BIOSECURITY FOR LIFE

A BRIGHTER FUTURE FOR SEABIRDS:

Developing biosecurity plans and implementing measures on the UK's internationally important seabird island Special Protection Areas

ACKNOWLEDGEMENTS

Biosecurity requires collaboration. The UK's globally important seabird islands are better protected, thanks to the support, hard work and commitment of many.

The project would like to firstly thank its funders: EU LIFE, NatureScot, Natural England, the Department of Agriculture, Environment and Rural Affairs (DAERA), the Department for Environment, Food and Rural Affairs (DEFRA), Natural Resources Wales, and the Scottish Nature Restoration Fund (NRF).

Thank you for the vision and commitment of the partners: the RSPB, the National Trust, and the National Trust for Scotland. The Steering Group and staff of all organisations supported, guided, and collaborated with the Biosecurity for LIFE project team to enable their work.

We are grateful for the hard work and commitment of the project team, the project managers, and biosecurity officers who brought the vision to life. Their expertise brought people together, helped communicate the issues and inspired people to take action for seabirds.

And finally, thank you to the thousands of people living on and visiting our seabird islands, who took time to listen, participate and help protect seabirds.

Atlantic Puffin, Isle of May.
Photo credit: Andy Hay (rspb-images.com)

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BIOSECURITY FOR LIFE

THE BIOSECURITY FOR LIFE PROJECT

The "Biosecurity for LIFE project: safeguarding the UK's globally important seabird Special Protection Area (SPA) islands from invasive alien species [LIFE17 GIE/UK/000572]" is a partnership project between the RSPB, National Trust and National Trust for Scotland.

The £1 million project was awarded funding from EU LIFE, with co-financing from NatureScot, Natural England, and the Department of Agriculture, Environment and Rural Affairs (DAERA). Additional funding from the Department for Environment, Food and Rural Affairs (DEFRA), Natural Resources Wales, and the Scottish Nature Restoration Fund (NRF) was secured during the project.

The five-year project ran from August 2018 to July 2023 and worked with a wide range of stakeholders (island communities, businesses, managers, landowners, conservation organisations and statutory bodies) to develop UK capacity to plan and implement biosecurity measures to safeguard seabird islands against the threat of invasive non-native mammalian predators arriving and becoming established. Through training, awareness raising and practical on-the-ground conservation work, the project aimed to secure a future for the UK's seabird islands free from this threat of predation.

SUMMARY

Collaboration between island communities, businesses, managers, landowners, conservation organisations and statutory bodies has vastly improved biosecurity on the UK's seabird Special Protection Area (SPA) islands.

Globally significant seabird populations are now better protected against the threat of invasive non-native mammalian predators.

BACKGROUND

The UK is home to globally important populations of seabirds, many of which are threatened. Seabirds face many challenges at sea, such as climate change, being caught in fishing gear (bycatch), and plastic pollution of the oceans. The major threat they face on land is invasive non-native mammalian predators. These invasive predators, including rats, mice, stoats, hedgehogs, mink, and feral cats, are not naturally found on (native to) the islands where seabirds breed. Adult birds, chicks, and eggs are very vulnerable to predation from them. Measures can be put in place to try to stop these invasive predators from getting to these seabird islands; this is called 'biosecurity'.

The most important UK seabird colonies are found on islands that have been recognised as Special Protection Areas (SPAs) and are historically free of invasive predators. Some seabirds breeding in the UK are found exclusively on these predator-free islands. The Biosecurity for LIFE project aimed to put in place biosecurity measures across all 42 of these SPA islands across the UK. At the start of the project, many of these islands did not have biosecurity measures in place and awareness about the threat posed to breeding seabirds by invasive predators was generally low amongst island communities and visitors. The project has worked with non-governmental organisations (NGOs), government agencies, landowners, communities and others to put in place biosecurity measures on these islands.

The project vision was to see a measurable improvement in biosecurity practice across all of the 42 UK SPA islands designated for breeding seabirds, and more importantly for this improvement to be maintained.

Biosecurity: the practice of protecting places from the threats to wildlife posed by introducing new diseases or types of plants or animals that do not naturally occur there.

Incursion: when an invasive non-native mammalian predator has recently spread to an island but has not yet established a population. An incursion response is the planned actions taken when it is thought an invasive predator has reached an island.

BENEFITS OF A SEABIRD ISLAND BIOSECURITY PLAN

A biosecurity plan will identify the risks posed by new species reaching the island, the means by which a new species could reach the island (the 'pathways'), and identify the measures needed to reduce these risks.
A good biosecurity plan will guide the key stakeholders in steps to take to implement these measures.

The plan will clearly set out what surveillance tools are in use, where they are located on the island, and whose responsibility it is to check those tools. The plan also sets out what needs to happen in the event of a biosecurity incident such as the sighting or detection of an invasive predator on an island. This is a potential **incursion** and a biosecurity plan will contain a response plan that sets out what equipment needs to be deployed where, how and by whom. Part of the process of writing biosecurity plans is securing all the necessary permissions and equipment needed in an incursion response. This 'incursion response readiness' is a key component of effective biosecurity.

A biosecurity plan and good record keeping relating to the biosecurity actions, checks and incidents will also help to identify where biosecurity can be improved. It helps those responsible for biosecurity on an island decide what resources are needed to maintain good levels of biosecurity, and what the priority actions are.

BIOSECURITY GUIDANCE AND RESOURCES

Based on the UK rodent biosecurity best practice guidelines, the project developed a Biosecurity Plan template that can be used to create dedicated and site-specific plans for each seabird island. With input from biosecurity experts, island managers, volunteers and communities, the project also created resources to help those carrying out surveillance checks or incursion responses.

DEVELOPING BIOSECURITY PLANS

It is important that biosecurity plans are fit for purpose and the checks and measures that are adopted are manageable, and effective.

Roles and responsibilities need to be carefully defined and allocated so that:

- surveillance checks are carried out in a timely manner.
- reported incursions can be responded to rapidly; everyone involved knows their role.
- biosecurity measures can be reviewed and improved or adjusted as needed.

Between 2019 and 2023 Biosecurity for LIFE worked with island owners and managers, volunteers, communities and boat operators to develop biosecurity plans, checks and measures for the UK's 42 internationally important seabird islands. At the outset, although eight sites did have some biosecurity measures in place, only two of these islands or island groups had comprehensive measures in place, protecting only a fraction of our seabird populations.

Island owners and managers attending a training session. Photo credit: Laura Bambini

> *Yesterday's meeting has focused my mind on our plans. I have quite a long to-do list but the template is really helpful—feels like I've achieved something already!*
>
> **"** ***Island Manager***

The project supported the development of biosecurity plans in different ways, depending on the needs of the site and the availability of island owners, managers and/or community members with an interest in getting involved in biosecurity. A review of biosecurity measures in place across the UK's seabird islands at the start of the project provided recommendations to guide this work.

On eight inhabited islands, the project officers worked with communities to co-develop biosecurity plans that would be fit for purpose, with responsibilities allocated to members of the community. Biosecurity discussions and planning took place in community events (drop-in sessions, biosecurity talks, workshops) and on a one-to-one basis to design practicable surveillance checks for each island.

On 32 SPA islands or island groups, the project worked with island managers and owners to write new biosecurity plans or to review existing ones for these islands. One biosecurity plan writing workshop for island managers and rangers with biosecurity responsibilities was held in Edinburgh in February 2020 before the project shifted to providing online support and training on a one-to-one basis in response to the Covid-19 pandemic.

It took 6-24 months to complete each biosecurity plan, including finding and training people for dedicated biosecurity roles and responsibilities.

The project provided training on the use of different surveillance tools, what mammal signs to look for and how to respond to reported incursions. A number of people were trained and certified in the safe handling and outdoor use of rodenticides.

A conservation detection dog carrying out surveillance checks on a seabird island. Photo credit: Lisa Morgan

CONSERVATION DETECTION DOGS AND BIOSECURITY

Dogs have an incredibly well-developed ability to distinguish and locate specific smells – an ability that has been harnessed for the benefit of policing, human health, and wildlife management for decades. Conservation detection dogs are used around the world to assist in eradications and biosecurity on islands, but only recently has this been tried in the UK. Biosecurity for LIFE trained two conservation detection dog handlers and one dog (Jinx, pictured) to help with efforts to keep the UK's seabird islands rat-free. The project wanted to trial the use of dogs for this work, and to share the lessons learnt.

In conversation at a community drop-in session. Photo credit: Jaclyn Pearson

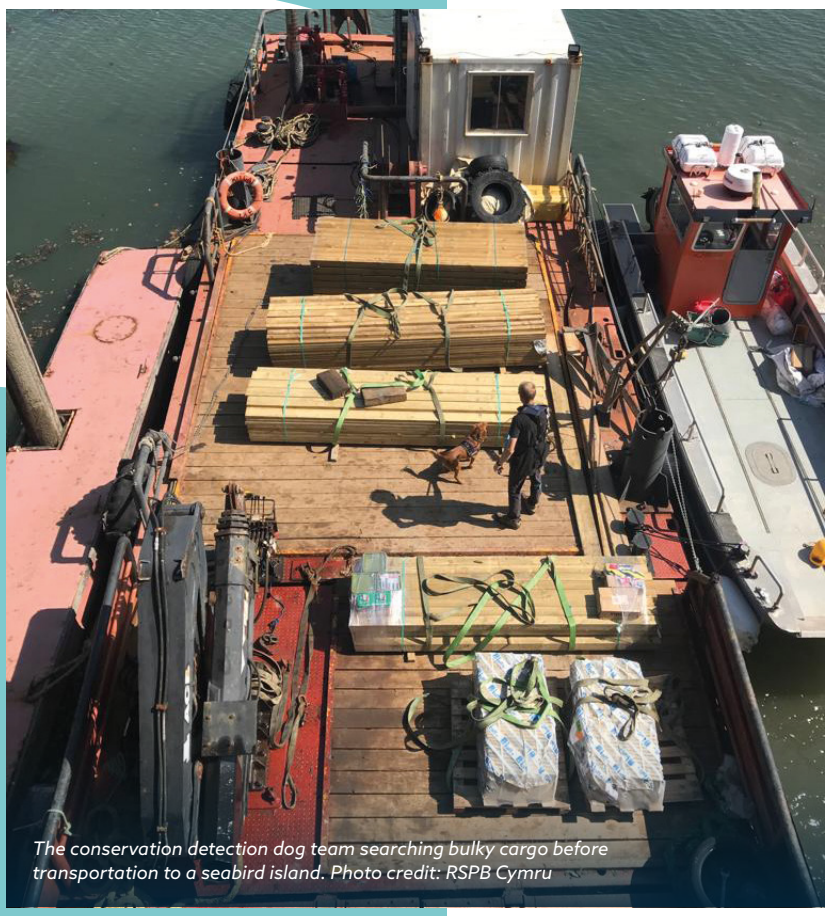
> *The course was enthusiastically presented in short chunks by knowledgeable staff, which kept me engaged through the whole day. Meeting staff from other organisations/ islands was also very useful.*
>
> **"** ***Island Ranger***

IMPLEMENTING BIOSECURITY PLANS

CHECKING CARGO, BAGGAGE AND VESSELS FOR STOWAWAYS (PREVENTION)

Many of the UK's internationally important seabird islands are beyond the known swimming distance of terrestrial mammals like rats, stoats and hedgehogs. Cats are unlikely to attempt a swim across the sea, and the most likely way these potential seabird predators will reach an island is via human-assisted pathways. Only the American mink is likely to swim distances beyond 5 kilometres. Therefore quarantine checks on all goods and vessels prior to departure to seabird islands is *the most effective way* to reduce the threat of mammalian predators to seabirds.

The project officers worked with companies operating visitor boats and ferries travelling to seabird islands in Northern Ireland, Wales, Scotland and England to provide training and guidance on biosecurity checks on goods, cargo and vessels. A conservation detection dog team, trained through the project, carried out checks on bulky materials before they were taken to seabird islands – construction materials and livestock feed in particular are known to pose a high risk of harbouring invasive predators and should always be checked thoroughly. Routine vessel inspections can give confidence that no stowaways are on board.



The conservation detection dog team searching bulky cargo before transportation to a seabird island. Photo credit: RSPB Cymru

> *The fact that we can utilise a biosecurity trained detection dog to search all our vessels is incredible and very much needed. We could not do as good a job as the detection dog.*
>
> **Manager,** *Boat Tour Operator*

INSTALLING AND CHECKING SURVEILLANCE TOOLS (EARLY DETECTION)

The biosecurity officers helped set up biosecurity surveillance stations at locations identified in the biosecurity plan for each island. These surveillance stations have one or more detection devices, such as a trail camera or a tracking tunnel to record footage or footprints of mammals, or a rodent 'motel' or bait station containing a block of non-toxic candlewax flavoured with cocoa or peanut butter. These structures provide shelter for rodents and they regard the wax as a food source, leaving identifiable tooth marks as they nibble it. Regular checks of the camera footage, tracking tunnels and wax blocks are essential for helping with the early detection of incursions.

Tracking tunnel on Sheep Island. Photo credit:Tessa Coledale

We know that rats can inhabit a territory as small as one hectare, and a surveillance station should be located in each potential territory (forming a network at the density of one station per hectare) to maximise the chances of an animal coming across it. However, the large size of some islands or the lack of staff/volunteer resource to check that many stations meant that such comprehensive coverage wasn't always possible.

Trail camera on Sheep Island. Photo credit:Tessa Coledale

The surveillance stations were set up in easily accessible locations, targeting areas where any new arrival is likely to make landfall (jetties and other boat landing sites and beaches where storm debris accumulates), as well as areas offering food and shelter such as bird nesting areas, buildings and waste collection sites to which a new arrival is likely to be attracted. It is also important to maintain a spread of stations across the whole island (particularly coastal areas), to maximise the chance of detecting an animal that has moved away from its arrival site.

Surveillance station on Auskerry. Photo credit: Holly Paget-Brown

A volunteer being trained on the Isles of Scilly. Photo credit: Jaclyn Pearson

> *We've had great support from the project, by way of resources, training, and advice. We have had teaching sessions during staff inductions. Across the site we have wax block monitoring stations, which are checked regularly, and camera traps to capture potential rodent activity. The project has instilled good practice, provided resources, and raised awareness to help protect the Farne Islands.*
>
> **Farne Islands Area Ranger,** *National Trust*

An example of how a small number of surveillance stations (red dots) can target areas invasive predators are likely to arrive at (landing sites, beaches) and find food and shelter at (buildings, bird colonies etc.).

On inhabited islands, surveillance checks are carried out by one or more dedicated biosecurity volunteers, often with the support and help of the biosecurity officer. On islands where staff from a conservation organisation or agency are present year-round or at least for part of the year, surveillance checks have become part of day-to-day work plans and take place regularly.

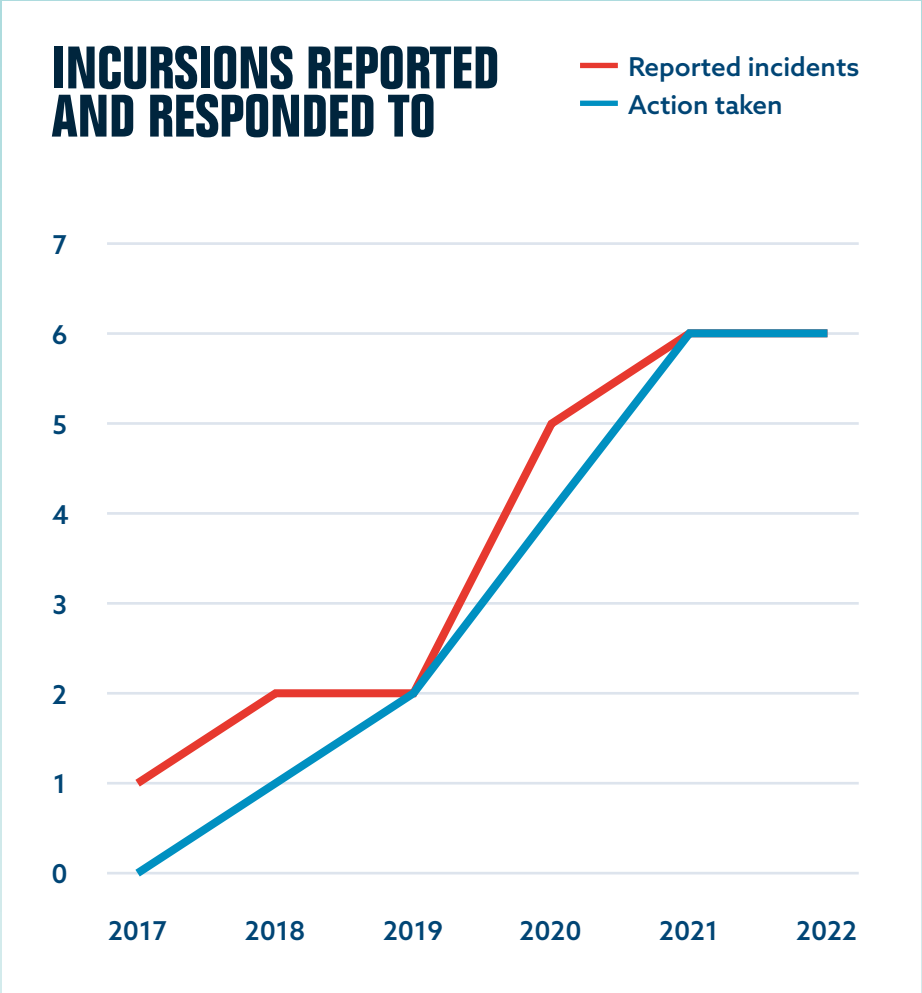
On some remote islands rarely accessed by anyone, checks are less frequent and carried out by those who do visit. The project has worked with lighthouse operators and bird ringers to train staff and volunteers, who will undertake surveillance checks on these islands during their annual trips. In the future, automated surveillance devices could be used on these islands.

RESPONDING TO INCURSIONS (RAPID RESPONSE)

When an incursion is suspected or confirmed, whether it is through signs picked up by the network of surveillance devices, by a conservation detection dog in a routine check, or a sighting reported by someone, a speedy response is required. The more time it takes to set out traps and/or to put out rodenticide, the further an invasive mammal can disperse on the island. This makes it harder to intercept before it has the opportunity to breed. At this point, it can be very difficult to stop an incursion and an established population may arise.

Through the project, volunteers and conservation organisation staff were trained to get teams response-ready and prepared for an incursion on an island. With the increased surveillance efforts on the UK's seabird islands, the number of reported incursions has been increasing year on year and the number of incursions responded to has also increased with the project's support and help.

The number of incursions reported and responded to during the project have increased, indicating that the awareness of biosecurity risk has increased, as has the capacity to respond.



TIPS FOR DEVELOPING BIOSECURITY PLANS

WHERE WE WERE SUCCESSFUL

Defining roles

- Getting the roles and responsibilities right is what makes a biosecurity plan work – tailoring measures to available resources is better than having a plan that cannot be implemented.

In-person training events

- In-person training events received positive feedback and site visits were welcomed by those who received them. Training and peer-to-peer support are essential requirements for biosecurity to work well: having confidence in the biosecurity plan and the surveillance tools in use makes the measures effective; sharing stories and case studies helps with motivation and demonstrates the importance of biosecurity.

Stakeholder sign-off

- Ensuring the plan has been approved and signed off by all relevant stakeholders for a specific site ensures an incursion response is carried out as rapidly as possible and therefore has the best chance of success. All the permissions needed to carry out a response should be in place beforehand.

Fit for purpose delivery

- Project officers explained that 'fit for purpose' surveillance tools and processes that can be readily maintained are always the better option. This gave confidence to stakeholders that it is better to have a few well-placed surveillance stations that are actively checked and maintained rather than many stations that are rarely looked at.

WHAT CHALLENGES WE FACED

Defining roles

- It took longer than planned to find people to take on biosecurity responsibilities. Biosecurity practices can take years to embed, and continued support is needed to ensure effective measures remain in place.

In-person training events

- The Covid-19 pandemic disrupted much of the face-to-face work of the project during 2020-21, which probably delayed the progress of many biosecurity plans. Examples from New Zealand and the feedback the project has received suggest that a mix of online and face-to-face training might work best.

Stakeholder sign-off

- There was an assumption that stakeholder support may be forthcoming quickly in the event of necessary surveillance and/or an incursion response. Biosecurity is still a relatively new concept in the UK for some stakeholders, so they were on their own learning journey to understand what was required.

Fit for purpose delivery

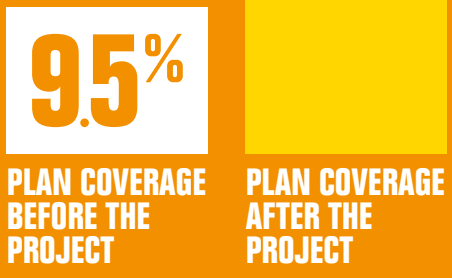
- There was an assumption from some stakeholders (particularly on larger islands with limited resources) that every island has to have a number and density of surveillance tools dictated by best practice. On many islands, the size of the island or limited availability of people to carry out biosecurity surveillance checks limits the stations that can be deployed.

CONCLUSION:

GLOBALLY IMPORTANT AND THREATENED SEABIRDS ARE NOW BETTER PROTECTED IN THE UK.

This project has measurably improved biosecurity in the UK. There has been an increase from 4 to 40 island areas covered by biosecurity plans, meaning 95% of the UK's seabird island Special Protection Areas now have plans in place. Island communities, owners and managers have a bespoke plan, enabling them to implement biosecurity. Globally important and threatened seabirds are now better protected in the UK.

This project has provided an online resource centre and learning for all island custodians to continue to develop their own planning and responses to keeping seabird islands safe from invasive non-native mammalian predators well into the future.



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