

# Saving Marion Island's Seabirds™

## The Mouse-Free Marion Project



### Expressions of Interest for Development of a Research Plan for the Mouse-Free Marion Project

09 February 2024

#### Introduction

The Mouse-Free Marion (MFM) Project is a project established as a partnership between BirdLife South Africa (BLSA) and the South African Department of Forestry, Fisheries and the Environment (DFFE).

The objective of the project is to eradicate invasive house mice (*Mus musculus*) from Marion Island.

Marion Island (30,000 ha) is one of the two islands that comprise the Prince Edward Islands, located in the southern Indian Ocean some 1,900 km south-east of South Africa. The islands are gazetted as a Special Nature Reserve and are surrounded by a large Marine Protected Area.

Mice were accidentally introduced by sealers early in the 19<sup>th</sup> Century. Over the past 25 years, as mice have significantly reduced invertebrate biota and a drying climate has favoured mouse breeding conditions, densities of mice have increased. Evidence of mice attacking seabirds has been gathered over the past 20 years and such attacks are now commonplace. Mouse attacks on burrowing petrels and prions as well as giant petrels and four species of albatross have been recorded.

The eradication of mice from Marion Island is considered a critical intervention to safeguard the viability of these globally important seabird populations.

A Feasibility Study undertaken in 2015 identified a number of challenges but concluded that eradication of mice from Marion Island was feasible.

The MFM Project intends to eradicate mice from Marion Island by distributing bait containing a second-generation anticoagulant toxin from under-slung helicopter buckets. The timing for project implementation is not yet finalised, and is pending on both sufficient funds being raised, and all of the requisite regulatory approvals and procurement processes being completed. The implementation phase is unlikely to occur before 2026 or possibly 2027.

Funding for the MFM Project will be primarily from donations, with the South African government contributing support from DFFE (use of the South African government's Antarctic research vessel, *S.A. Agulhas II* to support the operation, the provision of fuel requirements, supporting long-term monitoring efforts, amongst others).

Marion Island will be the largest rodent eradication to be attempted in a single operation (South Georgia, while larger, was completed in three phases, each two years apart) and the largest where mice are the sole target species. A larger project still – Auckland Island, targeting mice, pigs and cats – is in the planning stages and has completed a feasibility study, but the project is not currently funded.

## MFM Planning Progress

Planning for the MFM Project has been underway since a Feasibility Study was undertaken in 2015.

In 2018, a Draft Project Plan and Draft Operational Plan were prepared, and both documents have been revised since 2021.

A document outlining eradication project activities relative to provisions in the Prince Edward Islands Management Plan (PEIMP) was prepared in 2021, and has since been adapted to provide the basis for environmental assessment of the project and secure the necessary environmental authorisations – a process that is still on-going.

A number of trials have been conducted on Marion Island, including work in 2018, 2022 and 2023. Trials have investigated captive management of sheathbills (a non-target species at risk of mortality due to bait or toxic invertebrate consumption), palatability of bait to mice using various toxin concentrations, bait uptake and bait availability, and attractiveness of bait to (non-native) slugs.

A specialist Advisory Panel on Non-Target Species has evaluated the intended operational method assessed the likely non-target species impacts and provided advice on possible mitigation measures.

A submission to the DFFE has resulted in approval for the project from the department's Marine Animal Ethics Committee.

An Expression of Interest document for the procurement of aerial services to implement the project has been prepared, but given the decision (in September 2023) to defer the operational year, has not yet been released.

Throughout, fund-raising has been a focus and has continued as an embedded part of the project workload.

A Monitoring Plan (baseline ecological data) has largely been completed and is being implemented by university institutions and DFFE staff, with support from the MFM Project.

## Project structure

The MFM Project is a function of a partnership between BLSA and the DFFE, which was established by means of a Memorandum of Understanding (MoU). The MFM Project is overseen by a Project Steering Committee. BLSA established the Mouse-Free Marion Non-Profit Company (NPC) to fulfil its obligations with respect to the MoU. The NPC is overseen by a Board, and MFM Project staff are employed by the NPC.

In terms of staffing, the project team currently comprises seven; a Project Manager, Assistant Project Manager, Operations Manager, Communications Officer & Project Assistant, Development Officer, News Correspondent (a voluntary position) and an Admin and Finance Officer. A contract Fundraising Manager role has recently concluded and discussions are currently underway to consider revisions to the MFM Fundraising Strategy and the management structure to support it. The MFM Project is also supported by a number of staff within the DFFE and BLSA.

Several committees oversee various functional and governance roles, including the Project Steering Committee (which provides the overall governance function for the project), the NPC Board, an Audit and Risk Committee (of the Board), Fundraising Committee, Management Committee, Communications Committee and a Scientific and Technical Advisory Group.

The MFM Project Plan outlines the management and governance aspects of the project.

The MFM Project has employed a Research Assistant for the 2022/23 and 2023/24 years, , who deploys to the island in April of one year and returns in May the following year. This position is also intended to be filled for the 2024/25 year. Within the constraints of not being able to undertake solo field work on Marion Island, this position is the only current staff resource available to undertake any trials that are embarked upon, that are outside of the annual changeover period. During the annual changeover period in early-April to mid-May, up to two additional MFM Project staff may be on the island for approximately three weeks.

## Research

As noted, there have been a number of trials conducted to date. However, following discussions at a Mouse Eradication Workshop held in New Zealand in November 2023 (that considered the recent failed outcomes of attempts to eradicate mice from Gough Island and Midway Atoll) and a meeting of the NZ Department of Conservation Island Eradication Advisory Group shortly thereafter, the need for additional trials has been recommended.

The current bait under consideration for the project is Pestoff 30R as a 2-g, 10-mm diameter pellet (containing 30 ppm of brodifacoum as the active ingredient). Most trials undertaken to date on Marion Island have used the standard formulation of this product, Pestoff 20R, containing 20 ppm of brodifacoum, or the non-toxic version of the same bait. If a higher concentration than 30 ppm is suggested, an elaboration of the rationale justifying this should be included.

There has been recent discussion about the possibility of using a smaller bait pellet (0.6 g, 5.5 mm) that is designed specifically for mice, a suggestion that has both support and opposition from different quarters.

Consideration should be given in the development of the Research Plan as to whether there is research that would be appropriate to undertake that can assist in informing whether the use of the smaller bait pellet should be considered further.

## Research Plan

The MFM Project team consider that the best approach to address the current research needs of the project is through the preparation of a comprehensive Research Plan. With the guidance of a Research Plan, we can more readily focus on and plan ahead for research requirements, rather than conducting research in a more ad hoc way, although we recognise that there may be evolving issues that may still require additional research to resolve as they become evident.

## Expression of Interest

This call for Expressions of Interest (EOI) seeks submissions from suitably experienced and qualified eradication practitioners or eradication researchers to prepare a Mouse-Free Marion Project Research Plan.

‘Suitably experienced’ means practitioners with an extensive background in eradication projects on islands, especially those involving mice as the target species and aerial application of rodenticide bait from helicopters as the delivery mechanism.

MFM is open to submissions involving more than one person, recognising that eradication practitioners often have different strengths and that a collaboration may offer a more robust Research Plan.

## Brief for a MFM Research Plan

Your EOI submission should take into account the following aspects that will need to be considered when developing the Research Plan.

1. Previous trials undertaken from 2018 to 2023 should be reviewed and results accounted for in an overall Research Plan (for example, if a particular trial is considered necessary and has already been done, specify it as a necessary trial and present a brief outcome summary, or highlight shortcomings in what has already been done that may need replication or further work).
2. Incorporate the baiting strategy currently in the Operational Plan.
3. Prioritise all recommended trials into ‘Essential’ (need to know) and ‘Desirable’ (nice to know) categories, with a brief explanation of why each trial has been allocated into the respective categories. The focus should be on ‘Essential’ trials.
4. Consider the *feasibility* of recommended research / trials, bearing in mind the primary opportunities to undertake research being a) conducted during the annual changeover voyage in April/May each year (~3 weeks on-island) or b) conducted by possibly one field assistant during the rest of the year, and the difficulty (and in some cases cost) of accessing some equipment or support (e.g. helicopters). This aspect will need discussion with MFM Project staff for guidance.
5. Preparation of the Research Plan will include discussions with MFM Project staff on an on-going basis.
6. Summarise relevant published and grey literature sources on mouse biology pertaining to eradication projects, especially papers addressing mouse biology on Marion Island.
7. Incorporate or review research recommendations prepared by Greg McClelland in 2016.
8. In conjunction with MFM Project staff, consider discussions points and findings from a Mouse Eradication Workshop held in New Zealand in 2023 (proceedings not yet collated).
9. Incorporate information from the Non-Target Advisory Panel Report prepared for the MFM Project.
10. Present outlines for recommended trials in two sections:
  - A) Trials to be undertaken *before* the eradication to inform the eradication design (noting that this component is the most urgent to progress) and
  - B) Monitoring to be undertaken *during* the eradication to compare baiting outcomes with the Operational Plan prescription.
11. Consider synergies or trial results from other similar mouse eradication projects.

12. For each recommended trial or research, outline (possibly in tabular form) the following aspects:

- Reason for the trial/research (why are we doing it and how will we use the information?)
- Trial design (timing and specifications – how to do it)
- What will be required to conduct the trial
  - Materials
  - Equipment
  - Support (logistics requirements)
  - Approvals (where known)
  - Estimated budget (where known)
  - Staff required
  - Timeframe for commencement and completion (when and for how long will the trial take place, how long will data collection and analysis, and reporting take?)

13. Consider whether new trials should be conducted using Pestoff 5.5 mm bait, or whether any of the trials previously undertaken using 10 mm bait should be repeated with 5.5 mm bait.

The MFM Project team will arrange for the research plan to be peer-reviewed by two independent experts with appropriate experience.

## Supporting documents

A number of relevant background documents will be provided to the successful applicant to inform the development of the Research Plan.

These include (but are not restricted to):

- Non-Target Species Advisory Panel Report.
- Feasibility Study (John Parkes, 2015) – the document title is ‘Eradication of House Mice *Mus musculus* from Marion Island: a review of feasibility, constraints and risks’.
- Draft MFM Project Plan.
- Draft MFM Operational Plan (current version).
- Marion Island Research Programme (G. McClelland, 2016).
- Compendium of research papers pertaining to mouse biology on Marion Island.
- A summary of trials already undertaken on Marion Island to inform mouse eradication, with trial reports (where available).
- Information on Mouse Eradication Workshop held in NZ in November 2023 (when available), but initially including background information provided to workshop participants.

- A digital topographic map of Marion Island.
- NZ Dept of Conservation IEAG feedback to MFM.

## Timeframe

The timeframe to guide the Research Plan completion will be finalised with the contractor.

The following timeframe is provided as an initial guide.

Action	Key dates for Research Plan
Distribution of EOI document	9 <sup>th</sup> February 2024
Closing date for receipt of EOI submissions	26 <sup>th</sup> February 2024
Notification to EOI submitters	8 <sup>th</sup> March 2024
Contract signed for delivery of requested services	13 <sup>th</sup> March 2024
Background documentation sent to selected contractor	13 <sup>th</sup> March 2024
Draft framework for Research Plan submitted to MFM	26 <sup>th</sup> March 2024
<i>Vessel departs Cape Town for Marion Island</i>	<i>11<sup>th</sup> April 2024</i>
<i>Vessel returns to Cape Town from Marion Island</i>	<i>14<sup>th</sup> May 2024</i>
Draft Research Plan submitted	27 <sup>th</sup> May 2024
Draft Research Plan circulated for peer review	31 <sup>st</sup> May 2024
Peer review of Draft Research Plan received	14 <sup>th</sup> June 2024
Peer review feedback circulated to authors	19 <sup>th</sup> June 2024
Final Research Plan submitted	26 <sup>th</sup> June 2024

## Contact Person

Any issues and discussion during the course of preparing the Research Plan for the MFM Project should be directed to Anton Wolfaardt, MFM Project Manager, at [anton.wolfaardt@birdlife.org.za](mailto:anton.wolfaardt@birdlife.org.za) phone +27 (71) 6229678.

## Submission and closing date

You should submit your EOI document to Anton Wolfaardt, MFM Project Manager by email to [anton.wolfaardt@birdlife.org.za](mailto:anton.wolfaardt@birdlife.org.za) no later than 5pm (South Africa Standard Time) on 26<sup>th</sup> February 2024.

If you are considering submitting an EOI, please register your intention with Anton Wolfaardt, at [anton.wolfaardt@birdlife.org.za](mailto:anton.wolfaardt@birdlife.org.za). This will enable us to notify all interested parties of any changes to the submission date.

Your submission should include the following details:

- The primary contact person (for administrative purposes and contract payments)
- A nominated lead person for the Research Plan and any other nominated person who will be involved in the development of the Research Plan

- A draft framework for preparation of the Research Plan, including collaboration with Mouse-Free Marion staff (in other words, how do you propose structuring the work?)
- For each nominated person:
  - o Name and contact details.
  - o A *Curriculum Vitae* containing academic qualifications and relevant previous experience upon which to base the preparation of the required document.
  - o Whether a field visit to Marion Island is considered a requisite part of your submission and if so, whether you are available to participate in a voyage in April/May 2024 (5 weeks) – see section below.
  - o A timeframe for undertaking the contract with milestones noted.
- A pricing schedule with indicative costs and timing of progress payments, to be invoiced to the MFM Project.

## Visiting Marion Island

Time is now extremely tight to consider participation on the annual changeover voyage to Marion Island, and berths to enable this have not been requested of DFFE. In your submission, you should state whether you consider visiting Marion Island to develop the Research Plan as necessary, desirable or not necessary.

Due to the scarcity of berths on the vessel and the late timeframe, the MFM Project cannot offer any guarantees that a visit, if considered necessary or desirable, will be possible.

Your submission should also outline whether you consider a visit to South Africa necessary, in order to undertake discussions with MFM and DFFE staff, or whether the review can be conducted with discussions occurring on-line.