vessel will need to ensure that rat traps/bait stations are deployed on board the vessel several days in advance of sailing and ensure that these are checked, and that the vessel is free of rodents prior to embarkation. Records of the checks will be kept and passed onto the Biosecurity Manager. If rats or signs of rats are found, then they will be removed. A 'Stop event' is then called by the vessel's skipper and the Biosecurity Manager will be contacted. A decision will be made on the correct course of action. If the vessel has already embarked, it may be returned to port, or may have to wait to ensure there are no other signs of rodents before being able to land.
- The skipper will communicate with the Biosecurity Manager in advance of arrival at North Haven, and the Biosecurity Manager will meet the vessel at the pier. The skipper will invite the Biosecurity Manager on board and pass over the relevant inspection paperwork. All parties will inspect the construction materials or plant before offloading. If any signs of rats are encountered, a 'Stop event' will be called, and the offloading of cargo suspended. A decision on the appropriate course of action will be made by the Biosecurity Manager as to whether to continue unloading or return the vessel to the port of origin.
- All materials, plant and equipment will be offloaded from the boat at the pier at North Haven. All arrivals shall be inspected by the Biosecurity Manager, prior to permission being granted to unload
- Even vessels that do not need to land, e.g. the dredge vessel, will also need to adhere to all the biosecurity measures listed above as they will be working within swimming distance of Fair Isle (as rats can swim up to 2km).

All equipment/construction materials will be stored on Fair Isle in the designated onsite storage area. This area will be regularly inspected by the Biosecurity Manager and the details of all inspections will be recorded in the Biosecurity log. Smaller items may be placed in sealed rodent-proof containers in a designated quarantine area.

All staff and workers will be briefed prior to their visit on how to check bags, clothing and any other items before embarking to Fair Isle, to ensure that rats and or/other invasive species are not accidentally transferred to with people and their luggage. Since Brown Rat is abundant elsewhere, commensal with humans, and attracted by food, then all workers should ensure that any edible items they carry with them are transported in rodent proof containers. All bags should be checked for rodents/signs of rodents prior to departure.

Whether arriving by air or boat, new arrivals will be met by the Biosecurity Manager, who should be kept informed of staff changes, worker arrivals and any changes to schedules. The Biosecurity Manager may choose to carry out checks as people arrive and will ensure that all workers understand the Biosecurity Management Plan and their responsibilities.

2.4.2 Operation

The operational ferry will need to adhere to strict biosecurity measures to protect Fair Isle's bird life from rats. Measures will likely include:

- Deploy chew cards or wax blocks around the vessel and check them regularly. Chew cards/wax blocks should be checked before embarking from Grutness and before arrival in Fair Isle⁵.
- Ensure skipper and crew are aware of all biosecurity guidance.
- Secure possible rodent entry points on vessel.
- Provide advice for general public on biosecurity before boarding the vessel preferably in advance when booking tickets (see Appendix C for example of text that could be adapted for general public). Display biosecurity posters in ports and on vessel.
- Re-pack luggage before boarding, never leave luggage on the harbour side and advise passengers of these procedures.
- Public and crew to pack any food in rodent proof containers.
- Store any waste securely in rodent proof bins.
- Use rat guards on mooring chains and anchor lines.
- Regularly inspect vessel for other signs of rats, e.g. gnawed wires, droppings, entry holes, etc.

If a rat/other invasive species (or suspected evidence) is found on the ferry:

- A 'Stop event' should be called.
- The ferry should not land at Fair Isle if there is a rat (even a dead one) or a suspected rat /other invasive mammal species and should return to the port of departure.
- Do not push a rat overboard, dead or alive.
- Do not assume there is only one rat on board.
- Return to a mainland harbour and deploy appropriate control measures⁶.

The potential for transfer of either Orange-tipped sea squirt or the bryozoan *Bugula simplex* from Lerwick harbour due to the fouling of the vessel hull during the regular operational life of the replacement ferry is acknowledged. The replacement ferry will ensure protective coatings are applied regularly, which coupled with a regular cleaning regime, will reduce the chances of accidental transfer.

2.5 Surveillance

During construction, surveillance of the following areas will be required:

- Any construction related vessels travelling to Fair Isle
- The designated storage areas
- The construction areas (e.g. the pier, the new quay, the noust).

During operation, surveillance of the following areas will be required:

- The ferry
- The ferry terminal at Grutness
- The ferry terminal at Lerwick

2.5.1 Construction

Surveillance of vessels is typically carried out by using either wax blocks or chew cards⁷.

⁵ Checking twice increases the number of barriers along this pathway.

⁶ Advice on rodent removal methods for vessels can be found here: [found-signs-of-stowaways-onboard-your-boat-here-are-the-steps-to-take.pdf](https://biosecurityforlife.org.uk/admin/resources/found-signs-of-stowaways-onboard-your-boat-here-are-the-steps-to-take.pdf) (biosecurityforlife.org.uk): <https://biosecurityforlife.org.uk/admin/resources/found-signs-of-stowaways-onboard-your-boat-here-are-the-steps-to-take.pdf>

⁷ The recipe to make wax blocks can be found here: [recipe-for-making-flavoured-wax-blocks-1.pdf](https://biosecurityforlife.org.uk/admin/resources/recipe-for-making-flavoured-wax-blocks-1.pdf) (biosecurityforlife.org.uk)

Flavoured wax blocks are attractive to rodents, and the teeth marks left in the wax can be used to identify the rodent⁸. The wax blocks may be positioned within wooden boxes (with rodent sized holes in each side) to ensure that wax blocks are interfered with by people, large gulls etc.

It would not be desirable to use poison/kill traps on a boat carrying members of the public due to risk to children, although it could be possible to deploy poison/traps in a sealed bait station on other workboats so that it cannot be accidentally accessed.

Other surveillance methods, such as tracking tunnels and hair traps are more difficult to use, especially in a confined space. Usually identifying successful deployment locations requires careful consideration and knowledge of rats and how they use their habitat.

However, the use of a UV light (blacklight) is a very effective means of detecting rat urine, which fluoresces under UV light making it easy to detect. This is a helpful surveillance method that could be used on a vessel, especially if the presence of a rat is suspected but not confirmed. The wax blocks should be checked before every crossing to Fair Isle (pre-embarkation) and also before arrival at North Haven Bay. By checking twice this increases the number of barriers to this potential pathway.

Surveillance of storage areas would utilise similar methods of deploying and checking wax blocks. Poison should never be used for surveillance purposes on seabird islands due to the risks posed to non-target species.

Since the storage areas are in fields it may also be appropriate to use hair tubes and tracking tunnels, as multiple surveillance methods have been found to be more successful than reliance on a single methodology. Hair tubes need to be placed in long grass, in areas likely to be well used by rodents. Bait is placed at one end of the tube, and a small sticky pad is attached near the entrance so that when an animal takes the bait it leaves a hair sample behind. Tracking tunnels are filled with sand, so that if an animal enters then its tracks are recorded in the sand. They also need to be placed in long grass that is likely to be well used by rodents.

As described above, all construction materials taken into the storage area will be checked for rodents. Regular checks of the storage area (daily) and the surveillance devices deployed (wax blocks, hair tunnels, sand tunnels) will be undertaken by the Biosecurity Manager and recorded within the Biosecurity logbook.

Surveillance of the construction areas could adopt similar techniques as the storage areas, although wax blocks, hair tubes and sand tunnels will need to be deployed carefully so that they are not obvious to the general public.

2.5.2 Operation

The measures described above for vessels during construction should also apply to the operational ferry. Additional surveillance (deployment of wax blocks/chew cards) around the ferry terminal at Grutness could also be helpful.

2.6 Incursion response

If a rat/other invasive mammal is found, or possible signs of an invasive mammal are found on a vessel, either before boarding the vessel or whilst on route then a 'Stop event' should be called. The vessel

⁸ See [ID TOOL - Rodent identification and signs of stowaways \(biosecurityforlife.org.uk\)](https://www.biosecurityforlife.org.uk/).

should not depart for Fair Isle but should either stay in port or return to the port of origin. The following control measures recommended by the Biosecurity for LIFE project should then be adopted⁹.

If a rat/other invasive mammal is found, or suspected signs of an incursion are detected within the storage area, then the matter needs to be progressed as a matter of urgency. Trapping may be straightforward if the animal is in a known area, but becomes increasingly more difficult as animals disperse, and in the case of rats, they breed rapidly. It is important never to assume that there is only one rat – if one rat is seen, there are likely to be more.

The nature of the incursion response depends on whether the rodent sighting is confirmed or whether it is speculative. For example, sightings may be fleeting, or reported by a member of the public, it is possible that tracks may be from a rat, but could also potentially be from a field mouse etc.

If it is not clear whether a rat (or other invasive mammal) is present, then the first stage is to gather information as rapidly as possible. In this instance, FIBO should be contacted, as they also have surveillance measures in place to detect incursion of rodents. Their Biosecurity logbook should be checked to find out whether there have been any potential signs of rats logged in their monitoring records.

Searches for droppings and other signs, such as tracks, hair, scratch marks should then be carried out as a matter of urgency. Any evidence should be photographed. If the evidence is going to be difficult to identify, send to more than one expert to review independently to give their opinion. Ask each of them why they came to the conclusion they did and what other opportunities there may be to further verify this. Always archive the evidence and record the incident in the biosecurity log.

If the presence of a rat is confirmed, then a team needs to deploy poisoned bait/traps as rapidly as possible. In this instance, non-target species (Field Mouse and House Mouse) may be vulnerable. Possible measures to avoid accidental poisoning of these species should be discussed as rapidly as possible with relevant experts, both from FIBO and from within the Biosecurity for LIFE team.

In the case of a probable or confirmed incursion, additional bait stations and/or traps need to be deployed in a grid across the island within 48 hours. For this to be possible, the mechanisms for responding to a reported sighting/sign find must be progressed rapidly and lines of responsibility need to be clear. This should be established with FIBO at the project outset, as it will be necessary to work with them should an incursion occur. Transport arrangements for additional staff should be arranged as soon as possible, and all equipment should be ready and stored on the island. It is anticipated that FIBO will have additional bait stations, although it will be necessary for the Biosecurity Manager to liaise with FIBO in advance to ensure that incursion response procedures are agreed, and an incursion response kit is present on Fair Isle¹⁰ so that an incursion response can be effectively implemented rapidly if needed.

Where there is already a network of stations in place on the island, this should be used as the basis for the response. It may need to be bolstered – e.g. if signs of a rodent are discovered on a large island in an area where there is no grid or only a sparse grid. 1 to 2 devices per ha targeting the preferred habitat is sufficient.

If a grid is already established, it may be possible to reduce the grid size around the area of the sighting/evidence. Traps should be placed around the area of the sighting/evidence where there is plenty of natural cover and where rodents are likely to be active (e.g. alongside large rocks or walls,

⁹ [Found-signs-of-stowaways-onboard-your-boat-here-are-the-steps-to-take.pdf](#) (biosecurityforlife.org.uk).

¹⁰ See Table 1.9 in [island-biosecurity-manual-2 \(1\).pdf](#)

around the base of trees, under logs, overhanging vegetation, and under buildings). Traps can be baited with a mixture of peanut butter and rolled oats for an easy, durable bait which can be stored as part of the Incursion Response Kit. Tracks are used by invading brown rats and mice. Brown rats tend to be coastal foragers while black rats might prefer interior forest and may avoid tracks.

Procedures for setting up a grid and monitoring procedures following an incursion are described in more detail in Appendix A, which is taken from the Biosecurity for LIFE manual¹¹. It is anticipated that these procedures would be followed collaboratively with FIBO staff. However, the practical details of an incursion response plan would need to be established by the Biosecurity Manager in collaboration with FIBO.

In relation to detection of a marine INNS, such as those described in Risk species the response to an INNS needs to be considered carefully. If the INNS has been detected on the hull of a vessel, options include exposure to air, mechanical/manual removal, enclosure, or chemical treatment. However careful choices need to be made to avoid impacts on non-target species. In extreme situations quarantine or eradication may be considered. However, in the first instance consultation with experts at the NAFC Marine Centre is recommended for advice on the best course of action.

Although the risk of invasive non-native plants is considered low, information on control is again species specific. In the first instance the advice given on the UK Government website should be consulted¹².

¹¹ [MANUAL - Island Biosecurity \(biosecurityforlife.org.uk\)](https://www.biosecurityforlife.org.uk/)

¹² [How to stop invasive non-native plants from spreading - GOV.UK \(www.gov.uk\)](https://www.gov.uk/)

3 Management of the Work

3.1 General site procedures

The requirements of this BMP shall be highlighted to all persons involved in the construction of the new Fair Isle Ferry Upgrade, directly or indirectly. This includes those visiting the island, working on the island, supplying materials, plant or equipment to the island. All suppliers of materials, plant or equipment to be used on the island shall be given copies of this BMP. Any material, plant or equipment found not to follow the requirements of the plan, shall be refused to be offloaded at the off-site storage area, or the export port and the cost of replacement borne by the supplier.

- Delivery vessels, on arrival at Fair Isle, shall comply with the 'Fair Isle Biosecurity Checks' described in Pathways.
- Workers arriving on the island shall be made aware of the BMP and their responsibilities through pre- travel brief, site induction and regular toolbox talks. A Biosecurity Log (see will be maintained centrally on-site, which will record the results of all actions undertaken to maintain biosecurity. Examples of Biosecurity log sheets are included as Appendix B

3.2 Sign off and responsibilities

All contractors and sub-contractors must be contractually obliged to follow this BMP. It will be the responsibility of each contracting organization to ensure that their employees and sub-contractors follow this plan and for them to layout clearly the measures that must be adhered to. Being able to demonstrate compliance should be included in the contract payment mechanism.

3.3 Project specific biosecurity actions

The BMP shall be in operation at all times during the duration of the construction work and should be consulted in relation to logistics and planning and incorporated within risk assessments. The measures identified below will be implemented in order to further minimize the risk of introducing invasive non-native species. The BMP is iterative and will be updated regularly considering advances in best practice, identification of emerging issues such as a new disease being recorded, changing advice from Government with regards to avian influenza control measures, or from lessons learned through the operation of the site.

Project-specific biosecurity actions and commitments to minimize risk are outlined in Table 3. Actions have been grouped into three categories, which relate to staff and workers: materials, plant and equipment or shipping. Where appropriate, responsibility for actions, timing and location has been included. The register of actions and commitments is a live document and will be reviewed as required during the project.

Table 3. Project specific biosecurity actions and commitments

| Item. | Action | Timing | Location | Person Responsible |
|--|---|--|---|--|
| 1. Project Workers (includes arrivals via plane and boat) | | | | |
| 1.1 | All workers to receive an appropriate written briefing on their biosecurity responsibilities prior to travel (Appendix C). | Before travelling to site | Pre-travel | Biosecurity Manager |
| 1.2 | All workers will be made aware of this BMP and their responsibilities through site induction and ongoing toolbox talks. | Pre and during construction | On arrival to site and whilst working on site | Biosecurity Manager |
| 1.3 | To avoid using PPE on different sites, PPE should be kept on Fair Isle for all staff and visitors | All times | Site office | Biosecurity Manager |
| 1.4 | Where this is not practical, PPE and footwear must be thoroughly checked, cleaned and dried before travel to Fair Isle. | Pre- travel | Pre-travel | All workers |
| 1.5 | All workers report suspected issues immediately to the Biosecurity Manager | All times | All locations | All workers |
| 2. Materials, Plant and Equipment | | | | |
| 2.1 | All materials, plant and equipment should be stored in a dedicated biosecurity area (hard standing) at the export port, which would include washing and disinfection facilities and regular surveillance for rodents. All plant and materials are to be checked using a form provided in Appendix B. If any organic material or soil is found, then a two-step cleaning procedure is implemented: cleaning with water followed by disinfection (allowed to dry on). | Before leaving export port | Export port | Biosecurity Manager to liaise in advance with export port. |
| 3. Vessels (construction and operational ferry) | | | | |
| 3.1 | Ensure boats regularly antifouled and checked for INNS as part of regular maintenance regime. Consider risks based on location of previous work if applicable. | Pre- and during construction | n/a | Biosecurity Manager to liaise with vessel company |
| 3.2 | Regular application of protective coatings to prevent fouling for the replacement ferry to reduce risk of transfer of INNS from Lerwick in particular due to its very high-risk status. | Operational ferry | n/a | SIC (ferry operator) |
| 3.3 | Prior to departure the skipper will confirm that the biosecurity checks (wax blocks/traps) have been undertaken, and will | Construction vessels, also operational ferry | Onboard the vessel | Skipper of vessel, Biosecurity Manager |

| Item. | Action | Timing | Location | Person Responsible |
|-------|---|-----------|----------------------------------|--|
| | ensure that they are checked again prior to arrival at North Haven. Should a suspected/confirmed invasive species be found then a 'Stop event' will be called. The Biosecurity Manager should be consulted and will then advise on the most appropriate course of action (if there is uncertainty the vessel should be returned to the export port). | | | |
| 3.4 | Mooring lines to be fitted with rat guards. Vessels should not use mooring lines unless necessary | All times | Both export port and North Haven | Skipper of vessel, Biosecurity Manager |
| 3.5 | Do not land at night, do not load vessels at night | All times | Both export port and North Haven | Skipper of vessel, Biosecurity Manager |

3.4 Site monitoring and monitoring of the Plan

Daily checks of wax blocks and other surveillance devices around the construction site and storage areas will be undertaken by the Biosecurity Manager to ensure there are no signs of incursion.

The implementation of the BMP will need to be monitored and the biosecurity log will provide a clear recording system for the results of checks that have been made or actions are taken on and off-site, which will then allow the Biosecurity Manager to analyse the situation and take the appropriate action if and when breaches of biosecurity occur. Compliance monitoring of this BMP implementation and the associated biosecurity log will be undertaken by the biosecurity manager and the site environmental manager.

The biosecurity logbook will include:

- Details of routine inspections.
- Details of reporting chain following identification of potential problems. This will be directly to the Biosecurity Manager in the first instance.
- Details of workers arriving on site (name, date and time of visit. Company). It must also be ensured that visitors are aware of relevant biosecurity measures.
- Records of checks undertaken by the Biosecurity Manager. Note that negative results where no specimens are found are just as valuable in being able to identify when a population became established which may be able to be cross-referenced with operations being undertaken around that time and allow appropriate alterations to site practices to be made to minimize the risk in the future.

3.5 Incursion response

The Biosecurity Manager will be responsible for implementing the incursion response. The procedures that need to be followed are described in Section 2.6 above with more detail given in Appendix A.

The Biosecurity Manager will need to work collaboratively with FIBO to ensure that an agreed incursion response plan for invasive mammalian predators can be finalised prior to the work commencing, and to ensure that the required equipment is available on Fair Isle should an incursion occur. Although Appendix A provides information on what to do if a rat is detected, consideration needs to be given to the possibility of other INNS occurring, such as Mink for example, which would require different traps. For example, if using lethal traps for Mink, consideration needs to be given regarding risks to non-target species.

If marine INNS are detected then the Biosecurity Manager will need to consult with relevant experts, starting with the NAFC Marine Centre as specified within the Shetland Islands Biosecurity Plan. Similarly, if invasive plants are found, UK Government advice should be followed¹³.

3.6 Implementation and review

3.6.1 Construction

The Biosecurity Manager is key to the delivery of actions in this BMP and has overall responsibility for ensuring that measures outlined in this plan are implemented as well as being able to demonstrate its effectiveness through the keeping of accurate records. They will also be responsible for ensuring that

¹³ [How to stop invasive non-native plants from spreading - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/guidance/how-to-stop-invasive-non-native-plants-from-spreading)

contractors and the supply chain understand the risks and required measures and that effective procedures are in place to ensure these measures are followed. These measures should also be specified contractually.

3.6.2 Operation

Once the construction work is complete, then a new Biosecurity officer will need to be appointed to ensure that the ferry adheres to the biosecurity measures described above. It is anticipated that this will be either the Skipper of the new ferry or one of the crew. It will be necessary for all of the crew to understand the biosecurity management measures and ensure that these are implemented. It is anticipated that consideration of biosecurity could be incorporated within standard risk assessment procedures.

4 Risk Assessment

Risk is the likelihood of a harmful event occurring (in this case an invasive non-native species or notifiable disease), multiplied by the severity of the consequences if the event occurs. Risk analysis usually has four stages, namely:

- Likelihood of introduction
- Likelihood of establishment and spread
- Potential impacts
- Risk calculation and evaluation

4.1 Likelihood of introduction

Risk will be assessed during construction and during the operational life of the replacement ferry.

4.1.1 Construction

The increase in people travelling and staying on Fair Isle because of the construction work does increase the risk of a biosecurity incursion. However, tourists regularly visit Fair Isle, and therefore the nature of the risk does not fundamentally change. Ensuring that staff are made aware of the biosecurity concerns in advance, including contractually, is considered an effective means of reducing this risk.

The increase in different vessels travelling to Fair Isle also increases biosecurity risk. However, ensuring in advance that biosecurity measures are in place at the port of export will reduce risks.

4.1.2 Operation

It is possible that the harbour improvements will improve conditions for other vessels such as yachts and other leisure craft. However, improving the availability of biosecurity information for visitors (e.g. posters within harbours etc) will help to reduce risk.

Since the replacement ferry is likely to have greater number of operational days per year than old ferry then this may increase risk. However, ensuring that the skipper and crew are operating rigorous checks for INNS will reduce the risks.

The extension of the pier would introduce a new surface in the marine environment which has the potential to facilitate the spread of non-native species. The likelihood of introduction is considered low for most INNS assuming that the procedures above are followed. However, the potential for transfer of the green alga *Codium fragile* from Grutness to Fair Isle, and conversely the red alga *Bonnemaisonia hamifera* from Fair Isle to Grutness is acknowledged. However, whether this is a current concern needs to be confirmed as neither species was found during the recent benthic surveys conducted as part of the work for the ferry replacement project at either site. The potential for transfer of either Orange-tipped sea squirt or the bryozoan *Bugula simplex* from Lerwick harbour due to fouling of the vessel hull during the regular operational life of the replacement ferry is acknowledged. The replacement ferry will ensure protective coatings are applied regularly, which coupled with a regular cleaning regime, will reduce the chances of accidental transfer.

In summary, the INNS considered of greatest risk during both construction and operation is Brown Rat, due to its abundance and prevalence within most ports, its association with humans and its abilities to escape detection, and reproduce rapidly.

4.2 Likelihood of establishment and spread

For both marine and terrestrial pathways, there is no significant difference from the mainland environment that would prevent non-native species from becoming established and thus there is a high likelihood of establishment and spread for many species. This further highlights the importance of preventing these species from being transferred to Fair Isle.

4.3 Potential impacts

This is based on the potential harm that the non-native species could cause in the recipient environment. On Fair Isle the effects could be significant, the major threat being the risk mammalian predators, notably rats or ferret/polecat-ferret, could have on internationally important seabird species. Rodents are more likely to arrive on an island and remain undetected than many of the larger invasive mammals. Therefore rats are considered a high risk species.

Ferret and Polecat-ferret are also considered high risk species as they are present on Shetland, and may be devastating in terms of their impact on seabird species.

Although not present on Shetland, Mink is also considered a high risk species as it is present on the mainland, and may result in very significant damage to birds as it is a particularly voracious bird predator.

4.4 Risk calculation and evaluation

Risk can be estimated using a variety of methods, either qualitatively or quantitatively. Table 4 below shows a range of potential biosecurity risk scenarios, the likelihood of the risk occurring without mitigation, the recommended mitigation measures that will be adopted to reduce risk, and the residual risk that will remain once mitigation is in place.

Table 4. Assessment of most likely biosecurity risks for different incursion scenarios, recommended mitigation and residual risk

| Scenario | Risk | Mitigation Measures | Residual Risk |
|---|----------|--|--|
| Incursion of rats | High | Strict biosecurity measures to control pathways (people arriving by aircraft, and staff/construction materials arriving by vessel) as described in Section 2.4 | Minor level of residual risk, but acceptable to proceed with work. |
| Incursion of mink | Moderate | | Low level of residual risk, acceptable to proceed with work |
| Incursion of polecat-ferret/ferret | Moderate | | Low level of residual risk, acceptable to proceed with work |
| Incursion of stoat/weasel | Moderate | | Low level of residual risk, acceptable to proceed with work |
| Incursion of hedgehog | Low | | Very low level of residual risk, acceptable to proceed with work |
| Transfer of <i>Codium fragile</i> (from Grutness) | Moderate | Ensure that hulls of vessels are regularly cleaned. Biosecurity Manager to inspect Vessel Maintenance Logs prior to sailing. If cleaning has not been undertaken recently, Biosecurity Manager to assess likely risk on case-by-case basis considering export port, recent areas of operation and other influential factors. Operational ferry will ensure that the hull is cleaned regularly, and a protective coating is regularly applied to reduce the risk of accidental transfer of marine INNS via fouling. | Low level of residual risk, acceptable to proceed with work |
| Transfer of Orange tipped sea squirt | Moderate | | |
| Transfer of the bryozoan <i>Bugula simplex</i> | Moderate | | |
| Transfer of other marine INNS | Moderate | | |
| Introduction of invasive plants | Low | Ensure that construction materials/plant clean and checked for presence of seeds, soils etc before embarkation. All staff and workers, whether travelling by vessel or aircraft, should also ensure that clothes, boots etc are clean and free from soil, seeds, etc. | Very low level of risk, acceptable to proceed with work. |

5 Summary

In order to preserve Fair Isle's designated seabird colonies and habitats, strict biosecurity measures are recommended both during construction and during the operation of the replacement ferry. This BMP summarises the types of measures that are required. The BMP should be considered a live document to be updated as needed, and at this stage is a final draft for discussion pending further consultation with relevant stakeholders.

The highest risk is considered to be the potential incursion of Brown Rat, as rats are present both on Shetland and on the mainland in nearly all ports, they are associated with humans, and they are known to board vessels without attracting notice. They also disperse and reproduce rapidly, making control efforts laborious. They have a disastrous impact on breeding seabirds, in particular burrow and ground nesting species. There are internationally important colonies of ground/burrow nesting species on Fair Isle including Arctic Tern, Puffin and Storm Petrel. It is also possible that rats would be able to access the nests of the endemic Fair Isle Wren.

Although all invasive mammalian predators have the potential to result in detrimental impacts on seabirds, Mink is also notable as a particularly voracious bird predator.

The potential for transfer of either Orange-tipped sea squirt or the bryozoan *Bugula simplex* from Lerwick harbour due to fouling of the vessel hull during the regular operational life of the replacement ferry is acknowledged. The replacement ferry will ensure protective coatings are applied regularly, which coupled with a regular cleaning regime, will reduce the chances of accidental transfer.

This document identifies incursion pathways whereby incursions could occur and identifies measures to introduce multiple barriers for each pathway.

The success of the Biosecurity Management Plan will depend heavily on the Biosecurity Manager appointed to take forward the recommendations made within this document, and to ensure that the risk assessments for each of the construction activities also consider biosecurity according to the principles set out within this document.

The need for advance planning, specifically in relation to biosecurity measures at export ports, and also in relation to collaboratively developing an incursion response plan in coordination with FIBO are areas that will require consideration well in advance of construction start dates.

The need to inform vessels and staff of biosecurity arrangements well in advance of arrival is also of central importance, and it is important that biosecurity procedures are included in contractual documentation for all contractors.

With the relevant biosecurity measures in place, it is considered acceptable to proceed with the harbour improvement work.

This Biosecurity Management Plan should be considered as a live document, to be updated throughout the construction phase, and adapted as needed to take the project through to the operational phase. It is anticipated that various updates will be required to ensure that the skipper and crew of the new ferry are able to operate a secure service in terms of biosecurity, protecting Fair Isle's biodiversity into the future.

6 References

ABPmer, (2023). Fair Isle Ferry Upgrade, Benthic Survey Report, ABPmer Report No. R.4064. A report produced by ABPmer for Stantec, November 2022.

Collin, S.B., MacIver, K., Shucksmith, R. (2015). A Biosecurity Plan for the Shetland Islands.

Thomas, S., Brown, A., Bullock, D., Lock, L. Luxmoore, R., Roy, S., Stanbury, A., & Varnham, K. (2017). Island restoration in the UK – past, present and future. *British Wildlife* 28:4, p.231-243.

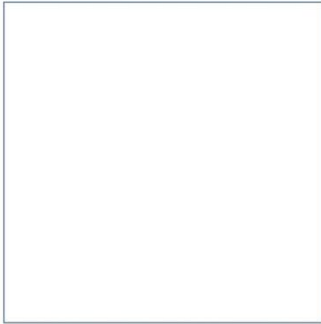
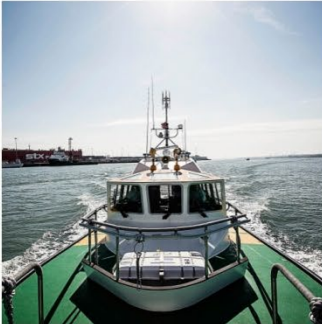
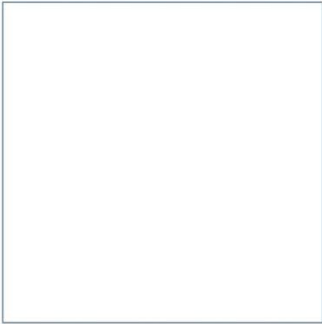
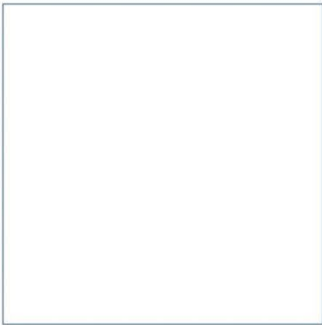
7 Abbreviations/Acronyms

| | |
|------|------------------------------|
| ABP | Associated British Ports |
| BMP | Biosecurity Management Plan |
| FIBO | Fair Island Bird Observatory |
| INNS | Invasive non-native species |

Cardinal points/directions are used unless otherwise stated.

SI units are used unless otherwise stated.

Appendices



Innovative Thinking - Sustainable Solutions

A Confirming and Responding to an Incursion

This information is taken from the Biosecurity for LIFE manual: [MANUAL - Island Biosecurity \(biosecurityforlife.org.uk\)](#). It has been edited to ensure that it is relevant to the project and is intended to show the procedures that would be followed collaboratively with FIBO in the event of a biosecurity incursion. However, these procedures would need to be agreed with FIBO and potentially refined as needed.

Correct identification of any sign of rodent incursion is crucial to making the right decision on how to respond. In some situations, the evidence of an incursion will be indisputable, e.g. a dead body in a trap. However, in many cases the evidence will be open to interpretation, e.g. sightings by third parties. It is important, therefore, that evidence collection techniques maximise the information available and minimise the chance of wrong conclusions being drawn from it. Table A1 provides advice on collecting and caring for different types of evidence indicating a rodent incursion.

If there is any uncertainty over the sign, ask at least two experts to help interpret the evidence. Experts prepared to offer advice should be identified in advance and their names and contact details should form part of the Incursion Response Kit (see below). As experts may be uncontactable in the field when you need their advice, ensure you gather details of several experts who are prepared to help.

In New Zealand, the first line of action if incursion is suspected is to use rodent detection dogs to help locate any individuals that are present. In the UK, there is currently one trained biosecurity dog. However, since guidance around the use of trained biosecurity dogs may change, the Biosecurity for LIFE website should be consulted for up to date guidance.

As a possible alternative, caged rats may prove an effective lure for wild brown rats. This has **not been extensively field tested**, but is a promising field of research. **Seek further advice:** the risks of the rat escaping must be managed effectively and there will be **animal welfare considerations** regarding the use of caged animals. There is evidence to suggest this method doesn't work for black rats, so only consider using if you know only brown rats are present.

The following decision tree procedures are designed to help you manage potential incursions promptly and effectively, however they can be **guides only** as so much depends on island circumstances. This is why independent review is so important. The general course of action is:

1. A sighting is reported
2. The person who sighted the rodent is interviewed as soon as possible
3. The location of the sighting is visited (preferably with the observer) and assessed
4. Any further evidence is collected and, if necessary, sent to experts
5. The sighting is considered either **uncertain** or **probable/confirmed**
6. Uncertain sightings trigger a monitoring response
7. Probable & confirmed sightings trigger incursion response involving traps and rodenticide
8. All sightings and follow up actions are recorded in the biosecurity log

If rodent evidence is found:

1. If there is any doubt about the evidence, the location where the evidence was found is assessed
2. Any further evidence is collected and, if necessary, sent to experts
3. The evidence is considered either uncertain or probable/confirmed rodent sign
4. Uncertain evidence triggers a monitoring response
5. Probable & confirmed evidence triggers incursion response involving traps and rodenticide
6. All evidence and follow up actions are recorded in the biosecurity log

If there is a **shipwreck**, the area is immediately **considered as a probable/confirmed incursion and triggers an incursion response**. Consider working with maritime authorities who get involved in the shipwreck response to get more information about the level of risk e.g. if salvage experts are going on board the vessel they could be trained to look for rodent sign in the galley. Knowing the cargo and the prospects for the ship breaking up could also forewarn your response.

The speed of a response is crucial. For a probable or confirmed incursion, you want a team on the island ready to deploy bait/set traps/bolster the grid **within 48 hours**. For this to be possible, the mechanisms for responding to a reported sighting/sign find must be slick and lines of responsibility need to be clear. Transport arrangements should be in place and all equipment ready for loading, if not stored on the island. As UK surveillance strategies are limited to detecting incursion events (by themselves they cannot deal with an incursion), it is even more imperative that plans for incursion response are in place and people are ready to respond immediately.

Where there is already a network of stations in place on the island, use it as the basis for the response. It may need to be bolstered – e.g. if rodent sign is discovered on a large island in an area where there is no grid or only a sparse grid. Speed is of the essence. A sparse but extensive network covering as much of the island as possible is probably better if a grid has to be established than a dense grid in a small area. 1 to 2 devices per ha targeting preferred habitat is sufficient – it doesn't need to be an exact grid because invading rodents are likely to travel. Cover all major habitat types, but focus on preferred sites and known invasion sites. If a grid is already established, you may have time to reduce the grid size around the area of the sighting/evidence.

Place traps around the area of the sighting/evidence where there is plenty of natural cover and where rodents are likely to be active (e.g. alongside large rocks or walls, around the base of trees, under logs, overhanging vegetation, and under buildings). Traps can be baited with a mixture of peanut butter and rolled oats for an easy, durable bait which can be stored as part of the Incursion Response Kit. Tracks are used by invading brown rats and mice. Brown rats tend to be coastal foragers while black rats might prefer interior forest and may avoid tracks.

Having a Rodent Incursion Kit stocked is crucial to preparedness. Some items in the Incursion Response Kit will need to be replaced periodically even if not used (*). An annual inspection of the kit is highly recommended. The contents of the kit will depend on the characteristics of your island, but a starter list is provided in Table A2

Table A1. Collecting and archiving surveillance evidence

| Evidence | Advice |
|---------------------------|---|
| Sightings | <ul style="list-style-type: none"> - Interview the person who made the sighting as soon as possible – preferably on the same day. Take account of their experience but do not judge a sighting on experience alone. The most important factors are how well they saw it, i.e. how close, how long, what visibility. <i>What made them think it was a rat/mouse?</i> - Ask open questions e.g. “tell me what you saw? how long did you observe it? What did it look like?” DO NOT ask leading questions e.g. “was it brown and about this big?” - Record or write <u>everything</u> down, including when the sighting took place, when the interview took place and who conducted the interview. - Ensure the exact location of the sighting is recorded, if necessary take the person back to the location where they saw the animal. - Always record the incident in the biosecurity log and check it against previous incident records. One vague sighting on its own may be dismissed but if you get a number of similar sightings in a similar area over time you may form a different conclusion. New techniques for identification may present themselves in the future which could allow the archived evidence to be reviewed. - Try to establish other evidence that supports or challenges the sighting (could it have been a vole or a shrew, or even a wren?). - Use a standard recording form to gather similar information from each sighting. |
| Droppings or feeding sign | <ul style="list-style-type: none"> - Photograph the evidence <i>in situ</i> where possible before disturbing it. If taking digital photographs, use high definition settings for at least some photos and provide a size comparator (e.g. coin, pen lid). - When retrieving evidence to take back, physically mark the spot and collect everything i.e. if there are 24 suspected rat droppings there pick up all 24 and take them back, not just one or two. - Take time to look around carefully for other sign such as tracks, hair, scratch marks etc. Remember you are not only looking for evidence of the suspected species, you’re also looking for evidence which may support an alternative explanation. - Label the evidence, including photos with detail on when /where /who. - If sending evidence to an expert for identification, think about the security of transporting it e.g. this evidence may be the crucial factor in a decision to spend thousands of pounds in a contingency response, so don’t save £5 by sending it in the post instead of by courier or other traceable/more secure transport system. - If the evidence is going to be difficult to identify, have more than one expert look at it independently to give their opinion. Ask each of them why they came to the conclusion they did and what other opportunities there may be to further verify this. - Always archive the evidence and record the incident in the biosecurity log. Reference it against previous incident records (see above). |
| Carcasses | <ul style="list-style-type: none"> - Photograph <i>in situ</i>. Preserve in alcohol or triple bag and freeze. Label the evidence with details on location, state, and who found it and when. If species cannot be determined (e.g. due to decomposition), consider gathering DNA evidence. |

Table A2. Rodent incursion kit contents

| Item |
|---|
| Reference Information - Consider having laminated copies |
| Biosecurity plan * |
| Map of island |
| Map and description of GPS locations of permanent monitoring devices / grid |
| Species identification material |
| Operating instructions (e.g. CPS, trail camera, traps, installing bait stations) |
| Contact details for experts * |
| Record Keeping |
| Waterproof notebooks |
| Copies of maps for note-making (incl. some laminated) |
| Pens/pencils |
| Vivid marker pens |
| GPS (loaded with locations of stations) and spare batteries* |
| Compass |
| Data sheets for recording activity at traps/tracking tunnels/monitoring stations |
| Flagging tape (at least two colours) |
| Specimen containers (jars, zip lock bags) & labels |
| 1 litre of 70% ethanol |
| Sharp knife or dissecting tools (e.g. scalpel, tweezers) |
| Digital camera and spare batteries* |
| 50m tape measure |
| Detection |
| Tracking cards*, ink* & tunnels |
| Bait for tracking tunnels - peanut butter/oats, pieces of coconut, etc * |
| Indicator baits - chocolate/peanut butter/coconut wax, soap, coconut, eggs, chocolate * |
| Trail camera(s) and spare batteries* |
| Headlamps/torches & spare batteries* |
| Eradication |
| Snap traps and covers with length of wire for each trap to attach to anchor-point. Mouse and rat-sized if both species a risk. |
| Bait for traps – e.g. peanut butter* and rolled oats* |
| Wire and bait stations – sufficient to create correct grid size across island, if required |
| Second Generation Rodenticide* - replace every couple of years: has limited shelf-life |
| Self-sealing bags |
| Disposable gloves* for handling baits, traps or dead animals |
| Tools e.g. hammers, spades, pliers, nails, thin wire, thicker wire |
| First Aid kit including blankets* |
| Boat & safety gear* |
| Rope access gear* |
| Two means of long-distance communications – two-way radio and/or satellite phone and/or emergency locator beacons, and spare batteries* or means to charge these. |
| Personal protective equipment |
| Tent and sleeping equipment (if no accommodation available on island) |
| Water* and cooking implements (take fresh supplies of food and water as well) |
| Generator and fuel (if no electricity on island) |
| Rodent-proof and waterproof containers for all equipment to be packed in |
| * Replaced periodically even if not used |

Table A3. Interview guidelines for sightings

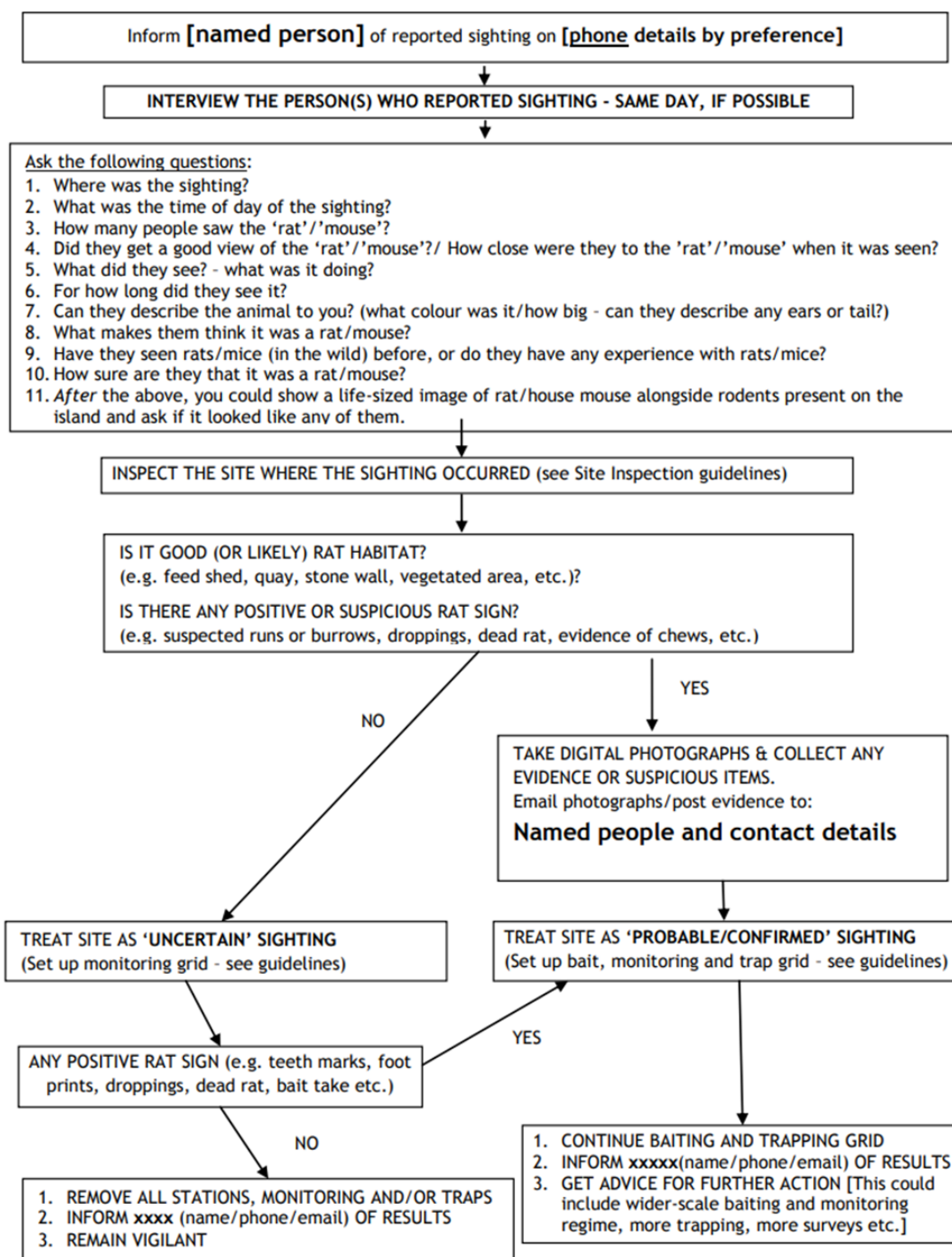


Table A4. Interview Recording Sheet for reported sightings

| Interview Recording Sheet | | | | | |
|---|--------------------|------------|--|--------|-------|
| Name of person reporting sighting: | | | Name of person who made sighting (if different) | | |
| Contact details of person reporting sighting | | | Contact of person who made sighting (if different) | | |
| Email: | | | Email: | | |
| Telephone: | | | Telephone: | | |
| Date of sighting: | Date of interview: | | Interviewer: | | |
| Overview of Action Taken: | | | | | |
| Circumstances (circle as appropriate): | | | | | |
| Live animal | Dead animal | Footprints | Droppings | Damage | Other |
| Time / conditions of sighting: | | | | | |
| Location of sighting - as much detail as possible: | | | | | |
| Any other observers? Names and contact details if known: | | | | | |
| Description of the Sighting | | | | | |
| What did you see? | | | | | |
| Can you describe the animal? | | | | | |
| What was it doing? | | | | | |
| How long did you observe it for? | | | | | |
| How close were you to it? | | | | | |
| Have you seen mice/rats in the wild before / Do you have any experience with mice/rats? | | | | | |
| What makes you think it was a rat/mouse? | | | | | |
| How sure are you that it was a rat/mouse? | | | | | |
| Does the observer wish to be notified of outcome of the monitoring? | | | | | |
| [Inform them that will take at least six weeks] | | | | | |



Scaled, but not life size, from Bell *et al.* 2014

Figure A1. Image of brown rat (top) compared to house mouse (bottom left) and Scilly shrew (bottom right)

Table A5. Site inspection guidelines for reported sightings

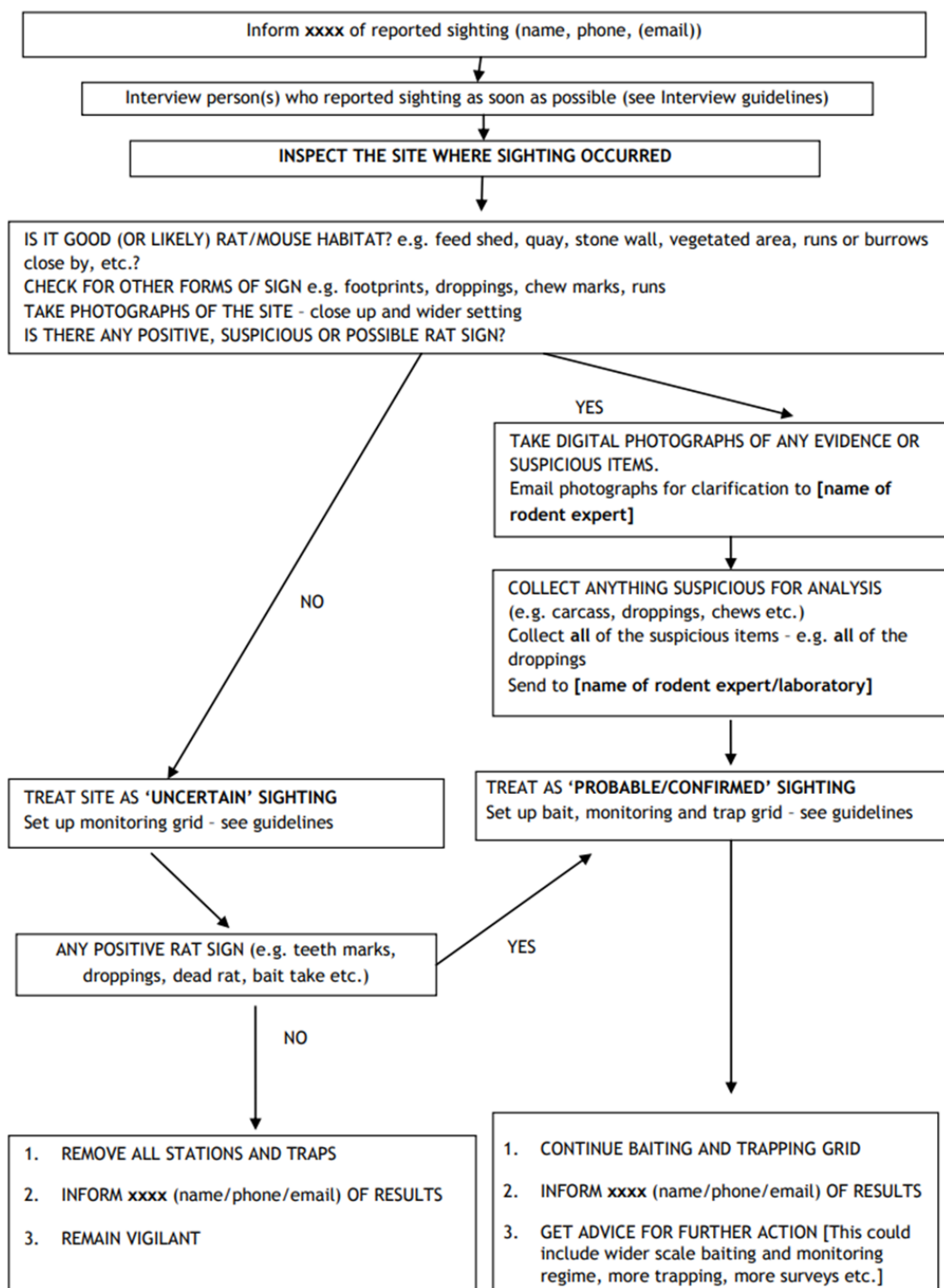


Table A6. Guidelines for “uncertain” sightings/ evidence

Guidelines for “uncertain” sightings/ evidence

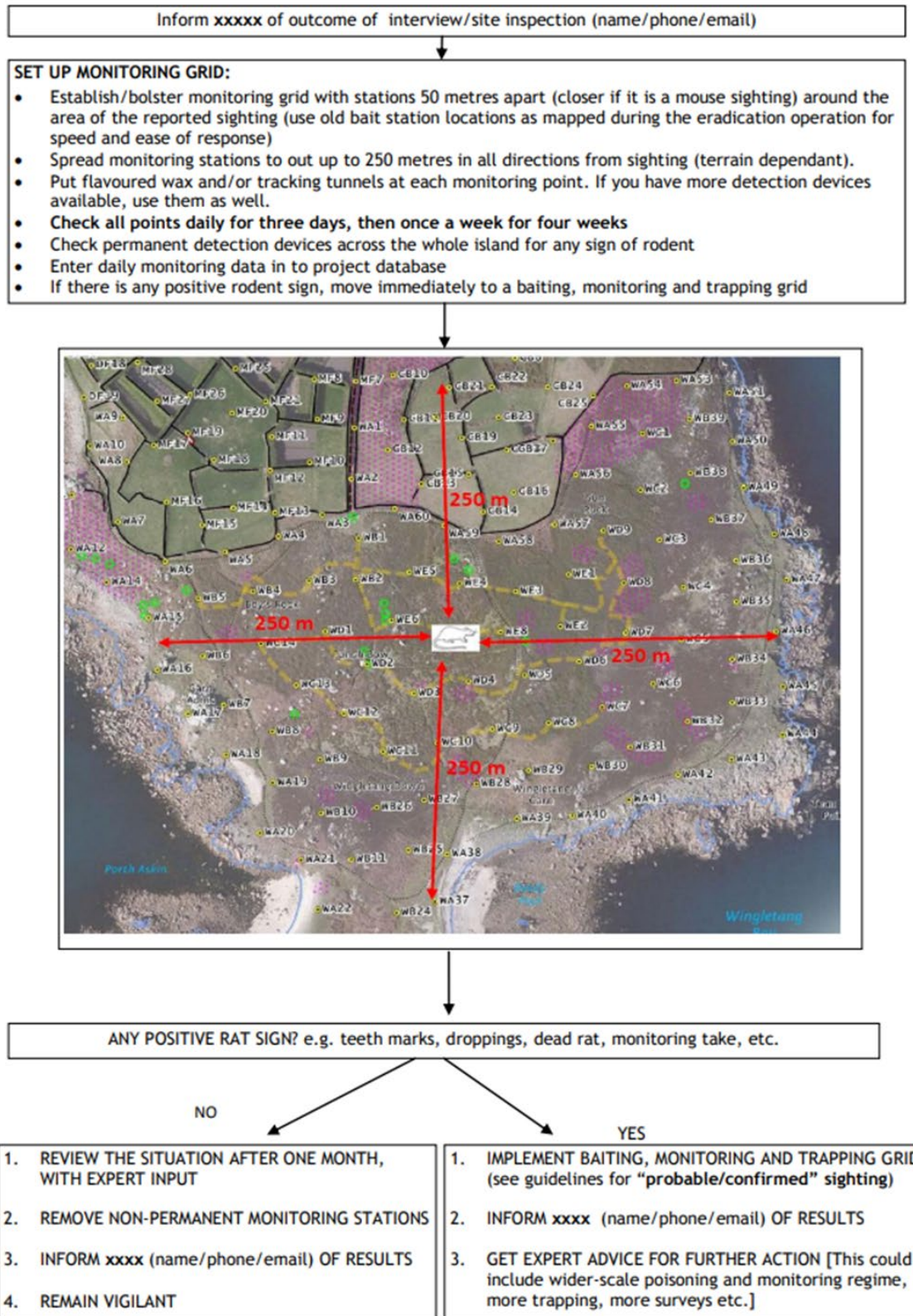


Table A7. Guidelines for “probable/confirmed” sightings/evidence and shipwrecks

Guidelines for “probable/confirmed” sightings/evidence and shipwrecks

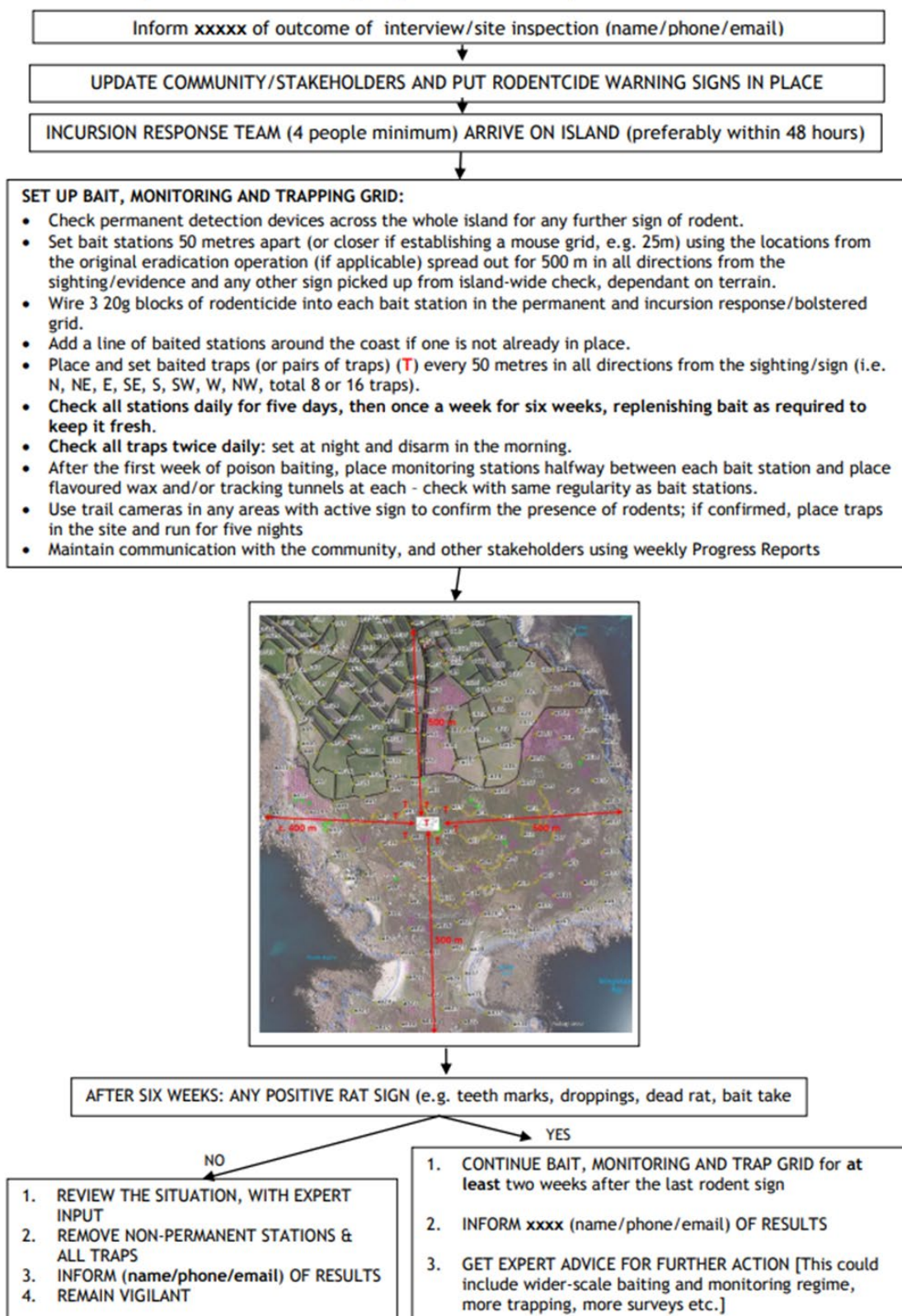


Table A8. Incursion response bait take form

| Date | | | Date | | |
|---------------|------------|---|---------------|------------|---|
| 1/1/14 | | | 2/1/14 | | |
| Surveyor | | | Surveyor | | |
| Sophie Thomas | | | Sophie Thomas | | |
| Station | Bait Taken | Notes | Station | Bait taken | Notes |
| A1 | 2 blocks | Rat droppings found (all removed) | A1 | 0 blocks | Bait in good condition |
| A2 | 0.5 block | Suspected crow interference. Block replaced | A2 | 0.25 block | Block collected for tooth mark identification |
| A3 | 0 blocks | | A3 | 0 blocks | bait replaced as damp around edges |
| A4 | | | A4 | | |
| A5 | | | A5 | | |
| A6 | | | A6 | | |
| A7 | | | A7 | | |
| A8 | | | A8 | | |
| A9 | | | A9 | | |
| A10 | | | A10 | | |
| A11 | | | A11 | | |
| A12 | | | A12 | | |
| A13 | | | A13 | | |
| B1 | | | B1 | | |
| B2 | | | B2 | | |
| B3 | | | B3 | | |
| B4 | | | B4 | | |
| B5 | | | B5 | | |
| B6 | | | B6 | | |
| B7 | | | B7 | | |
| B8 | | | B8 | | |
| C1 | | | C1 | | |

Table A9. Biosecurity Incident Log Example

| Date | Recorder: Name/ Contact Details | Incident Description | Response/Action Taken | Outcome | Additional Information |
|---------|--|--|--|---|---|
| 12/3/14 | Sophie Thomas Sophie.thomas @rspb.org.uk [Redacted] | Rat droppings found on 'Brenda' boat by visitor <i>en route</i> to island | Boat did not land on island – returned to port. Full search conducted of vessel and cargo. Baited and covered traps placed on board. ST discussed tighter quarantine measures for the boat with owner and provided refresher info on rat sign. <u>Boat had recently come out of winter storage.</u> | NEAR MISS No rat found. Assumed it left boat after being disturbed. Boat to obtain rodent-free certification next spring before being launched. Owner committed to checking for sign. | Contact details for 'Brenda' owner, [Redacted] [Redacted] |
| 1/5/14 | Sophie Thomas Sophie.thomas @rspb.org.uk [Redacted] | Member of public [Redacted] reported rat sighting at grid reference SU12341234 | ST interviewed [Redacted] on same day and together visited location of sighting. Considered reliability of report to be poor (middle of day, middle of field), but instigated daily monitoring of surveillance grid 250m in each direction from sighting for four weeks, without further sign. Instigated one island wide check of all permanent surveillance stations | No confirmed rat sign. Regular surveillance checking resumed. Assumed False alarm | (Add hyperlink to completed interview form for this incident) |
| 3/6/14 | [Redacted] [Redacted] | Member of public [Redacted] reported rat sighting at grid reference SU14371398 | BJ interviewed [Redacted] following day and visited location of sighting alone following detailed description. Considered reliability of report to be poor, but instigated daily monitoring of surveillance grid 250m in each direction from sighting for four weeks, without further sign. Instigated one island wide check of all permanent surveillance stations | No confirmed rat sign. Regular surveillance checking resumed. Assumed False alarm | (Add hyperlink to completed interview form for this incident) |

| Date | Recorder: Name/ Contact Details | Incident Description | Response/Action Taken | Outcome | Additional Information |
|--------|------------------------------------|--|--|---|---|
| 9/8/14 | [Redacted] | Member of public [Redacted] reported rat sighting at grid reference SU12381235 | BJ interviewed [Redacted] same day and together visited location of sighting. Considered reliability of report to be poor, but noted almost identical location to that of 1.5.14 so instigated daily monitoring of surveillance grid 250m in each direction from sighting for four weeks and brought in additional detection methods (cameras and tracking tunnels baited with peanut butter). Instigated island wide check of all permanent surveillance stations. No sign of rats found. | No confirmed rat sign. Regular surveillance checking resumed. Assumed False alarm , but extra surveillance (camera) left in place around sighting | (Add hyperlink to completed interview form for this incident) |

B Examples of Biosecurity Log Sheets

Table B1. Biosecurity log sheet example - Incoming vessels

| Vessel Name | Call Sign | Skipper Name & Contact Details | Arrival Date | Biosecurity Information Sent to Vessel | Maintenance Log Received & Approved | Pre-Embarkation Checks Complete (Skipper to Sign) | Pre-arrival Checks Completed (Skipper to Sign) | Checks on Arrival Completed (Biosecurity Mgr to Sign) | Further Action Required |
|-------------|-----------|--------------------------------|--------------|--|-------------------------------------|---|--|---|-------------------------|
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Table B2. Biosecurity Log Sheet example– Rodent checks of bait stations (wax blocks)

| Date | Location (e.g. Pier, Storage Area etc) | Bait Station Number | Signs of Rodent activity (e.g. Tooth Marks in Wax) | Follow up Action Required (Y/N) |
|------|--|---------------------|--|---------------------------------|
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C Workers Pre-Travel Biosecurity Information

The following biosecurity information should be emailed to all staff and workers prior to travel to Fair Isle:

Fair Isle has several designations due to the international importance of its natural and cultural heritage. It is important to avoid introducing any animal or plant material that could compromise this ecosystem. Below are actions that support the Biosecurity Management Plan for the project and must be followed when packing personal baggage for travel to Fair Isle:

- All clothing should be washed to remove any seeds and soil.
- Seeds and organic matter should be removed by hand from inside bags and any equipment that cannot be washed. Particular attention should be paid to removing seeds from Velcro.
- Ensure all footwear has been thoroughly washed to remove any soil and other organic matter.
- Pack bags in a clean area to reduce the chances of accidentally getting seeds or soil on clean items.
- Ensure all zips and openings are closed to reduce the risk of insects crawling into bags.
- If boarding a vessel, do not leave luggage unattended on the port side.
- If bringing food, ensure that it is kept in a rodent proof container. Also ensure any rubbish is kept in a rodent proof container.

This information should be regularly reviewed and adapted to incorporate any changes in Government guidance, including potential access restrictions and advice related to avian influenza.

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