

BIOSECURITY PLAN for the Port Edgar Tern Raft

Incorporating Prevention, Surveillance and Incursion Response

[Redacted]

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1. SITE DESCRIPTION AND BIOSECURITY RISKS

This Biosecurity Plan is aimed at preventing predatory invasive non-native mammals from becoming established on the Port Edgar tern raft. The raft was installed in April 2018 and in its first year has supported over 10 pairs of common terns, who have fledged at least 10 young birds. It has an area of 64m² and is situated only 60 m from the shore (see Figure 1), making it vulnerable to invasion from a number of predatory non-native mammal species, being within the swimming distance of house mice, black rats, brown rats and mink. Of these species, the most likely to be present in the surrounding area, and to swim to the raft is the brown rat *Rattus norvegicus*.

Figure 1: The location of the Port Edgar tern raft, within Port Edgar Marina, Edinburgh



This Plan is intended for use by the managers of the raft to inform routine surveillance activities, to provide necessary information for a rapid response in case of detecting invasive mammals, and to provide information for the supporting staff who may advise on any rapid response activities required.

Simple, routine biosecurity measures will protect birds nesting on the raft by detecting non-native predators and removing them before they have a chance to cause significant damage. This surveillance, coupled with a clear and effective incursion response plan, ready to be put into effect at short notice, will maximise the chances of the raft staying free of non-native predatory mammals and offer the best protection to the birds nesting on it. The methods described in this plan are based on the RSPB's *Current Recommended Procedures for UK (bait station) rodent eradication projects* (Thomas, Varnham & Havery 2017), in particular annexes 3 and 4, which are in turn based on international best practice.

Table 1: Invasive non-native species at risk of arrival on the raft

Invasive species	Description of potential impacts	Impact Severity	Impact likelihood	Overall risk (severity x likelihood)
Brown rat <i>Rattus norvegicus</i>	Predation of adult terns, chicks and eggs, as well as chicks and eggs of larger species	High	High	High
Black rat <i>Rattus rattus</i>	Predation of adult terns, chicks and eggs, as well as chicks and eggs of larger species	High	Low	Low
House mouse <i>Mus domesticus</i>	Potential predation of chicks	Medium	Low	Low
American mink <i>Neovison vison</i>	Predation of adult birds, chicks and eggs of all ground nesting species	High	Low	Low

2. PATHWAYS

The only realistic pathway by which invasive non-native mammals could reach the tern raft is by swimming from the quayside at Port Edgar. There is a theoretical risk that mammals could be deliberately introduced to the raft, but this is considered very unlikely.

3. PREVENTION

Preventing INNS from becoming established is by far the cheapest and easiest solution as well as the one likely to cause the least damage to native species. However, the two possible pathways identified above cannot be actively preventing. Instead, the raft's managers must rely on looking for, and if necessary removing, any non-native mammals which may be present.

4. ROUTINE SURVEILLANCE

In order to protect the nesting birds, it is only necessary that the raft is free of invasive non-native mammals during the breeding season (May – August). The construction of the raft prevents the incursion in the first place with the main deck being wider than the floats. Additional solution is to have a monitoring station in place on the raft. Surveillance tools, such as non-toxic wax monitoring blocks and ink tracking cards (designed to detect teeth marks and footprints respectively), should be put into the station in the run up to the breeding season and checked two weeks later. These tools are suitable for detecting the full range of species listed in the site description (mink, unlike rats and mice, are unlikely to leave teeth marks in the wax blocks, but all species can be expected to leave foot prints on the ink tracking cards).

5. INCURSION RESPONSE

If signs of invasive mammals are found after checking the monitoring station, then appropriate action should be taken. If signs of rodents are found then the monitoring station should be stocked with rodenticide bait (note that anyone buying or using rodenticide sold for professional use must complete an appropriate one-day course – see <https://www.thinkwildlife.org/training-certification/> for a list of approved courses). Consider the impacts of rodenticide use on non-target species carefully. Bait should only be set inside bait stations and should be checked regularly. However, the risks to non-target species on the raft are likely to be extremely low. If signs of mink are found, take advice from colleagues in Reserves Ecology about mink trapping.

6. REFERENCES

Thomas, S., Varnham, K. & Havery S. (2017). *Current Recommended Procedures for UK (bait station) rodent eradication projects. (Version 3.0)* Royal Society for the Protection of Birds, Sandy, Bedfordshire. <http://www.nonnativespecies.org/index.cfm?pageid=613> (Annexes 3 and 4 are also available via this link)

