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Saving Marion Island's Seabirds

## **NEWSLETTER**





forestry, fisheries & the environment

Forestry, Fisheries and the Environment REPUBLIC OF SOUTH AFRICA Photo: Michelle Risi

### Welcome

to the last issue of the Mouse-Free Marion Project Quarterly Newsletter for 2023

This has certainly been an eventful year for the Mouse-Free Marion (MFM) Project. We enthusiastically welcomed new members into our dedicated team, made significant strides in the planning and preparations for the eradication project on Marion Island and navigated through some challenges. As 2023 draws to a close, we reflect on the highlights, accomplishments and challenges that have defined the journey of the MFM Project through the year.

### Worldwide support for the MFM Project over 2023

The year started on a note of optimism as we received the wonderful news that young MFM Project supporter Romario Valentine was able to more than double his target for his "Romario's Seabirds Christmas Gift Campaign" fundraiser. The campaign was initiated at the tail end of 2022 and received incredible support across the country and farther afield. Following the success of this initiative, the 12-year-old has started "Romario's New Year Appeal for a Mouse-Free Marion", which will run until the end of January 2024.

Support for the MFM Project from the public continues to be heart-warming. We



have received support from bird clubs, cycling groups and collections from birthdays. We appreciate each and every one of our donors and sincerely hope that their interest in project progress continues into the future. This year saw several **c**onservation bodies rallying behind the MFM Project and showing their support by endorsing the project. The Agreement on the Conservation of Albatrosses and Petrels (ACAP), Zoological Society of London (ZSL), Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) and many others have expressed their support for the MFM Project.

Support from these and other highly regarded conservation bodies helps raise the profile of the MFM Project on the international stage. In March, three of the MFM team travelled to London to attend our first international reception. The event was co-hosted by the project and the South African High Commissioner to the United Kingdom of Great Britain and Northern Ireland, his Excellency Jeremiah Nyamane Mamabolo. The event presented a fantastic opportunity to announce that His Royal Highness, <u>The Duke of Edinburgh, would</u> become an MFM Project Patron.

In excellent company, HRH the Duke is one of five MFM international patrons who have offered to lend their profile and support to the MFM Project. The patrons, who are spread around the globe, include Peter Harrison MBE (USA-based renowned seabird expert), Professor Steven Chown (Antarctic scientist based in Australia), Christel Takigawa (Japanese television personality) and Gloria Serobe (South African businesswoman). Read more about MFM's international patrons here.

In October, BirdLife South Africa and the MFM Project joined the Island Ocean Connection Challenge. This international initiative is a global challenge to restore 40 island-ocean ecosystems by 2030 to benefit people, wildlife and the planet. <u>Read more here</u>.

### New faces on the MFM Team

2023 saw the MFM Team grow by three new staff members. Dr Sue Tonin (Assistant Project Manager), Tarryn Havemann (MFM Development Officer) and Minky Shabalala (MFM Admin and Finance Officer) joined the team over the course of 2023 and have already made a considerable impact on the MFM Project. Their skills and experience have been critical to the success of the project over the year and they have assisted it to move forward with its multifaceted project planning, fundraising, facilitating regulatory permissions for the project operations in collaboration with relevant line function DFFE officials, and community engagement through in-person presentations, webinars, and social media.

### Continuing work on Marion Island

The MFM Team member who has surely had the most incredible year is the MFM overwintering researcher on Marion Island, Camilla Smyth. Camilla travelled to Marion Island in April to relieve the 2022/23 MFM researcher, Elsa van Ginkel. She has spent the year undertaking critical plant and invertebrate research that will help inform the Marion mouse eradication. The field work that Camilla is undertaking will also help assess and monitor the ecological outcomes of the eradication operation.

As the holidays approach, Camilla will be enjoying the longer summer days on Marion Island and the heightened activity of the seabirds and other wildlife on the island. Read more about Camilla here and her experience of the island <u>here</u>.

### Optimism in the face of challenges

In August this year, we heard that the attempt to eradicate mice from Midway Atoll in the Hawaiian Archipelago was unsuccessful. Given the recent outcome at







Top: Mark Anderson, HRH the Duke of Edinburgh and Keith Springer at the March event at South Africa House in London; photograph Art Lewry.

*Middle: Camilla Smyth conducting fieldwork on a snowy Marion Island, photograph: Michelle Risi.* 

Bottom: Anton Wolfaardt along with participants of the mouse eradication workshop in Palmerston North, New Zealand. Photo: Iain Rayner.

Midway, coming soon after the failure at Gough Island in 2021, it is critical that the MFM Project Team carefully considers any possible implications for Marion. It is important to note that despite these two recent failures, most previous rodent eradications have been successful. After thorough deliberation, and with the aim of optimising our chances for success, the baiting operation (initially scheduled for Marion Island in 2025) has been rescheduled to 2026. This extension provides our team with the invaluable opportunity to collaborate with colleagues who have been engaged in Gough, Midway and other eradication endeavours. By assimilating their experiences and insights, we aim to enhance our understanding, conducting a comprehensive review of all facets of the planned MFM Project baiting operation. This meticulous examination will enable us to make any necessary modifications, ultimately minimising the risk of failure and bolstering our preparedness to achieve a successful outcome.

To initiate this process a three-day mouse-eradication workshop attended by 24 international experts was convened in Palmerston North, New Zealand at the end of November, at which the MFM Project was represented by Anton Wolfaardt (MFM Project Manager) and Keith Springer (MFM Operations Manager).

Following this workshop, Anton and Keith participated in a meeting of the Island Eradication Advisory Group (comprising experienced eradication practitioners from the NZ Dept of Conservation) which provided a further opportunity to discuss some aspects of the MFM Project planning.

#### Looking ahead to 2024

December is the season of new life and many of Marion Island's seabirds will have laid their eggs and chicks will hatch soon. The chicks that hatch over the new year face a world at risk. It is critical that those who survive to fledge are able to return to safe breeding grounds.

Over 2024, the MFM Project Team will continue to advance our preparation efforts for the eradication operation. Our focus will encompass detailed project planning, implementation of additional field trials on Marion Island. These concerted efforts are operation.



journey of hope towards this high-impact conservation action. As we enter the festive season, we wish to extend our warmest wishes for a joyful and prosperous New Year.

#### The Mouse-Free Marion Project Team.

Dr Anton Wolfaardt, Dr Sue Tonin, Keith Springer, Robyn Adams, John Cooper, Tarryn Havemann, Minky Shabalala and Heidi Whitman.

Marion Island's snow-covered peaks are visible 22 km away from behind Hoedberg on the Prince Edward Island plateau; photograph by Janine Schoombie

### Remote work takes on a new meaning

Mouse-free Prince Edward Island, a hidden gem in the sub-Antarctic, is visited for the first time in over a decade

outh Africa's sub-Antarctic Prince Edward Islands, consisting of Marion Island and Prince Edward Island (PEI), were declared a Special Nature Reserve in 1995. Together, they form an internationally important breeding site for a diversity of seals and seabirds. Most of these species breed during the summer months, when invertebrate and plant activity and growth are also at their highest. Invasive House Mice have caused detrimental effects on several sub-Antarctic islands. On Marion and Gough Islands, predation by mice threatens the viability of seabird species, and disrupts nutrient cycling by native insects and plants. These effects become magnified when we observe similar islands without their presence, such as PEI, where the biota is thriving.

The Prince Edward Island 2023 Expedition members smile for the camera, with the S.A. Agulhas II waiting for them offshore; photograph by David Hedding



On 14 November 2023, a party of 13 visited PEI by helicopter for a long overdue, and highly anticipated, scientific expedition. Unlike its nearby neighbour, Marion Island, where South Africa has a permanent research station served by annual relief visits, PEI has no permanent human presence, and even shortduration visits to the island are few and far between. The current Management Plan for the Prince Edward Islands Special Nature Reserve permits visits of up to eight days, at intervals of five years or longer, by a restricted number of researchers. In recent years, interdisciplinary summer surveys were conducted in **December 2001** and again in <u>December 2008</u>. Exceptions were made for short visits in April 2010 and



Southern Elephant Seals and King Penguins cluster on the black volcanic sand of Boggel Beach on Prince Edward Island's east coast; photograph by David Hedding March 2011, conducting biological surveys (<u>click here</u>) and making archaeological observations. Since then there has been a gap of over a decade with no landings made.

Access to PEI is strictly controlled because it is one of the most pristine islands globally. Importantly, it has always been free of alien mammals, and House Mice in particular, and thus has been spared the ecological impacts that mice have had on other sub-Antarctic islands, such as Marion. Visits to such islands always pose a risk of new introductions of invasive species, so strict biosecurity guidelines for PEI specify that all equipment and field clothing must be brand new or subject to stringent biosecurity

inspections pre-embarkation and onboard the vessel to prevent the introduction of new alien species.

The 2023 PEI survey team was one of the most diverse scientific groups to have visited the island. The team included four ornithologists, three marine mammalogists, a botanist, entomologist, aeronautical engineer, geomorphologist, veterinarian and an environmental compliance officer. Apart from the 75-year-old annexation flagpole and copper plague, which still stand guard at the entrance to Annexation Cave in Cave Bay, there are no signs of past human presence on the island, save for a few remnants of the sealing age in the first half of the 19th century. However, there are many washed-up plastic fishing buoys and bottles around South Cape and in McNish Bay, spoiling an otherwise pristine scene. A tented camp was pitched in a predetermined area near Cave Bay, next to a stream that allowed drinking water to be collected. Camping proved somewhat challenging as the infamous



Roaring Forties lived up to their name, collapsing the team's food storage and cooking tent on the first night. Although also taking a beating through the team's week-long stay at PEI, the smaller sleeping tents fared better and provided welcome shelter and refuge for the remainder of the expedition.

Most of the work was performed in the south-east corner of the island, within a day's walk of the camp. This section of the island hosts almost all the beaches, breeding colonies and vegetation types required by the scientists to fulfil their set outcomes. Due to steep cliffs it is not possible to walk round the island's entire coastline. However, a small contingent of the team braved the harsh, mist-covered interior and a steep and slippery descent (~500 m) down the escarpment to cross over to the north-western side of the island. Here they set up a satellite camp for a couple of nights to complete surveys. Two of the team, Charlene



Left: Flightless moth caterpillars were easily spotted on Prince Edward. On Marion they fall victim to mice and are very hard to find; photograph by Elsa van Ginkel

*Right:* Poa cookii *tussock inflorescences were abundant in the absence of mice on Prince Edward Island; photograph* by Stefan Schoombie

Janion-Scheepers and Elsa van Ginkel (a previous MFM overwintering researcher on Marion), summited the island, climbing Van Zinderen Bakker Peak at 672 m, surely among the very few women who have done so.

All the surface-breeding birds, including four species of penguins, five species of albatrosses (of which only four breed on Marion), Northern and Southern Giant Petrels and Subantarctic or Brown Skuas, were surveyed and counted or estimated. An unexpected sighting was of an unbanded Black-browed Albatross close to an empty nest, the first record for the island, and one of only three known for the island group (click here). In addition, transects conducted in the late 1970s were repeated to estimate the density and occurrence of burrowing petrels. Most of the recently born Southern Elephant Seal pups were marked with flipper tags to estimate movements of individuals between PEI and Marion Island. A variety of birds and seals was examined for potential pathogens and/or toxins.

Vegetation surveys were completed in coastal salt-spray, biotic herbfield, mire, slope and fellfield habitats, accompanied by invertebrate

and soil nutrient collections to compare with concurrent data from Marion Island. Adults and larvae of the endemic flightless moth Pringleophaga marioni were abundant in all habitats in comparison with Marion where they are preyed upon by mice, while the spiders were surprisingly large in comparison to those to be seen on Marion Island. Even tiny invertebrates such as springtails were clearly different along the coastline compared to Marion. Two temporary wind stations were erected to measure wind speed and direction and major geological features and buried peat depositions were sampled.

All the scientists on the team have worked extensively on Marion Island, and comparisons between the two islands were unavoidable. Even while setting up camp, it was immediately apparent that PEI is very different from Marion Island. Within minutes of our arrival an adult flightless moth crawled onto our gear. In addition, expansive areas of numerous tightly packed petrel burrows had to be traversed, in great contrast to Marion.

The waterfall at the head of Prince Edward Island's Albatross Valley is surrounded by ledges supporting hundreds of breeding Grey-headed and Indian Yellow-nosed Albatrosses. The latter species does not breed on Marion; photograph by David Hedding



Our observations from our visit to a sub-Antarctic gem are summarised in the following statements, with most alluding to the lack of mice:

"The island is very dry, there were a lot of mud flats that looked like dried up marsh pans."

"The numbers of debris flows and small landslides were surprising".

"The tussock grass inflorescences and the sedge seed heads were significantly more abundant. On Marion you rarely see a tussock or a sedge clump with more than one inflorescence or seed head present due to the mice. Amazing!"

"Azorella cushion plants are everywhere, with extensive flats completely covered by them."

"The invertebrate life is in complete contrast to Marion, with 'goggas' crawling everywhere you look. Even the occasional uninvited spider entered our tents."

"There are burrows everywhere! The abundance of burrowing birds was strikingly notable."

"The scavengers seemed less desperate, with half-eaten petrel carcasses often observed lying next to skua nests."

### "The Gentoo Penguins parade with curiosity, often approaching and following us when nearing their colonies."

We learnt a lot during our short stay on the island and we will learn even more as we start to analyse our data. Comparisons between the plant, invertebrate and seabird surveys from our visit, and parallel data collected using the same methods on Marion Island, will be invaluable components of monitoring impacts of the Marion mouse eradication in years to come. The excitement will take a while to wear off (if it ever does) and knowing that we were fortunate to

visit an (almost) pristine ecosystem is something that none of us will ever forget. Our short visit over 14 - 20 November confirmed how privileged we were, and what the Marion Island ecosystem should really be like, and could be, without House Mice. Let's act where we can and make Marion Island free of mice as soon as is feasible.

The survey team thanks the South African National Antarctic Programme through the Department of Forestry, Fisheries and the Environment (DFFE), the Department of Science and Innovation and the South African National Research Foundation, the officers and crew of the S.A. Agulhas II (African Marine Solutions - AMSOL) and the helicopter crew from Ultimate HELI for making the expedition possible.



By: Azwianewi Makhado (Chief Scientist & Ornithologist, DFFE), Maëlle Connan (Ornithologist, Nelson Mandela University), David Hedding (Geomorphologist, University of South Africa), Charlene Janion-Scheepers (Entomologist, University of Cape Town), Rowan Jordaan (Marine mammal scientist, University of Pretoria), Makhudu Masotla (Ornithologist, DFFE), Thomas Mufanadzo (Environmental Control Officer, DFFE), Chris Oosthuizen (Marine mammal scientist, University of Cape Town), Liezl Pretorius (Veterinarian & Marine mammal scientist, University of Pretoria), Janine Schoombie (Aeronautical engineer, University of Pretoria), Stefan Schoombie (Ornithologist, University of Cape Town), Yinhla Shihlomule (Marine mammal scientist, University of Pretoria), and Elsa van Ginkel (Botanist, University of Pretoria)



### THE SEASON OF GIVING IS HERE!



GIVE A MEANINGFUL CONSERVATION GIFT THIS FESTIVE SEASON. AND SPONSOR A HECTARE OF MARION ISLAND FOR SOMEONE SPECIAL





Photo: Danielle Keys

### **Romario's New Year Appeal for a Mouse-Free Marion Island**

"When we take care of nature, we take care of ourselves"

-Romario Valentine

By John Cooper, News Correspondent, Mouse-Free Marion Project



Above picture: Romario Valentine is a skilled artist, here posing with his paintings of an albatross and a petrel

• outh Africa's Marion Island is the scene of a struggle for survival with global significance. Invasive House Mice, accidentally introduced by humans in the early 19th century, are Preying on the Southern Ocean island's globally important seabirds and invertebrates, adversely impacting its vegetation and undermining the integrity of the entire ecosystem. With each passing moment, this dangerous intruder poses an ever-growing threat to the remarkable biodiversity of Marion, compelling an urgent response to protect this important site and its cherished seabirds.

Now, as it is summer, most of Marion Island's seabirds have returned to their breeding grounds. But the island is no longer the haven it used to be. The Mouse-Free Marion Project aims to eradicate the "killer" mice by an aerial drop of rodenticide-laced cereal bait over the entire island during winter 2026. To this end it has been looking towards the informed and interested public to Sponsor a Hectare with a R1000 donation. To date, 6700 hectares (a little over one-fifth of the 30 000-ha target) have been sponsored by more than 1500 caring individuals. Too much for your pocket? There is now an opportunity for those who find R1000 a little steep. Online crowdfunding platforms such as BackaBuddy allow for smaller contributions from those who can spare R100 or more, but perhaps not as much as R1000, the chance to feel they are part of the project. Of course, donations of more than the cost of a single hectare will also be greatly welcomed!

Romario Valentine is an 12-year-old environmental campaigner who received BirdLife South Africa's Owlet Award in 2022. Romario has been an active environmentalist since the age of six. He is the author of Protect our Planet - Take action with Romario which was released in September 2022. It's a fun science academic book that addresses climate change and environmental challenges including guidance on how anyone can become an 'earth guardian'. To date Romario has done over 250 beach clean ups and planted or sponsored over 455 trees in 31 countries around the world.

Last summer, Romario raised over R21 000 for the Mouse-Free Marion Project via a successful online appeal, Romario's Seabirds Christmas Gift, more than twice his original target (click here). Romario is now repeating his appeal a year later, asking you to contribute - for the first time or once again with the aim of raising as much, or more,

> Romario Valentine proudly holds his 2022 Owlet Award sculpture and accompanying certificate received at a BirdLife South Africa function in September last year



than he did a year ago, repeating his campaign as Romario's New Year Appeal for <u>a Mouse-Free Marion Island</u>. This allows you to contribute the sum you can afford, knowing that your contribution will join with others to sponsor a hectare (or more) of Marion Island.

In making your donation, please consider clicking on "Fees Covered', so that the MFM Project will receive the full amount you have chosen. To subscribe to the free MFM Project's guarterly newsletter provide your details at here.

To learn more about Marion Island and the epic struggle it faces with the House Mouse, watch a video narrated by singer Zolani Mahola, "The One Who Sings" of Freshly Ground fame.

To contribute to Romario's latest appeal go to <a href="https://www.backabuddy.co.za/champion/">https://www.backabuddy.co.za/champion/</a> project/romarios-seabirds-christmas-gift.

### The Mouse-Free Marion Project delivers a plenary lecture to the South African Antarctic community

By: John Cooper (News Correspondent)

he South African National Antarctic Programme (<u>SANAP</u>) recently held its 6th Research Symposium in the Houw Hoek Hotel, in a country setting near Grabouw in the Western Cape. The meeting was attended by 177 scientists from all the disciplines involved with Antarctic, sub-Antarctic and Southern Ocean research within South Africa. Among those present were representatives of the South African National Research Foundation, the South African Polar Research Infrastructure and the South African Department of Science and Innovation. Oral and eposter presentations, along with associated meetings and events, were held over five days from 27 November to 1 December. The meeting was hosted by the University of Stellenbosch with Ria Olivier, Principal Investigator, Antarctic Legacy of South <u>Africa</u>, efficiently leading the Organizing Committee.

To kick off the last full day of the symposium, the Mouse-Free Marion (MFM) Project's Assistant Project Manager, Sue Tonin, gave an invited 30-minute plenary lecture entitled "Eradicating Invasive House Mice Mus musculus from Marion Island: Gains and Challenges" to a full audience. Her abstract follows:



Sue Tonin presents her plenary lecture, backed by MFM pull up banners; photograph by Robyn Adams

"This conservation management action is a once-off eradication of introduced and increasingly damaging House Mice that are driving Marion Island into a state of ecological crisis by eating and burrowing into plants and preying on invertebrates and seabirds. Because of their isolation, islands host unique species assemblages that contribute disproportionately to global biodiversity; because they often lack indigenous terrestrial predators, these biotas are particularly vulnerable to invasive alien species. Approximately 5% of the plant species on Marion Island appear to be endemic to the Prince Edward Islands group, as are some of the insects eaten by mice on Marion Island (three weevil and one moth species). Several species of the native invertebrate fauna have been reduced to tiny proportions of their pre-mouse populations, thereby altering nutrient cycling and other key ecological processes.

Marion Island is a globally significant breeding island for 28 seabird species. Left unchecked, mouse impacts are expected to lead to the local or functional extinction of 19 of these within an estimated 30-100 years.

Removal of invasive alien predators from islands is a highly effective biodiversity conservation tool. Preparations to eradicate House Mice from Marion Island commenced with a feasibility study in 2015. Subsequent planning has been informed by best practice principles and guidelines developed over decades on similarly invaded islands owned by New Zealand, Australia, Mexico, the USA, France, and other member states of the EU, amongst others.

Right: The MFM Project Team at the 6th SANAP Research Symposium. From left: John Cooper, Ria Olivier (Antarctic Legacy of South Africa), Robyn Adams and Sue Jackson; photograph by Greg Hofmeyr

Below: A gathering of marine ornithologists attending the SANAP Research Symposium. MFM's Sue Tonin is standing right



The eradication is being planned and will be undertaken by the Mouse-Free Marion (MFM) Project partnership between BirdLife South Africa and the Department of Forestry, Fisheries and the Environment (DFFE), assisted by many organisations and individuals. Custom-formulated rodenticide bait will be broadcast from helicopters, the only approach that has proven successful for



large oceanic islands. Comprehensive bait coverage of every part of the island, essential for success, will be guided by advanced GPS tracking and GIS mapping.

Successful eradications of House Mice from Southern Ocean islands include Macquarie Island (12 875 ha), Antipodes Island (2025 ha), Coal Island (1189 ha), Enderby Island (710 ha), lle Chateau (220 ha), and parts of South Georgia Island (4 932 ha of which had mice). A powerful motivator is the dramatic population recoveries of seabirds and other fauna following mouse removal on these islands. At 30 000 ha, Marion is by far the largest island on which such an eradication will be attempted in a single operation. We are closely examining failed mouse eradication attempts such as those on Gough and Midway Islands to incorporate lessons learned there into our planning. Assessment of risks, including those to non-

target species, is critical to maximise the MFM Project's chances of success and is applied to every phase of planning and execution. Assessing and monitoring the ecological outcomes of the mouse eradication initiative will require a long-term monitoring framework, which makes use of pre-eradication baseline data against which post-baiting monitoring can be compared."

Support for Sue's plenary in the appreciative audience came from Robyn Adams, MFM Communications Officer and Project Assistant, and John Cooper, MFM News Correspondent.

The Symposium ended on Antarctica Day with a themed Antarctic Breakfast, followed by a Closing Ceremony.

With profound thanks to Ria Olivier, Antarctic Legacy of South Africa, University of Stellenbosch.

Below: A sylvan setting in the Western Cape mountains proved a pleasant venue for the 6th SANAP Research Symposium, photo: Antarctic Legacy of South Africa



# SEASON'S Greetings From the Mouse-free Marion Project





White-chinned Petrel, photo: Michelle Risi

### Get involved and help make a Mouse-Free Marion possible!

- For more information on the Project, visit our website at <u>mousefreemation.org</u> or contact us at: info@mousefreemation.org
- To make a gift of any amount or support the project by sponsoring a hectare (or more) visit our website or contact: donations@mousefreemarion.org
- Stay up to date: follow us on Facebook (Mouse-Free Marion) and Instagram (@mousefreemarion) or sign up on our website to receive project news alerts

Cover Photo: Grey-headed Albatrosses, photo: Michelle Risi

Saving Marion Island's Seabirds





forestry, fisheries & the environment Department: Forestry, Fisheries and the Environment REPUBLIC OF SOUTH AFRICA

The Mouse-Free Marion Project is a registered non-profit company (No. 2020/922433/08) in South Africa, established to eradicate invasive albatross-killing mice on Marion Island in the Southern Ocean. The project was initiated by BirdLife South Africa and the South African Department of Forestry, Fisheries and the Environment. Upon successful completion, the project will restore the critical breeding habitat of over two million seabirds, many globally threatened, and improve the island's resilience to a warming climate. For more information or to support the project please visit mousefreemarion.org