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BirdLife INTERNATIONAL

Island Restoration News:

Gough and Henderson

The northern rockhopper penguins have gathered to show off their new feathers after moulting *(Jaimie Cleeland)*.

Welcome

Welcome to the third edition of Island Restoration News! In this issue you'll find updates on the latest progress of both the Gough and Henderson Restoration projects and exciting news from the wider world of island restorations.

Gough

This newsletter is a chance to celebrate the leaps in progress made in the past year. As we move into the next chapter of the Gough Island story…

The decision has recently been made to carry out the Gough eradication in 2020. The eradication is a major conservation action, and we may only get one opportunity. We're confident that this change to extend our planning period by one year will not only make our plans watertight, but will ensure that we have the highest possible chance of success to deliver the best outcome for Gough's wildlife.

If you've been following the Gough overwintering team of Fabrice, Kate and Jaimie, who we introduced in the last newsletter, you'll have seen the fantastic progress they've made in the last 12 months. They have kept us updated on the ups and downs of being on the front line of this complex project through blogs and stunning photos. Their time on Gough will soon be coming to an end but you can see all of their blogs on our website

www.goughisland.com.

The UK-based RSPB Gough team has grown significantly this year. A new Logistics Manager, Data Scientist, Operational Advisor and Assistant Programme Manager are driving our plans forward. We can also confirm the recruitment of the 2018/19 overwintering team - Chris, Michelle and Alexis. Chris and Michelle are past overwintering team members, bringing invaluable knowledge and experience of the island.

We are very pleased to announce the newest project partnership between RSPB and Island Conservation. Island Conservation has been involved in both Gough and Henderson on a research level for a the past two years. Now with a formal partnership in place they bring indispensable knowledge and experience of island restorations to the project.

www.islandconservation.org

Henderson

The Henderson Island project continues to progress through the crucial early stages of preparation.

Field research in French Polynesia is now underway to better understand the lifecycle of rats. Results of this will inform our approach to Henderson, and will provide invaluable information towards rodent eradication on Tropical Islands across the world. Read more about this on page 14.

A sooty albatross looks out over a cliff edge on Gough Island *(Jaimie Cleeland)*.

From left to right: Jaimie, Fabrice and Kate, the 2017/18 Gough Overwintering team *(Kate Lawrence).*

An interview from Gough Island

This year's Gough team has brought Gough to life through their blogs and stunning photos! In this interview, Kate, one of the Gough Field Assistants, gives us some insight into life on Gough and why the work they are doing is so important…

You've been on Gough Island for 12 months now, but what were your first impressions of the island?

We arrived on a particularly wet, windy, low visibility day, so the island literally seemed like this mysterious presence slowly emerging from the clouds. It's just so rugged and there were waterfalls everywhere because of the rain; I just thought 'wow, this is home for the year'. Then as we started to get to know the island it really seemed like Jurassic Park mixed with Middle Earth, and birds everywhere of course!

We've seen some amazing photos from the team this year – particularly those of newly hatched seabird chicks. How does it feel to see those hatchlings, knowing the threats they are facing?

It's really special seeing the full life cycle of the birds we monitor here, and most recently it's been wonderful observing the hatching and newly hatched Tristan albatross chicks. But in the back of my mind I'm asking, how many will survive the mice? Will their parents survive to rear them to fledging? If they fledge, how long will they live before getting hooked on commercial fishing-line? We've already seen the impacts of mice on other species here like our monitored McGillivray's prions and Atlantic yellow-nosed albatrosses, so I feel like we're just waiting to see what the damage is for each species.

We all know the environment there is tough and the work is very physical, so how do you relax after a day of trekking and bird surveys?

There are ten of us living here* and we all eat dinner together and take turns cooking, so nine times out of ten we can come back to base and enjoy a meal cooked by someone else, and have a chat and a laugh with the others. Sometimes we play pool, table tennis, darts or cards, or watch a TV series episode, and we have regular movie nights too.

**The three Gough field assistants share the island with a team from The South African National Antarctic Programme (SANAP), who work at the island's weather station.*

After 12 months I'm sure you have a lot of great stories to tell – can you pick out one particularly special memory to share with us?

We've recently been deploying GPS tracking devices on adult Tristan albatrosses to see where they go to feed during the early stages of their chick's life, and that requires someone to hold the chick out of harm's way while someone else restrains the adult and someone else attaches the device. Holding those vulnerable little balls of fluff that will one day, hopefully, be soaring over the ocean for thousands of kilometres with a wing-span up to 3m was quite special. But of course I was also thinking the whole time, 'are you going to make it?'

And finally, it sounds like you've built up quite an attachment to Gough and the characters you share the island with, but what is the one thing you love most about Gough?

I love that I just never know exactly what I'm going to see and experience each day, and there are so many special moments to treasure because I might not experience them ever again once I'm off this island, or even while I'm still here. Like seeing a hatching albatross egg, or having a Kerguelen petrel fly into someone's lap while camping at Gonydale, or seeing a Southern right whale while eating lunch at the top of a waterfall, or holding a Tristan albatross chick that's only a few days old, or having a curious non-breeding Tristan nibbling at my headband while I try to read its ring, or seeing a rainbow at night. This island really is a wonderland!

Kate sails up to 'The Glen' at Gough Island for the first time *(Jaimie Cleeland)*.

Holding a young Tristan albatross chick as Fabrice and Jaimie GPS tag the chick's parent *(Zach Mogale)*.

The team relaxes with a game of monopoly after a long day in the field *(Jaimie Cleeland)*.

An inquisitive juvenile Gough bunting ***(Kate Lawrence).***

Species Spotlight: Gough bunting

One of the lesser-known species of Gough Island, the Gough bunting will become an increasingly important focus of the Restoration Programme over the coming year.

This easily identifiable bunting is olive-green with yellowish plumage on the forehead and eye brows - and has a curious character.

Facts

- The Gough bunting is endemic to Gough Island. It's found nowhere else in the world.
- The Gough bunting is a large finch -like relative of the South American tanagers in the Thraupidae family.
- A land-bird, found mainly in Gough's tussock-grassland, wet heath and scrub up to 800 meters high.
- The bunting stands at just 18 cm tall.
- The majority of the bunting's food is made up of invertebrates, as well as fruit, grass seeds, scavenged birds and broken eggs.

Breeding Biology

Historically the buntings have been breeding across the whole island. However, mouse predation has forced the bunting out of coastal areas and into sub-optimal upland habitat. They nest under vegetation on the ground, usually laying two eggs. Breeding occurs from September to December.

Conservation

- The Gough bunting has been classed as **Critically Endangered** on the IUCN Red List since 2008.
- There are now just 400-500 breeding pairs of buntings on Gough Island, and that number is decreasing.
- Surveys of breeding territories indicate that density of territorial pairs roughly halved between 1990 and 2007, owing to predation by mice (Ryan and Cuthbert 2008).
- The introduced house mouse poses the greatest threat to buntings through predation on their eggs and chicks.

Restoration

During the eradication, a proportion of the island's Gough buntings will be housed in temporary aviaries on-island. This is to ensure we mitigate the potential risk of non-target mortality during the eradication. Once released, this group of buntings will form a healthy population which we anticipate will thrive on a mouse-free island.

A juvenile Critically Endangered Gough bunting *(Jaimie Cleeland)*.

The Gough bunting is well camouflaged on Gough Islands rugged environment *(Kate Lawrence)*.

A wandering albatross on the Antipodes *(Island Conservation)*.

The Antipodes is mouse free

Over 100 of New Zealand's offshore islands have been successfully restored. The most recent, so called "Million Dollar Mouse" project on Antipodes Island demonstrates this nation's expertise in the field.

In a landmark success for conservation, Antipodes Island in New Zealand was declared mouse free this year!

Similar to Gough Island, the Antipodes is home to 21 breeding species of seabirds. With the threat of mouse predation and habitat destruction growing, two of the Antipodes seabird species were forced to breed only on the small, mouse-free, offshore islands.

The eradication was led by the New Zealand Department of Conservation (DOC) and the Morgan Foundation, with support from Island Conservation and the WWF; this partnership made up the iconic 'Million Dollar Mouse' brand. In July 2016 the project announced it had completed the eradication operation ahead of schedule, and that immediately fewer signs of mice were seen on the island.

But it would be a long wait to 2018 before the true success of the project could be known…

Finally, in February of this year the 10 -strong monitoring team made the journey back to the island to look for signs of mice. After nearly a month of searching, the team reported no signs of mice on Antipodes Island and the DOC's Island Eradication Advisory Group declared Antipodes Island officially mouse free.

Their success is the result of four years of hard work, from teams planning incredibly complex logistics, to those facing a different challenge; the remote and harsh conditions of the sub-Antarctic.

Between just 2014 and 2018 this small team successfully secured the future of a world heritage site and protected area, its unique endemic species and magnificent seabirds. It is easy to see then why island eradications are considered so important for biodiversity conservation - the return on investment in these projects cannot be underestimated.

This project built on the success and challenges of island eradications before it, and future eradications such as Gough and Henderson will look to the Antipodes for lessons in success.

The Antipodes Island's Reischek's parakeet is one of the species the restoration will benefit *(Jason Zito/Island Conservation)*.

Mouse Free Marion

The restoration of Marion Island is a story of perseverance that began in the seventies. Now Marion faces it's biggest restoration effort yet—the aerial eradication of invasive mice.

Marion Island is a small South African island in the Southern Indian Ocean. Marion is yet another example of how people can unknowingly cause havoc amongst an island ecosystem- invasive non-native goats, rats, sheep, cats and mice have all been introduced to the island.

After finding cats were killing over 450,000 petrels every year, an eradication spanning 16 years began in 1977. Techniques trialled in the early years of eradications included trapping, hunting, and releasing feline pneumonia before finally, in 1993, perseverance paid off and Marion Island was cat free.

Without cats, a new threat to seabirds arose; mice on the island could thrive. And in 2009 the first footage of chicks being scalped by mice was filmed on Marion. Further research followed, as did the footage of night time mice attacks on large, well feathered chicks, some of which had fledged earlier in the year. At this point the idea to eradicate became a necessity, and initial ideas and feasibility studies began.

BirdLife South Africa (also a partner of the Gough operation), are leading the planning of the Marion Island Restoration. The large size and erratic weather of Marion means it is going to be a very challenging operation.

There will be some lessons to take from the upcoming Gough operation which is similarly remote and climatically unpredictable, but just like Gough, Marion has unique challenges of its own.

This year, a research programme into the biology and populations of Marion's mice began. The results will help BirdLife South Africa to better understand the mice and in turn the best way to successfully approach the operation.

We look forward to following the story of Marion Island and we will continue to share the project's progress.

Support Mouse Free Marion at www.mousefreemarion.org.za and on social media @mousefreemarion.

The courtship of wandering albatross on Marion Island (*Antje Steinfurth*)

Rodent detection dogs and their handler on South Georgia *(Oliver Prince).*

A story of success: Rodent free South Georgia

At 100,000 hectares the South Georgia Island Restoration was the largest rodent eradication ever attempted - but is now known as the largest ever successful island restoration!

The South Georgia Heritage Trust (SGHT) has achieved conservation history as they announced South Georgia officially rodent free!

Overall, the project to eradicate both rats and mice has been ongoing for over a decade. The eradication work itself was done in three stages in 2011, 2013 and 2015. The operation was completed aerially by a dedicated team of staff and volunteers.

Facing freezing temperatures, mountainous terrain and glaciers was not an easy task.

After three seasons of hard work, Phase 4 of the project commenced this year: rodent monitoring. This final phase would tell SGHT whether their perseverance had paid off.

Joined by a Government Representative, SGHT deployed wax tags (which are flavoured to attract mice to bite into them) to check for signs of mice, and three detection dogs were brought ashore for additional detection. Monitoring with dogs might seem unorthodox, but these specialist canines are experienced in the field, show little interest in wildlife, and focus on the job at hand—sniffing for rats and mice.

To everyone's relief, no signs of either rodent were found anywhere on the island, and in May the operation was announced a success and South Georgia declared rodent free. Lord Gardiner, the parliamentary under secretary of the Department for Environment, Food and Rural Affairs paid tribute to the bravery and endurance of the team:

"South Georgia is a shining beacon for other eradication campaigns… We must not rest on our laurels. In our Overseas Territories, which make up 90% of the UK's biodiversity, [many species] are highly vulnerable."

We must not become complacent about the complexity of these operations. However, there is cause for celebration here and we hope you'll join us in congratulating SGHT and their team for this fantastic

Securing the future of Scotland's seabirds

Each Island restoration project faces its own unique challenges, and the Shiants is no different. After achieving eradication success, this year the task is now to ensure this tourist hotspot remains rodent free.

Another encouraging story from this year's island restoration successes is the Shiant Isles rat eradication.

The Shiants, a remote cluster of islands in Scotland, are one of the most important seabird breeding colonies in Europe; hosting hundreds of thousands of pairs of nesting seabirds each year, including around 10% of the UK's puffin population.

However, since invasive non-native rats came ashore, seabird eggs and chicks became their prey, making the islands unsuitable for species such as the Manx shearwater and European storm-petrel, and impacting on other seabirds breeding there.

Restoration
The restoration project was, like the Antipodes, a short four-year project. The dedicated team of staff and volunteers, funded by EU LIFE+, Scottish Natural Heritage and by private donations, and led by Wildlife Management International (WMIL), completed the ground-based eradication over the winter of 2015/16.

Monitoring started soon after and in March 2018 we celebrated as the Shiants were declared officially rat free!

Recovery
The islands are already showing very promising signs of recovery, with the calls of storm petrels recorded in the second summer post-operation.

Work has now turned to implementing long-term biosecurity plans to prevent rodents and other invasive non-native mammal species ever returning. The RSPB worked in partnership with Scottish Natural Heritage, The Nicolson Family and WMIL to develop the plan and are asking visitors to follow simple steps to ensure these islands remain a haven for seabirds in the future.

10% of the UK's puffin population is found on the Shiant Isles. They too will benefit from the successful restoration *(John Tayton)*.

The rose-crown is one of the Henderson fruit-doves distinctive features *(Sarah Havery)*.

Species spotlight: Henderson fruit-dove

The colourful Henderson fruit-dove is a native, endemic species of Henderson Island and is one of the key species behind our plans to eradicate the invasive rat.

The world's population of Henderson fruit-dove is confined to just 3,700 ha (London by comparison, is 157,200 ha), making the consequences of invasive non-native species on Henderson potentially catastrophic.

Facts

- The Henderson fruit-dove resembles a common pigeon in many ways, with it's coarse cooing call and pigeon-shaped features.
- The fruit-dove stands a little smaller though at 20-25cm tall.
- The fruit-dove's body is mainly an olive-green colour, with distinctive bright rose-red crown and forehead. Its head to upper back is pale blue-grey, and the tail reflects a bronzy colour from above.
- As its name suggests, the fruit-dove is a frugivore that eats 19 species of fruit – that's almost all of the 'suitable' fruit species growing on the island.
- It's no surprise then that the fruit-dove is a very important species for seed dispersal on Henderson Island.

With no fresh-water sources available on Henderson, it can be a very difficult island to survive on. But this isn't a problem for the fruit-dove as their high fruit diet provides all the water they need. It's so important in fact, that the fruit-doves can be incredibly territorial over patches of fruit that have just become seasonably available.

Breeding Biology

Although there is little information about the breeding cycle of the Henderson fruit-dove, it is thought that breeding is at the start of the year and females lay just one egg per season.

Conservation

- Under the IUCN Red List, the Henderson fruit-dove is listed as **Vulnerable**.
- Being so restricted in range, the Henderson fruit-dove is most at risk from invasive non-native species such as rats and mice.
- The Pacific rats that have become abundant on Henderson suppress seedling germination and growth, which could limit the fruit-doves food availability.
- In 2011 a rat eradication operation was sadly unsuccessful. Population numbers of the fruit-dove suffered in the time immediately after the operation.
- However the population has now not only fully recovered but is on the increase once again.

Although numbers of the fruit-dove are currently increasing, if other invasive species of mammal or plant reach the island the species could be severely impacted. This is one of the reasons why the RSPB still plans to eradicate Pacific rats from Henderson Island, to implement a strong biosecurity plan, and to restore this World Heritage Site.

The Henderson fruit-dove, showing off its colourful plumage *(Sarah Havery)*.

An aerial view of Tetiaroa, including ‘The Brando’ resort on the front island (*Pierre Lesage*).

What can we learn from Polynesian rats?

Knowledge and scientific grounding will only increase our chances of successful eradication—and knowledge of the invasive species as well as the island's endemics should not be overlooked.

Rat eradications undertaken on tropical islands are often less successful than those on temperate islands, and the reasons for this are not fully understood. Rat reproduction and diet are factors that could have potentially dramatic impacts on the success of eradication projects, yet there is a gap in our knowledge of basic rat biology, particularly in tropical climates.

In collaboration with Island Conservation, University of Auckland and the Tetiaroa Society, the RSPB is supporting research into rodent reproduction and diet, specifically on tropical islands, in order to better understand how rat biology could influence a future attempt to remove rats from Henderson Island.

Location

Research is being undertaken on the island of Tetiaroa in French Polynesia. Once the vacation spot for Tahitian Royalty, Tetiaroa became known internationally after it was purchased by Marlon Brando in 1973.

"It's the ideal site for conducting this work" says Araceli Samaniego the principal researcher. *"It is accessible and with a research station which is well-equipped"*.

Tetiaroa also has the Polynesian rat, the same rat species found on Henderson Island, making the research particularly relevant.

Research as the base of solutions

Island Conservation are currently use radio telemetry to follow the movements of over 60 individual female rats during eradication, using mark and recapture techniques to monitor bait consumption, and scopes to peer into burrows.

The partnership is looking to answer questions around how the age and life-stage of rats affects the likelihood that they will consume bait, and whether the rate that rats consume bait correlates to the rate they consume natural foods.

The research will help us learn more about rat biology, and answer some of the key challenges facing tropical rat eradications. Most importantly for us at the RSPB, this research is a crucial part of our strategy to return to Henderson and successfully eradicate rats.

The team of staff and volunteers prepare for the days research in the Tetiaroa forest (*Markus Gronwald*).

Acknowledgements

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Contact

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

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Cover image: a Tristan albatross returning to Gough Island after a fishing trip (*Jaimie Cleeland*).

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.