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BirdLife INTERNATIONAL

Island Restoration News:

Gough and Henderson

In 2020, the RSPB and our partners will launch an operation to eradicate the invasive non-native mice which threaten species like these Critically Endangered Tristan albatross with extinction *(M.Jones)*.

One of the most pristine environments left on earth...

The UK Overseas Territories (UKOTs) are home to biodiversity of global importance; indeed, an estimated 90% of biodiversity for which the UK is responsible is found in these far-flung islands, including more penguins than any other nation on earth and some of the world's largest colonies of albatross. Gough Island, part of Tristan da Cunha, located in the South Atlantic, hosts one of the world's greatest seabird colonies – over 10 million birds – for which it has been designated as a World Heritage Site.

Gough is described by UNESCO as "one of the most pristine environments left on earth". It is home to particularly spectacular and unique species, such as the Critically Endangered Tristan albatross, near endemic Atlantic petrels and the Gough bunting, a species with only around 500 breeding pairs and found on this 65sq km island alone. Yet even here, the impact of humans is ever more visible: invasive non-native mice, introduced some 200 years ago by sealers, are now ravaging these seabird populations.

In my short time in post as Chief Executive of the RSPB I have had the pleasure of learning about the amazing range of work on islands, both around the United Kingdom but also across many of the UKOTs, in which the RSPB is involved. I have been particularly struck by the threat invasive species pose to the birds on Gough Island. The statistics are shocking – at least 2 million chicks and eggs are lost to mice every year with chicks being literally eaten alive, often within hours of hatching. The only two British birds that are listed as Critically Endangered are found on Gough - and now the RSPB team on island has recorded the first video evidence of mice attacking adult birds. Seeing the footage of chicks and birds being attacked by invasive non-native mice is an image that will never leave me, and one that simply cannot be ignored. It is quite simply an environmental catastrophe. But it is one that can be fixed.

Island restoration continues to be successful around the world, such as on South Georgia in the UKOTs, and the RSPB has built up a wealth of experience in restoring islands, such as Lundy Island, Ramsey Island and St Agnes and Gugh around the UK. Because of what is happening, Gough has now been assessed as the third most important island in the world for urgent restoration. This is a UK responsibility, and I am proud to say that the RSPB is taking the lead in confronting this challenge. There is light at the end of the tunnel for our endangered species.

With the help of our international partners, Tristan da Cunha Government, the Department of Environment, Forestry and Fisheries South Africa, Island Conservation, BirdLife International, BirdLife South Africa, the Royal Zoological Society of Scotland, and supported by the UK Government, we will launch an operation to eradicate the mice from Gough in 2020. This will be the RSPB's largest ever single undertaking, and, while there is no absolute guarantee of success for what is a complex and demanding project, it is a shining example of the level of our ambition in reversing declines in nature around the world.

I am enormously grateful for all our supporters who have helped to fund this project so far – your commitment is allowing all the necessary preparations to proceed. But even now a substantial funding gap remains. The funding gap currently sits at £2.7 million. This funding is key to the final operational delivery of the Project, delivering the baiting team to the island including the four helicopters that are crucial for the operation to go ahead.

We are all becoming increasingly aware of the pressures on both our climate and our natural world and the need for both Governments and individuals to turn conversations into action. Back in 2012, the UK Government committed to providing the Overseas Territories' natural environments with protection to the highest international standards – and there is no territory more in need of this promise today than Gough Island. Individuals too all have a role to play in protecting our natural heritage –we can all contribute to ensuring these spectacular species will continue to grace our world into the future.

This newsletter is a chance for us to update you on our plans to restore this World Heritage Site next year and to highlight the value of this island. Gough Island is in danger, but we can reverse this. I am honoured to be part of the solution and I hope you will join me in helping to secure the future of one of our most precious environments. Together, we can do this.

Beccy Speight
Chief Executive, RSPB

Albatrosses, like this Tristan albatross on Gough Island, face threats both on land and at sea *(F.LeBouard)*

Invasive species amongst the top threats to seabirds

Seabirds are one of the most threatened groups of vertebrates in the world. Fisheries bycatch, oil spills and pollution are some of the most well known threats. But what more do we know?

From puffins in Scotland to penguins in the Antarctic and albatross throughout the Southern oceans, seabirds everywhere are in danger.

Although we've been aware of a number of threats for many years, only this year have the details, scale and priority of these threats been established. A global study on seabird threats was led by BirdLife International, with the British Antarctic Survey (BAS), the Centre for Environment, Fishery and Aquaculture Science (CEFAS), the University of Washington, and the Global Penguin Society.

The study looked at all 359 of the world's seabird species—110 of which are globally threatened. The study ranked threats by how many species each affects, as well as which threats have the biggest impact on the species population numbers.

The study identified four main drivers of seabird declines: **fisheries bycatch, invasive species, climate change and overfishing.**

For albatross, bycatch in fishing operations was the biggest threat, since adult mortality in long-lived species is catastrophic for long-term population survival. Climate change affected the greatest number of penguin species and for small petrels, invasive species were the most common problem.

Almost half of all seabirds are exposed to at least one driver of decline, meaning that even those species not yet globally threatened are likely to become so if nothing is done to tackle these problems.

20% of all seabirds are exposed to all of the major drivers of decline.

45% of seabirds are exposed to at least one of the main drivers of decline.

Invasive non-native mice are the biggest threat to species like this grey petrel on Gough *(M.Jones)*.

Adult seabirds now at risk from mice

Our on-island team observed adult albatrosses with wounds consistent with mice attacks earlier this year, and have now gathered indisputable evidence that mice are attacking adult seabirds.

A new and worrying threat to seabirds came to light this year as Chris and Michelle (from our current on-island team) and Jamie (from our previous team) published their observations of suspected mouse attacks on adult Tristan albatross and Atlantic yellow-nosed albatross on Gough Island, and on Northern giant petrel on South Africa's Marion Island.

Until now, house mice attacks on large adult seabirds have only been recorded on Midway Atoll in Hawaii. These new developments on Gough and Marion are deeply worrying. If this behaviour spreads quickly, as it did on Midway, or if it causes fatal injuries (as it does on Midway), this will dramatically accelerate the path to extinction for the highest risk species.

On Gough, three adult albatrosses were found with wounds on their rumps and backs. Even in the absence of firm evidence that these injuries were fatal, the observations suggested that mice can affect chick survival as they force adults to abandon their nests.

Since the study was published we have increased our monitoring of Atlantic yellow-nosed albatross nests and in the last few weeks received the first video evidence of mice attacking adult birds. The footage is available to view in this news report.

What would this mean for seabirds?

While attacks on seabird chicks are devastating Gough's unique species, the death of adults would accelerate population declines significantly.

Albatrosses and giant petrels are long-lived birds, with a lifespan up to 70 years. They do not start breeding until 7-12 years old and most birds die before they are old enough to breed. The breeding adults on Gough and Marion have survived the harsh weather and ferocious storms of the Southern Ocean for more than 10 years, and managed to avoid fishing fleets which can be a cause of significant mortality (see above). Mature adults can breed for 30 years or more, and are able to raise dozens of chicks in their lifetime. Whilst the loss of chicks is terrible and unsustainable for the species in the long term, the loss of just one of these breeding adults is ominous.

The situation on Gough and Marion islands is already dire and could get worse. Since the early 2000s when mouse predation was first suspected on both islands, we've seen haunting footage showing mice scalping chicks, and the estimates of total chicks lost to mice has now increased to millions each year.

In stark contrast to albatrosses, mice can breed from five weeks old, with large litter sizes and multiple litters in a single year. This means there is plenty of opportunity for new behaviours to develop. Once they do, these behaviours can be learned and spread rapidly through populations.

We must act now to save these seabirds before mice begin to routinely kill adult birds and push species ever faster towards extinction.

Atlantic yellow-nosed albatross and chick on Gough Island *(F.LeBouard)*

Species spotlight: Atlantic yellow-nosed albatross

The impact of mice on this species may have been underestimated in the past. New evidence shows this species, too, needs Gough to be restored urgently.

Key Facts

- The name 'yellow-nosed' comes from the distinctive yellow stripe on the species' bill. Chicks are not born with the stripe, but develop it at around 8 months old!
- Although not endemic to Gough, the island hosts the world's second largest population with around 5,000 breeding pairs here.
- Other than on Gough, the species breeds only on islands in the Tristan da Cunha archipelago.
- The yellow-nosed albatrosses are part of the long-term monitoring study on Gough which started in the early 1980's.
- The yellow-nosed is a soarer — able to fly for miles without flapping their wings.
- They have a gland above their nasal area that excretes a saline solution — getting rid of the excess salt swallowed whilst foraging at sea!
- This species can live for up to 60 years.

Breeding Biology

Atlantic yellow-nosed albatross mate for life and produce roughly one chick every other year. After foraging out at sea in the non-breeding season they return to land to form colonies during the breeding season.

They start to lay their eggs on Gough in September, which hatch in November. Adults raise their young together, taking it in turns to incubate the egg and look after the young whilst the other goes fishing until their chick fledges the following April/May.

Once fledged, the chick will go out to sea, not returning to land again for up to 5 years!

Conservation

This species is classified as Endangered by the International Union on the Conservation of Nature (IUCN), and the bird's ongoing decline is largely thought to be due to long-line fisheries. However, evidence is mounting that they are at considerable risk from attacks by the mice on Gough, as well.

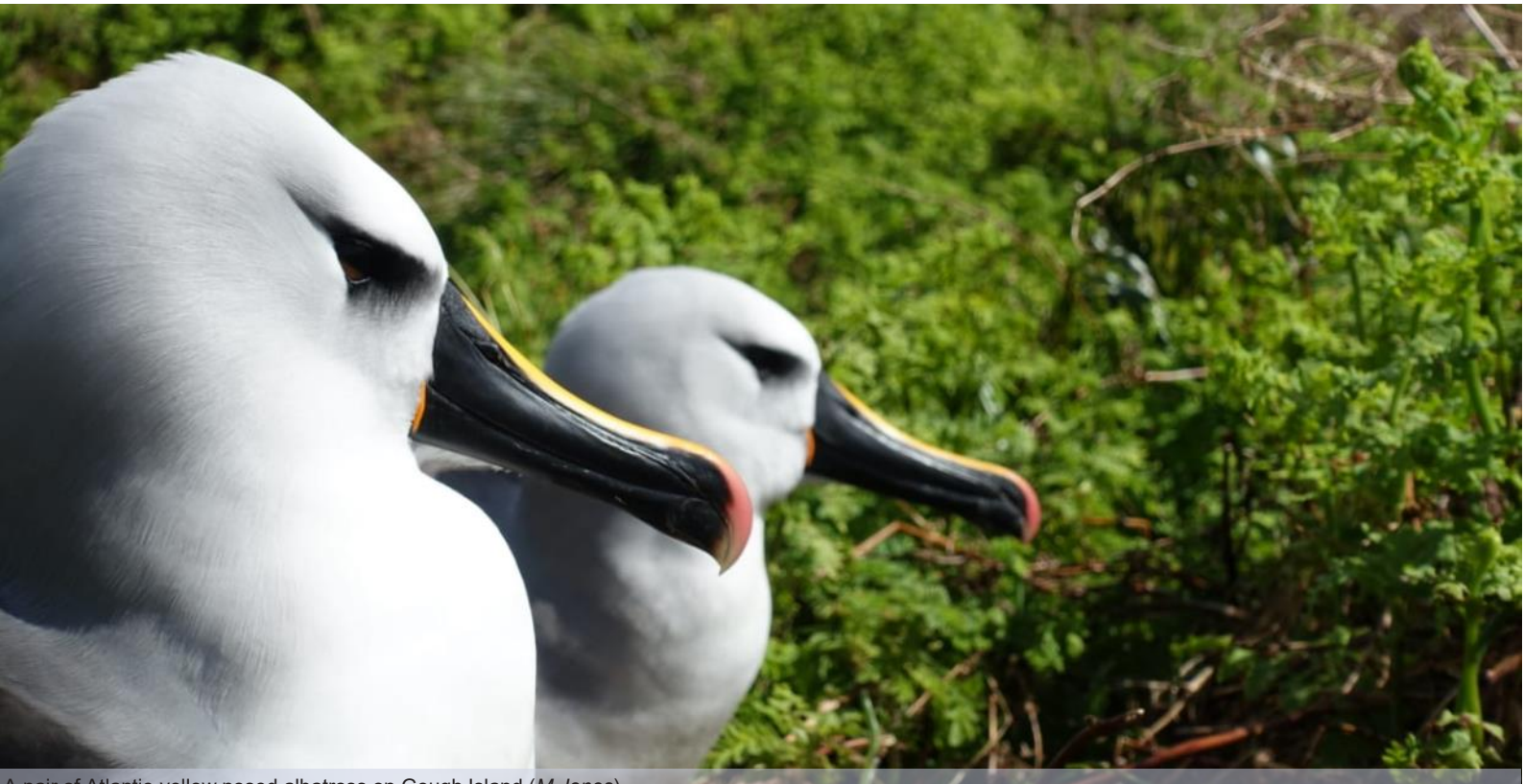
Not only is the yellow-nosed albatross the first species on Gough to be confirmed as being subjected to attacks on adult birds, it is also one of just two species on Gough whose chicks are being 'scalped' by mice (see right). Cameras set up in their colonies will help us to establish the scale of these new threats.

Impact of mice

34% of nests had mice holes in them in the 2009/10 season

Over **70%** global population decline in 72 years

Scalping by mice is one of the threats to the species on Gough Island (*M.Jones*)



A pair of Atlantic-yellow nosed albatross on Gough Island (*M.Jones*)

RSPB biologists and volunteers surveying seabirds, Shiant Isles, July 2018_Aidan McCormick (rspb-images.com)

A growing legacy of island restoration success

If successful, Gough Island will be added to a growing portfolio of the RSPB's island restoration successes.

Island restoration is becoming increasingly recognized as not only a necessary, but also an incredibly effective, conservation tool. The RSPB first recognised its potential almost 100 years ago, but only in the last half century have techniques been sufficiently refined so as to make it a standard option for island management. Since the RSPB's first successful island restoration 20 years ago, spectacular outcomes have been achieved time and again. Although we cannot guarantee success on Gough Island in 2020, we are confident that our experience, combined with that of our partners, puts us in the strongest possible position to succeed.

As on Gough, seabirds have been at the heart of our island restoration work in the UK and elsewhere to date, although many other species also stand to gain. The seabirds at most risk from invasive rodents in the British Isles are Leach's storm-petrel, European storm-petrel, Manx shearwater and Atlantic puffins. The eggs and chicks of these burrow nesters are easily accessible to hungry rodents.

Leach's petrels cannot coexist with rodents and, due to food availability, have a very restricted range in the UK. Our work for this species focuses on protecting the few sites where they are found. Manx shearwaters also have a restricted range, with most of the world's population breeding on just a handful of islands. Providing more safe breeding sites for this species is crucial to building its resilience, especially with unknown threats ahead such as climate change.

Puffins and European storm-petrels are found at more sites, with large colonies on several rat-free Scottish islands. There are only a handful of European storm-petrel colonies in England and Wales — though they have started to breed on all the UK islands from which the RSPB has helped remove invasive rodents.

Ramsey Island, Wales

Manx shearwaters on our island reserve of Ramsey showed a massive increase from 850 pairs before rats were removed to 4,796 pairs at the last count. The first confirmed breeding of European storm-petrels on the island was recorded in 2008. A small but stable population is now established there.

Lundy Island, England

Lundy Island was given rat-free status from both black and brown rats in 2006. In the most recent surveys we found:

- seabirds have trebled to over 21,000 birds since rats were eradicated;
- puffins have shown a 75-fold increase in 13 years;
- guillemots and razorbills increased from 3,300 to almost 8,000 individuals;
- European storm-petrels bred for the first time, doubling the number of breeding populations in England;
- Manx shearwater increased from around 300 breeding pairs to around 5,504 breeding pairs.

St Agnes and Gugh, Isles of Scilly

Rats had such an impact here that no Manx shearwaters had successfully fledged in living memory and European storm-petrels didn't even try, despite the existence of suitable habitat and England's largest colony being just a stone's throw away on the neighbouring island of Annet. The islands were confirmed rat-free in 2016 and both European storm-petrels and Manx shearwaters are now successfully fledging young.

The Shiant Isles, Scotland

The Shiant Isles host around 10% of the UK's puffin population, but the absence of European storm-petrel and Manx shearwater, despite plenty of habitat, was telling. The island was declared rat-free in 2018 and the calls of breeding storm-petrels were heard again that same summer. An increase in puffin productivity has also been recorded.

Henderson Island, Pitcairn

Island restoration success can never be guaranteed. It's important, then, that we also draw on experiences and lessons from past unsuccessful restoration attempts. Our operation to remove Pacific rats from Henderson was unsuccessful. However, having followed international best practice standards, the world's experts came together to help us understand what could have gone wrong — and importantly, what could be done to increase the chance of success next time.

Partnership Experience

Although the RSPB has a growing portfolio of involvement in island restoration, no restoration is achieved alone. Success on Gough will be the result of a successful partnership with many organisations.

Island Conservation alone have 25 years of specialist experience and have achieved 63 successful restorations. Our other partners—Tristan da Cunha Government, the South African Department of Environment, Forestry and Fisheries, BirdLife South Africa, the Royal Zoological Society of Scotland and BirdLife International each bring their own specialties from local knowledge and logistics to aviculture expertise.

Surveying Manx shearwater burrows along the east coast of Lundy, June 2018 *(H.Booker)*

A photo of H.R.H The Duke of Edinburgh during his visit to Gough Island in 1957 is still displayed in the Gough Island base.

A royal visit to Gough

In 1957, His Royal Highness the Duke of Edinburgh visited Gough Island, one of the remotest islands in the world. His motivation for this mammoth journey? The opportunity to see first-hand the special species which call Gough home.

H.R.H the Duke of Edinburgh retired from official duties last year. But during his working years he ventured across the globe, visiting even the most hard-to-reach colonies of the United Kingdom. Between 1956 and 1957 the Duke of Edinburgh toured the Antarctic and South Atlantic Oceans, visiting UK Overseas Territories including Tristan da Cunha and Gough Island, just a few years after funding a scientific expedition to Gough.

Well known for his love of birds and photography, it makes perfect sense that the Duke would brave the unpredictable weather and rough seas to visit Gough Island!

He arrived at Gough in January 1957, noting that sailing up to Gough is one thing, but that the island was known for its challenging landings. With just 24 hours to spend there, hopes of getting on land were small. But the group were lucky and were able to land from a small dingy.

Although his visit to the Tristan da Cunha island group was short, the Duke recalls the opportunity that Gough Island in particular provided to observe birds in his ornithological memoirs of the trip *'Birds of Britannia'*.

In the book the Duke recognises that:

'Gough is obviously very popular with seabirds as a desirable nesting-place…'

Although the impact that the mice were having on the island's avian residents was not known until the early 2000s, even in 1957 the presence of mice on the island was significant enough for the Duke to record:

'Gough has an enormous population of nesting seabirds, but it has also a flourishing Rock-hopper Penguin rookery, a colony of flightless rails, peculiar to the island, and a vast number of mice.'

Sixty-two years ago the Royal Family already held Gough and its species in such esteem that they felt it was worth the journey. Events since then have shown just how special the island is.

NB: the photos below are all taken by H.R.H the Duke of Edinburgh during his trip to Gough Island. The photo descriptions are as written in the Duke's memoirs of the trip, *Birds from Britannia.*

Left: The giant petrel, otherwise known as the Nelly or Stinker, is always in evidence when there is any garbage about or when the whales drop any titbits of blubber overboard. The habit of trailing their large webbed feet like a badly retracted undercarriage does not make their flight any more graceful.

Middle: Rockhoppers rock hopping against the lush vegetation of Gough Island.

Right: Rockhopper penguins and young at Gough Island. The long head feathers are bright yellow and orange.

Left: The combination which took most of the pictures. The Swedish Hasselblad camera with a 250mm lens.

Right: H.M.Y Britannia at Gough Island in the South Atlantic

Gough Island World Heritage Site by drone *(C.Jones)*

Funding the Restoration of Gough Island

We often talk about the value of Gough Island — the species found there are priceless. This is why we are unashamed to share the operational costs of securing the island's future. Today, as we gear up for next year's operation, we recognise this would not be possible without you.

Conservation action on the scale and complexity of the Gough Island Restoration is neither a quick nor a cheap fix. One of our biggest tasks to date has been securing sufficient funding to complete this work to best practice standards, which we know will give us the greatest chance of success.

Support for the project has been staggering, and indicates not only how island restoration is increasingly recognised as a conservation tool offering spectacular results, but also the international importance of Gough Island and its species, with donations continuing to come in from across the globe.

Earlier this year we were able to announce that funding was at a stage where we could confirm the restoration would go ahead in 2020. This was made possible by all the individuals, trusts, foundations, Governments and organisations who have contributed to the programme.

So far we have raised an incredible £6.4 million of the £9.1 million required for the operation. Although we are on track for the operation to go ahead next year, there is still a funding gap of £2.7 million to close.

This spring we'll be asking our generous RSPB supporters to contribute as much as they can to this vital seabird project. Your donation will help give the birds of Gough Island the chance to recover from the damage caused by mice, and ensure the island retains its World Heritage Site Status.

Please visit our website **www.goughisland.com** or contact us directly **GoughIsland@rspb.org.uk**.

Our Funders Include

UK Government

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Gough and Inaccessible Islands, World Heritage Site

After being recognised by the Royal Family back in the 1950s, the natural wonders of Gough were immortalised by UNESCO when, along with nearby Inaccessible Island, it became a World Heritage Site.

Both Gough and Inaccessible Islands are uninhabited (other than by a team of researchers on Gough), so their World Heritage Site status, inscribed in 1995, was awarded based on their natural environments: spectacular topography and species unique to these remote islands make Gough and Inaccessible worthy of the title.

For context, just 23% of all World Heritage Sites have been awarded on natural value alone, putting these two islands in the elites of the natural world.

Although considered two of the least disturbed temperate islands on the planet, this does not mean that they are safe for wildlife. As we know all too well, Gough's natural value is under severe threat from invasive non-native species. Mice threaten the very species upon which the World Heritage Site status is based, and are also likely to be having a detrimental impact on the island's vegetation and topography. The loss of species would spell the loss of the island's natural value, and so too, its World Heritage Site status.

But what would the loss of a title like this mean in practice?

As well as losing the prestige and awareness amongst the public and Governments that comes with being a World Heritage Site, benefits including management planning, international cooperation, technical, emergency and financial assistance from UNESCO would also be lost. All World Heritage Sites are covered under the World Heritage Site Convention, an international treaty which ensures the protection of World Heritage Sites. Sadly, this came too late to prevent the current crisis on Gough, but will help to provide protection in the future.

Gough and Inaccessible have already been assessed for the World Heritage Site In Danger list, and we need to act now to ensure the future of this internationally important site.

Natural Value

Two eroded remnants of **volcanoes**

Precipitous cliffs around the coastline covered with breeding seabirds

Two of the **least disturbed** cool-temperate ecosystems in the South Atlantic Ocean

Internationally important for colonies of **22 seabird species**

Supporting several **endemic species**

Part of the **Tristan Endemic Bird Area**

Gough is also its own **Endemic Bird Area**

Supports the only 2 **Critically Endangered** British birds

Supports **40 plant species** endemic to either the Tristan Island Group or these two islands

The Gough Island Restoration: Q&A

Ever wondered why the RSPB is involved in restoring a remote island off the coast of South Africa? Or how we can possibly know if the restoration has been a success? The new Q&A section of our website can answer all your questions. Here's a taster.

Why is the UK/RSPB involved in protecting an island off South Africa?

Although Gough Island is over 10,000 miles from the UK, it is part of the UK Overseas Territory of St Helena, Ascension and Tristan da Cunha. The RSPB's Royal Charter gives us specific responsibility to help protect the natural environments of our Overseas Territories.

We have been working with the community of Tristan da Cunha, who are British nationals and the custodians of Gough Island, to fulfil this duty for almost 20 years. We have supported conservation planning and reporting for various islands within their archipelago.

Great conservation comes from working together and sharing knowledge, which is why we have a common goal in ensuring that Gough remains one of the world's most important seabird nesting sites, worthy of its World Heritage Site status.

How is the bait distributed?

Rodenticide bait will be distributed in the most part by helicopters with an underslung modified fertilizer bucket.

Skilled pilots with experience of aerial baiting operations will be guided along pre-determined flight lines by GPS systems, to ensure bait is spread evenly and accurately.

The vast majority of the island will be treated in this way, but in some areas, bait will be spread by hand both in a broadcast fashion (throwing it over the land) and via the placement of bait pellets inside bait boxes.

Are there any other ways to remove the mice?

A comprehensive feasibility study considered a variety of methods for removing mice from Gough Island. However, only the island-wide application of rodenticide bait was considered likely to result in a successful outcome. Other options considered and determined to be unsuitable in achieving the goal of preventing the extinction of Gough's native wildlife include:

- Doing nothing
- Waiting for new techniques to be developed and proven in the field before attempting mouse eradication
- Controlling the mouse population
- Relocating the mice
- Eradication via a ground-based operation (spreading the bait by hand or the use of widespread traps or bait stations)

When and how will you know if all the mice have been eradicated?

It is typical for there to be a two year wait to determine the outcome of restoration in temperate systems. Mice in low densities are extremely difficult to find so waiting this time means we can be more confident we have been successful if we cannot find mice when we search for them.

Typically, a team of experts return to an island with a variety of detection tools such as tracking tunnels, chew cards/sticks or wax blocks (which can be read for footprints and teeth marks), and specially-trained detection dogs used to alert the team to the presence of mice. The team will run intensive searches for mice, or sign of mice, over a period of a few weeks. If none are found, we can declare Gough Island as rodent free.

Won't more mice just be brought back on visiting ships?

House mice are excellent stowaways and good swimmers (they can squeeze through a gap 5mm high and swim up to 500m). There is, therefore, every chance that one could return to Gough after the restoration operation.

A single pregnant female could repopulate the island in a very short space of time, so we are developing biosecurity plans and working with those responsible for the vessels that visit Gough regularly to ensure good measures are in place to reduce the risk of invasive species coming back.

What benefits do you expect there to be for birds?

Mice cause the loss of at least two million seabird eggs and chicks every year, so the most obvious and immediate benefit we will see is many more seabirds surviving to fledge and the seabird colonies starting to recover. It will take longer to see population increases since many of the newly fledged chicks will stay at sea for several years before returning to Gough to breed for the first time.

Removing the primary threat to several highly threatened birds will see the chances of their long-term survival increase (i.e. will avert the current high likelihood of extinction).

See www.goughisland.com for more.

Species like this Tristan albatross are just one of the species currently at high risk of extinction, and which will benefit immediately from the eradication of mice *(M.Jones)*

Acknowledgements

We would like to thank all of our funders and supporters, both organisations and individuals alike.

Contact

If you would like further information about the Gough and Henderson Island Restoration Programmes, please contact

Laura Beasley RSPB, Assistant International Officer

Email: goughisland@rspb.org.uk

www.goughisland.com

Tel: + 44 (0) 1767 693236

rspb.org.uk

Cover image Atlantic yellow-nosed albatross *(M.Jones)*

The RSPB is the UK's largest nature conservation charity, inspiring everyone to give nature a home.

The RSPB is a member of BirdLife International, a partnership of conservation organisations working to give nature a home around the world.

The RSPB is a registered charity: England & Wales no. 207076, Scotland no. SC037654