



THE RATHLIN ISLAND PROJECT: Update of the feasibility of eradicating brown rats (*Rattus norvegicus*) and ferrets (*Mustela furo*) from Rathlin Island, Northern Ireland.

SUMMARY

1. The feasibility study for the eradication of brown rats and ferrets from Rathlin Island was completed in 2011 for the Royal Society for the Protection of Birds (RSPB) and outlined the assessment of the feasibility of rat and ferret eradication from Rathlin Island and provided a detailed operational plan (Bell 2011).
2. Wildlife Management International Ltd (WMIL) was approached by the Causeway Coast and Glens Heritage Trust to update the costs and any technical requirements since the original feasibility study and operational plan was completed. This paper updates the original work and should be read in conjunction with the original document.
3. Rathlin Island supports nationally and internationally important seabird and ground-nesting bird populations and the proposed eradication of rats and ferrets will protect and enhance the seabirds and ground-nesting birds of the island.
4. Rats and ferrets continue to have an impact on the biodiversity of Rathlin and continue also affecting the livelihood, health, enjoyment and lifestyle of the local community.
5. Following on from the RSPB 2011 interviews, the Causeway Coast and Glens Heritage Trust re-interviewed as many residents as possible between January and March 2017 to determine the level of support for the proposed eradication and provide more information to their questions and address any concerns. It was apparent from this updated community feedback that rats and ferrets were still having an impact on the biodiversity of the island as well as affecting the lifestyle of the Islanders. Most thought rats were a problem with almost everyone having had problems with rats. Nearly all residents also thought ferrets were a problem although they did not affect every person, only those with stocks or hens. Many islanders had stopped keeping chickens due to ferrets, but would choose to keep them once ferrets were eradicated.
6. All islanders that were interviewed supported the eradication of rats and ferrets from Rathlin. Although some individuals would like further information on the process and technical aspects of the operations. All felt it was important that the contractor had very good communication with the community and where possible, the employment or involvement of residents was vital.
7. Like the 2011 interviews, Islanders felt that waste management needed to be improved before the project began.

8. Mitigation and technical information was provided by the Causeway Coast and Glens Heritage Trust to answer Islander concerns. Further information is available if required.
9. As stated in Bell 2011, the greatest risk to the success of any eradication programme on Rathlin Island is the requirement of complete access to all areas (including gardens and buildings) on the island. This remains the case and is particularly important for the rat eradication aspect, although access to all land is vital for the ferret eradication aspect as well. If access to large areas of land is denied, the eradication project cannot be successful (or even commence). **It is critical that the permission for access to all land is obtained.** It is important that the Causeway Coast and Glens Heritage Trust works closely with landowners to obtain guaranteed access agreements prior to any eradication programme being undertaken (or even funding applications are made). A number of residents requested that access agreements were negotiated prior to the project commencing. At least five people interviewed requested further information about the access and trapping or bait station placement requirements.
10. **The eradication of rats and ferrets from Rathlin Island is feasible.** A well-planned programme staffed and led by experienced operators with the assistance of technicians and/or volunteers, adequately funded, and supported by the Islanders and other major interested parties, should result in the eradication of rats and ferrets from Rathlin Island.
11. Bell 2011 provides the operational plan for the proposed eradication of brown rats (*Rattus norvegicus*) and ferrets (*Mustela furo*) from Rathlin. The eradication phase of the operation would occur over two years; a winter operation (September to April in a single 180-day baiting operation) for rats and a two-year trapping programme for ferrets. All aspects of bait delivery, trap types, soil and water interaction, non-target species and a risk assessment and mitigation were covered in Bell 2011. This update provides information on technical aspects that have changed within the past 5 years.
12. **As stressed in Bell 2011, the success of the eradication programme is dependent on the participation and support of the entire local community.** It is important that the Islanders maintain an integral role in the planning, preparation and implementation of the eradication programme to ensure its success. Ongoing consultation and communication with the Islanders (and wider interest groups) during the eradication programme will be essential.
13. **Changes to the EU & UK legislation regarding the use of anticoagulant poisons means certain rodenticides are no longer available for use outdoors or in open areas without being included under a stewardship scheme or under a derogation of use permit from the Health & Safety Executive (HSE).** It will be important to obtain this well in advance of the proposed eradication to enable the most suitable toxin to be used for the eradication of rats. It is also a requirement that the use of second-generation anticoagulant rodenticides requires the personnel to be professionally trained (at least to a specific LANTRA grade) and be able to prove they are approved and competent users of rodenticides.
14. **The disposal of used rodenticide waste has also become highly regulated. All used and unused rodenticides must be incinerated in a commercial incinerator as they are now classed as hazardous waste.** This will need to be arranged prior to the eradication

operation. Both the Northern Ireland Environment Agency and Department of Agriculture, Environment, and Rural Affairs will have to be notified of the waste movement and disposal process.

15. The use of a combination of live and kill traps is recommended for targeting ferrets on Rathlin Island. Although there are a number of kill traps available for use for trapping ferrets (as listed as “small ground vermin” under the Spring Traps Approved Order (Northern Ireland) 2012), **the use of DOC 250 kill traps are available in Northern Ireland, but are currently not registered for trapping ferrets. These traps can only be used for grey squirrels, mink, rats and stoats. If the DOC 250 traps can be registered for ferrets, then these trap could also be used in the eradication of ferrets in addition to the live traps.** This will give more options to target ferrets more quickly, humanely and efficiently compared to the extra requirements needed when dealing with live traps (i.e. humanely euthanizing the ferret).
16. **The cost of the proposed rat and ferret eradication project is estimated to be approximately £1,685,000 over a five-year period although this requirement will depend on delivery method, the chosen operators and other factors.** A detailed inventory of equipment and labour has been updated and provided in this document.
17. Funding for the programme has not been secured and will need to be sourced from grants such as the EU Life+ programme or similar Government funding. Project partner agencies could also provide funding, staff time or in-kind support to cover aspects of the project, such as monitoring, rabbit control and equipment, etc.

UPDATE OF THE FEASIBILITY OF THE BROWN RAT AND FERRET ERADICATION ON RATHLIN ISLAND

1 INTRODUCTION

The eradication of rats and ferrets from Rathlin Island has been identified as a priority to protect and enhance seabird and land bird populations as well as enhance public wellbeing and health on the island. A detailed feasibility assessment and operational plan was produced in 2011 by Wildlife Management International Ltd for the Royal Society for the Protection of Birds (Bell, E.A. 2011. The Rathlin Island Project: the feasibility of eradicating brown rats (*Rattus norvegicus*) and ferrets (*Mustela furo*) from Rathlin Island, Northern Ireland. Contract report prepared for the Royal Society for the Protection of Birds).

More recently, the Causeway Coast and Glens Heritage Trust has taken this proposal forward and asked WMIL to update the costs and any technical requirements since the original feasibility assessment and operational plan.

This update should be read in conjunction with the original feasibility assessment and operational plan.

2 INTERVIEWS OF RESIDENTS

The Causeway Coast and Glens Heritage Trust repeated the interviews (using a similar series of questions as those from 2011) with as many island residents as possible to determine the level of support for the proposed eradication (Table 1). Additional information was also provided to address any concerns in regards to baiting, bait station design, rodenticide use, risk to non-target species (particularly pets), access to land and biosecurity.

Two residents said they had changed their views to support the eradication proposal since the 2011 interview and two people interviewed in 2017 were new residents.

It was apparent from this updated community feedback that rats and ferrets were still having an impact on the biodiversity of the island as well as affecting the lifestyle of the Islanders. Many thought rats were a problem for the island and birds, with more residents having had problems with rats since 2011 (i.e. entering property, eating stock feed, damaging goods on the harbour, etc.).

Almost all residents also thought ferrets were a problem although they did not affect every person interviewed. Generally, it was felt that those with farms, small holdings, stocks or hens had issues with ferrets. More residents had lost chickens to ferrets since 2011. Several islanders confirmed that they had stopped keeping

chickens due to ferrets, but many would choose to keep them once ferrets were eradicated.

Table 1 Summary of main results from the questionnaire interviews on Rathlin as completed in 2011 and 2017.

Note: Complete results are available from RSPB (for the 2011 interviews) and from Causeway Coast and Glens Heritage Trust for the 2017 interviews).

	2011 responses	2017 responses
Number of responses	55	33
Number of residents who refused to be interviewed	1	0
Percentage of questionnaires returned by permanent residents	82%	100%
Percentage of questionnaires returned by non-permanent residents	62%	-
Were you aware that seabird and land bird populations were in decline?	96% (yes)	88 % (yes)
Do you think the populations of seabirds and ground-nesting birds on Rathlin should be protected and enhanced?	91% (yes)	85% (yes)
RATS		
Do you think rats are a problem on Rathlin Island?	91% (yes)	91% (yes)
Are rats a problem for you?	64% (yes)	85% (yes)
Would you support the eradication of rats from Rathlin if it was found to be feasible?	96% (yes)	94% (yes)
Would you support the use of rodenticides?	96% (yes)	100% (yes)
Would you allow access for the project team into your buildings to set up and manage the rat bait stations?	80% (yes)	88% (yes)
Would you allow access for the project team in your garden to set up and manage the rat bait stations?	84% (yes)	82% (yes)
Would you allow access for the project team onto your other land to set up and manage the rat bait stations?	44% (yes)	88% (yes)
FERRETS		
Do you think ferrets are a problem on Rathlin Island?	89% (yes)	97% (yes)
Have you lost poultry to ferrets?	18% (yes)	24% (yes)
Would you support the eradication of ferrets from Rathlin if it was found to be feasible?	98% (yes)	100% (yes)
Would you allow access for the project team onto your land to set up and manage the ferret traps?	80% (yes)	94% (yes)
Would you allow access for the project team onto your land to deal with a re-infestation of ferrets (or rats)?	80% (yes)	100% (yes)
GENERAL		
Do you keep any livestock on your property?	29% (yes)	33% (yes)
Do you have any pets?	49% (yes) [70% dogs, 29% cats]	30% (yes) [64% dogs, 36% cats]
Do you own a boat?	29% (yes)	6% (yes)
Would you, in principle support biosecurity measures that prevent re-infestation?	76% (yes)	91% (yes)
Would you be interested in getting involved in the project?	76% (yes)	73% (yes)

A similar number of islanders that were interviewed supported the eradication of rats from Rathlin than in 2011 and all interviewed in 2017 supported the eradication of ferrets from Rathlin. All felt it was important that any contractor selected to complete these eradications had very good communication with the community and where possible, the employment or involvement of residents was vital.

Many felt that they would not be able to assist with the project itself, but would support the work being done. Over 55% would like to be involved in the project either directly as part of the team completing the eradication, providing accommodation, transport or equipment storage, providing information on historical sites and other features, educating guests and visitors to Rathlin, or in support roles such as education, advocacy and writing letters of support.

Most felt that the rat population on Rathlin was too high and was causing issues for farmers and homeowners. Two-thirds of those interviewed felt it was important for tourism and the economy of the island that the rats and ferret were removed, particularly as bird numbers increased and enhanced the tourism experience. Nearly 40% felt the eradication of rats and ferrets would improve the health and well-being of residents and guests to the island. Over 90% felt it would improve the biodiversity of Rathlin if rats and ferrets were eradicated.

Like the early interviews, Islanders felt that waste management needed to be improved before the project began. Many felt that the rubbish storage system they were using (generally sealed bins or wheelie bins) was suitable to prevent rats getting access to alternative food, but that the collection of waste could be improved. Storage of waste near the quay caused higher numbers of rats in that area.

The Causeway Coast and Glens Heritage Trust also provided any technical information to answer any concerns that were raised by Islanders. Most concerns were related to non-target impacts particularly pet cats and dogs, access onto land, trap and bait station placement and how biosecurity would affect their travel and importation of goods.

Nearly 40% of those interviewed requested further information. Most wanted to be kept informed of the progress of the project. Others were interested in additional information on the possible impacts of rabbits following the eradication, details on the life cycle of rats and ferrets, the effects of poison, how the traps would be set, how would the trapped animals be disposed of, risks to people (particularly children), the overall results of the interview survey, any future developments and when the project develops.

3 CHANGES IN ERADICATION METHODOLOGY

A well-planned programme which is staffed and led by experienced operators with the assistance of field staff and/or volunteers, is adequately funded and supported by the Islanders and other major stakeholders, should result in the eradication of rats and ferrets from Rathlin Island. With unobtrusive biosecurity and quarantine measures, the risk of rat re-introduction is low. Ferrets would not be able to reach Rathlin without human assistance. There would be significant benefits to the ecology of the island and particularly ground-nesting birds and seabirds following the eradication project and the health and well-being of the community.

There have been no major changes to the proposed eradication techniques as recommended in Bell 2011. However changes to legislation in regards to the use of second generation anticoagulant rodenticides and registering of particular types of traps means alterations or additional processes must be followed prior to the proposed eradication commencing.

3.1 PRE-ASSESSMENT AND PREPARATORY VISIT

It is important that the professional operator/contractor undertakes a site visit at least six months prior to the eradication programme. This is to complete consultation with each household and landowner to discuss and formalise access agreements, assess any land use changes or developments that may change the processes of the eradication and develop and finalise baiting and trapping methods. It will also be a good opportunity to discuss the programme with all the islanders (to answer any additional questions and/or concerns).

It is vital that the access to land and gardens is arranged prior to this visit and confirmed and formalised at this time.

3.2 RAT ERADICATION

3.2.1 Pre-planning

There are a number of important steps that must be completed prior to the eradication beginning on Rathlin Island including (but not limited to) obtaining access agreements for all landowners, obtain all required permits and approvals (including for bait use, trap use, health and safety, accommodation, etc.), clarification and establishment of suitable waste management systems at individual homes and farms (i.e. rat-proof bins provided, rat-proof compost bins in place correctly, etc.), establishing a suitable waste collection site (e.g. concrete pad, secure cages, fenced, debris cleared, etc.), agreed and tested waste collection procedures and schedule with Moyle District Council, purchase and delivery of bait, traps and materials for bait stations, and miscellaneous equipment, advertising, selecting and arranging contracts for personnel and arranging accommodation and work space for the project personnel.

3.2.2 Resistance testing

It is important that the rats of Rathlin Island are tested for resistance to rodenticides prior to the eradication. This should be completed as soon as possible because if resistance is detected, alternative bait type options would have to be arranged prior to the operation. This testing could be carried out under a specific contract agreement by Reading University (Dr Colin Prescott) under the UK project on resistance in rodents. Reading University has been involved in a number of resistance testing projects for other eradications (such as the Shiant Isles and St Agnes & Gugh, Isles of Scilly).

3.2.3 Bait legislation changes

Regulatory environmental risk assessments undertaken by the Health and Safety Executive (HSE) have concluded that the use of both first and second generation anticoagulant rodenticides (FGAR and SGAR) outdoors present a higher level of risk to non-target species than would normally be considered acceptable. However it was recognised that despite these risks, the outdoor use of rodenticides is necessary as part of properly managed rodent control strategies.

In order to be able to authorise these rodenticides for use outdoors, HSE had to be assured that the risks arising from such use would be properly managed. As such, a number of high-level principles to help industry develop stewardship schemes to assure that rodenticides are being used in a safe and sustainable way have been established. Suppliers placing rodenticide products on the UK market for professional outdoor use are required to demonstrate that they adhere to the UK Government high level principles.

As part of the industry stewardship regime to allow the continued use of rodenticides the Health and Safety Executive (HSE) has announced that from 1 June 2016 those who wish to buy or use 'professional only' anticoagulant rodenticides will need to have certification which demonstrates that they have been trained. This was introduced in order to comply with EU directives. The HSE cannot legally allow the use outdoors of high-risk products without a process to mitigate and manage the risks to wildlife.

All anticoagulant rodenticides, including first-generation types such as warfarin, fail EU environmental risk assessments for outdoor use because of the likelihood of poisoning non-target species. However, without them it would be very difficult to control rats and mice. Consequently the HSE agreed that anticoagulants can be used outdoors only by people who can show they have been trained in recognising the risks and how to minimise them.

By 1 June 2016 all professional use anticoagulant rodenticide baits will be labelled as follows: *"For supply to and use only by professional users holding certification*

demonstrating that they have been trained according to the UK second generation anticoagulant rodenticide (SGAR) stewardship programme requirements.”

Certification that is valid for the purchase and use of rodenticides includes (but is not limited to) LANTRA (Responsible and Effective Control of Commensal Rodents – from 2009 onwards; Rodent Control on Livestock Units – 2013 onwards), Killgerm (Principles of Rodent Control - 2004 onwards), CRRU Wildlife Aware (accredited by BASIS) and RSPH Safe Use of Rodenticides.

Further information on the use and regulations of SGAR is available from the HSE website (<http://www.hse.gov.uk/biocides/eu-bpr/rodenticides.htm>).

3.2.4 Disposal of used and unused rodenticides

The disposal of used (and unused) rodenticide waste has become highly regulated. All used and unused rodenticides must be incinerated in a commercial incinerator as they are now classed as hazardous waste. These will need to be arranged prior to the eradication operation especially identifying a freight company that will be able to arrange transport from Rathlin to the registered incinerator in Northern Ireland. Further details and forms can be downloaded from the Department of Agriculture, Environment, and Rural Affairs website and (<https://www.daera-ni.gov.uk/articles/hazardous-waste>). It will be required to notify the Northern Ireland Environment Agency (NIEA) in advance of the movement of the waste by completing a multi-part consignment note. This will add a cost to the overall project and following experience of this process in Scotland an estimated cost of £25,000.00 has been added to the budget.

3.2.5 Bait type

The main poison should be bromadiolone (a second-generation anticoagulant) available as Contract™ blox (28 g grain-based wax block, manufactured by Bell Labs). Brown rats are more susceptible to bromadiolone. **Ten tonnes of the main bait will be required.** An alternative bait (difenacoum, Neosorexa™, 24 g) will also be needed in case there are any fussy rats which do not choose to consume the bromadiolone bait. **Two tonnes of the alternative bait should be purchased.**

This bait choice will only alter if the resistance testing should suggest a high level of resistance in the rats on Rathlin.

3.2.6 Grid size and bait station design

The grid size (50 x 50 m grid) and bait station design (750 mm lengths of corrugated drainage tube) as outlined in the operational plan should be used. Areas of open or poor habitat on the plateau of Rathlin Island could have a larger grid spacing (90 m x 90 m) to decrease the impact on certain landowner's properties. A smaller grid size targets the rats more quickly and it is important that all high-risk areas (such as seabird colonies, farms, etc.) use the 50 m x 50 m spacing.

3.2.7 Climbers

The higher ledges and isolated cliff sections on Rathlin Island will need climbing equipment and experienced rope-access and/or mountaineering personnel. It will be important to advertise, interview and select these personal well in advance of the eradication operation.

3.3 FERRET ERADICATION

3.3.1 Trap types

Ferrets should be targeted using a combination of live and kill traps and a range of lures.

Live traps should be used in areas that that could have non-target species as this will enable them to be released unharmed. There are a number of cage traps suitable for ferrets available in the UK.

Kill traps should be only used if necessary as an alternative method when ferret numbers are low and getting more difficult to catch. The current kill traps registered for use of ferrets (as listed as "*small ground vermin*" under the Spring Traps Approval Order (Northern Ireland) 2012) within Northern Ireland is the Fenn (Mark VI) Trap, Sawyer Trap, BMI Magnum 116 and Springer No. 6 trap. These kill traps require a cover; either wooden boxes constructed on the island to suit the site or commercially produced plastic covers or natural tunnels (made from rocks, etc.). Two traps are generally used with a lure between the trap. In areas that two traps cannot be set due to position or size of site, one trap is used.

An alternative, humane, kill trap is the DOC 250 trap that has been developed in New Zealand specifically to target ferrets. It has an excellent trapping history and has a 100% kill rate. It has undergone rigorous testing in New Zealand. This trap is now registered within UK and it is legal to use these traps in Northern Ireland for grey squirrels, rats, mink and stoats (under the Spring Traps Approval Order (Northern Ireland) 2012; <http://www.legislation.gov.uk/nisr/2012/25/note/made>). It should be confirmed that the use of these traps can include trapping ferrets to allow use on Rathlin Island.

3.3.2 Grid size

The grid size (i.e. traps set in lines with up to 20 traps per line (10 traps/km², 1 live trap or 2 kill traps per site), set 250 m apart or up to 500 m apart depending on the location and habitat type) as outlined in the operational plan should be used.

4 EQUIPMENT AND COSTS

A budget (including contingencies) covering all stages and requirements of the eradication programme including planning, implementation, pre- and post-monitoring and general expenses has been given (Appendix 6.1). These costs cover

all requirements for a two-year programme on Rathlin Island using 12 professional operators, ten field staff and 4 rope access personnel and pre-and post-monitoring of species by ecologists (Appendix 6.1). As planning and implementation timeframes for the proposed operation are spread over two years, it is important to ensure that funding arrangements account for this and provide for the effective implementation of the remaining stages of the operation.

The cost of the programme is estimated at approximately £1,685,000 over a five-year period (Tables 1, 2 and 8, Appendix 6.1).

Funding for the programme has not been secured and will need to be sourced from grants such as EU Life+ programme.

The project will have to supply all personal protective clothing (PPE) including (but not limited to) wet weather gear and hiking boots or provide an allowance for the purchase of suitable equipment. Other PPE such as gloves, masks, and hats will also have to be provided.

Project equipment includes (but is not limited to) day packs, headlamps, safety equipment (first aid kits, safety blankets, etc.), notebooks, line-of-sight radios, GPS, maps, baiting or monitoring equipment and rope access equipment. A list of equipment is given in Appendix 6.2 (Table 9). This includes equipment required for all phases of the operation. There are a number of items that can be used throughout the operation (such as project laptop, line-of-sight radios, first aid kits, notebooks, marking canes, flagging tape etc.). Although the list is detailed, it is likely that a number of other items will be needed; as such a contingency cost has been added to the budget. It is possible that many of these items will be able to be provided in-kind by partner organisations or other agencies. All products listed are required for the success of the project. It is possible that sponsorship and donations may also reduce costs further.

4.1 OPTIONS FOR SPLITTING OR SAVING COSTS

It would be the most cost effective to complete the rat and ferret eradications as a joint operation with the team based on the island at the same time. However, funding options can be used to cover certain aspects of the project or the responsibility for various aspects of the project could be taken by other agencies. It could also be possible to remove aspects from the budget (such as the rabbit contingency) or be funded using a different funding stream.

Involving a range of project partners may allow in-kind support or the provision of local staff to be included in the project team which would reduce costs overall. Agencies such as RSPB, Wildlife Trusts, Councils, Government agencies, environmental consultancies and the like could be approached.

The bird monitoring (both seabird and land bird) could be completed by RSPB as a project partner by their staff on the island or in the region.

Although it is important that the monitoring is completed as this will provide valuable information on the impact rats and ferrets have been having on the biodiversity of Rathlin Island, it could be reduced to one year for both pre- and post-eradication monitoring, or to only the post-eradication monitoring. Alternatively other funding streams could be targeted for the monitoring section.

The rabbit contingency could also be removed and only implemented (after alternative funding is obtained) if the post-eradication monitoring detects a change in the rabbit population. The local farmers and hunters could also be encouraged to hunt rabbits following the eradication to help keep numbers suppressed.

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5 APPENDICES

5.1 UPDATED BUDGET FOR THE PROPOSED RAT AND FERRET ERADICATION ON RATHLIN ISLAND

The following costs cover the entire project; planning, pre- and post rat removal research, implementation and monitoring. The eradication programme will need 12 professional operators, 10 field staff and 4 climbers.

Table 2 Costs for the proposed Rathlin Island rat and ferret eradication project.

ITEM		EXPLANATION	No.	COST	TOTAL COST	NOTE
PRE-ERADICATION MONITORING (YEARS 1 & 2)	STAFF	Seabirds (April to September), one week/month for six months/year	12	£400.00	£4,800.00	1
		Land birds (April to September), one week/month for six months/year	12	£400.00	£4,800.00	
		Invertebrates (quarterly for one year), one week/month for four months	8	£400.00	£3,200.00	
		Vegetation (quarterly for one year), one week/month for four months	8	£400.00	£3,200.00	
		Rabbits (quarterly for one year), one week/month for four months	8	£400.00	£3,200.00	
		Rats, to obtain resistance samples	2	£400.00	£800.00	
	TRAVEL	Travel (return); Belfast to Ballycastle (by bus), 24 trips/year (plus one for rat samples)	49	£30.00	£1,470.00	2
		Travel (return) to Rathlin (by ferry), 24 trips/year (plus one for rat samples)	49	£12.00	£588.00	3
	ACCOMMODATION	On Rathlin, for 5 personnel, one week/month for six months/year	12	£500.00	£6,000.00	4
	SUSTENANCE	Food on Rathlin, for 5 personnel, £100/week/person	50	£100.00	£5,000.00	5
EQUIPMENT	Equipment (as per Appendix 5.2)	1	£15,000.00	£15,000.00		
REPORTING	Data entry, analysis and reporting	10	£400.00	£4,000.00	6	
Sub-total					£52,058.00	
PRE-ERADICATION ASSESSMENT, BIOSECURITY PLAN AND PREPARATION VISIT	STAFF	WMIL Project Supervisor	4	£3,200.00	£12,800.00	7
	TRAVEL	NZ to Rathlin, WMIL Project Supervisor	1	£3,000.00	£3,000.00	8
	ACCOMMODATION	Accommodation in Belfast, one month	4	£500.00	£2,000.00	9
		Accommodation on Rathlin, two months	8	£500.00	£4,000.00	
	SUSTENANCE	Food in Belfast and Rathlin, £100 per week	12	£100.00	£1,200.00	10
	EQUIPMENT	Equipment (as per Appendix 5.2)	1	£15,000.00	£15,000.00	
	WMIL OVERHEADS		1	£2,250.00	£2,250.00	11
	Sub-total					£40,250.00

ERADICATION AND INTENSIVE MONITORING	STAFF	WMIL Project Supervisor, 2 ½ years	30	£3,200.00	£96,000.00	12
		WMIL Team Leader, Rats, 1 year	12	£2,000.00	£ 24,000.00	13
		WMIL Team Leader, Ferrets, 2 ½ years	30	£2,000.00	£ 60,000.00	
		WMIL Technicians, Rats, 6 personnel, 8 months per person	48	£1,600.00	£ 76,800.00	14
		WMIL Technicians, Ferrets, 3 personnel, 2 years per person	72	£1,600.00	£ 115,200.00	
		Rope Access Team, 4 personnel, 8 months	32	£2,500.00	£80,000.00	15
		Field staff, Rats, 8 personnel, 8 months	64	£1,400.00	£89,600.00	16
		Field staff, Ferrets, 2 personnel, 2 years per person	48	£1,400.00	£67,200.00	
	TRAVEL AND ON-ISLAND TRANSPORT	Airfares and UK travel, 6 personnel (remainder from UK), NZ to Rathlin	6	£3,000.00	£18,000.00	17
		Airfares and UK travel [Rope Access personnel, 4 personnel, NZ to Rathlin	4	£3,000.00	£12,000.00	18
		Internal UK travel to Rathlin for UK-based Technicians and field staff	16	£500.00	£8,000.00	19
		On-island transport, Landrovers (including fuel and maintenance)	3	£25,000.00	£75,000.00	20
		On-island transport, Quad bikes (including fuel and maintenance)	4	£5,000.00	£20,000.00	
		Trailers	2	\$2,000.00	£4,000.00	
	ACCOMMODATION	For up to 26 personnel, 2 ½ years	30	£3,000.00	£90,000.00	21
	SUSTENANCE	Food for 26 personnel for 8 months, 6 personnel for an additional 22 months, total 340 weeks	340	£400.00	£136,000.00	22
	BAIT (WAX BLOCKS)	Bromadiolone(Contra [®]), 10 tonnes, 8 kg buckets	10	£7,200.00	£72,000.00	23
		Difenacoum (Neosorexa [®]), 2 tonnes, 10 kg buckets	2	£7,200.00	£14,400.00	
	STATIONS	Bait stations (including lids), unperforated drainage tube (c.£200 for 100 m, c. 60 rolls) and wires (including crow clips, c.£95 for 200 m, c.115 rolls)	6000	£3.82	£22,925.00	24
		Bait stations, lockable, commercial	250	£8.99	£2,244.50	
		Monitoring points, wires (c.£95 for 200 m, 16 rolls)	10000	£0.16	£1,600.00	
	TRAPS	Fenn (Mark VI) or equivalent	250	£25.00	£6,250.00	25
		Live traps	600	£50.00	£30,000.00	
		Wood for covers (to be constructed) or commercial covers (for kill traps)	300	£25.00	£7,500.00	
	LURES	Commercial rabbit lures	500	£25.00	£12,500.00	
	EQUIPMENT	Various, as listed in Appendix 5.2	1	£50,000.00	£50,000.00	26
	BOAT	Boat charter to reach rock stacks	24	£100.00	£2,400.00	27
	FREIGHT	Freight costs on Rathlin Island Ferry			£10,000.00	28
	BAIT DISPOSAL	Used and unused rodenticide disposal (including freight)	1		£25,000.00	
WMIL OVERHEADS	For three year project			£75,000.00	29	
Sub-total					£ 1,303,619.50	

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LONG-TERM MONITORING (RATS)	STAFF	Monitoring for surviving rats, one week/month for 18 months	18	£400.00	£7,200.00	30
	TRAVEL	Travel from Belfast to Ballycastle (by bus), 1 return trip per month for 18 months	18	£30.00	£540.00	
		Travel to Rathlin (by ferry), 1 return trip per month for 18 months	18	£12.00	£216.00	
	ACCOMMODATION	Accommodation on Rathlin, for 1 person, one week per month for 18 months	18	£500.00	£9,000.00	
	SUSTENANCE	Food on Rathlin, for 1 person, one week per person per month for 18 months, £100 per month per person	18	£100.00	£1,800.00	
	EQUIPMENT	Equipment (as per Appendix 5.2)	1	£15,000.00	£15,000.00	
	REPORTING	Data entry, analysis and reporting, quarterly reporting (6 reports over 18 months)	6	£400.00	£2,400.00	
Sub-total					£ 36,156.00	
FINAL CHECK (RATS)	STAFF	WMIL Project Supervisor	4	£3,200.00	£12,800.00	31
		WMIL Technicians, 5 personnel	15	£1,600.00	£18,750.00	
	TRAVEL	Airfares and UK travel [WMIL staff, 2 personnel (remainder from UK), NZ to Rathlin	2	£3,000.00	£6,000.00	
		Internal UK travel to Rathlin for WMIL Technicians	4	£500.00	£2,000.00	
	ACCOMMODATION	Accommodation on Rathlin, for 6 personnel, for 3 months	12	£500.00	£6,000.00	
	SUSTENANCE	Food on Rathlin, for 6 personnel, £100.00 per person per week, for 3 months	12	£600.00	£7,200.00	
	EQUIPMENT	Equipment (as per long-term monitoring, Appendix 5.2)	1	£10,000.00	£10,000.00	
WMIL OVERHEADS		1	£5,000.00	£5,000.00		
Sub-total					£67,750.00	
QUARANTINE AND CONTINGENCY	STAFF	Monthly check of permanent bait stations and rodent motels, including data entry, analysis and reporting	1	-	-	32
	PERMANENT BAIT STATIONS	Wooden boxes (stained), hinged and lockable, individually numbered, warning labels, etc.	100	\$50.00	\$5,000.00	
	EQUIPMENT	Equipment (as per Appendix 5.2)	1	£5,000.00	£5,000.00	33
Sub-total					£10,000.00	
POST-ERADICATION MONITORING (TWO YEARS)	STAFF	Seabirds (April to September), one week/month for six months/year	12	£400.00	£4,800.00	34
		Land birds (April to September), one week/month for six months/year	12	£400.00	£4,800.00	
		Invertebrates (quarterly for one year), one week/month for four months	8	£400.00	£3,200.00	
		Vegetation (quarterly for one year), one week/month for four months	8	£400.00	£3,200.00	
		Rabbits (quarterly for one year), one week/month for four months	8	£400.00	£3,200.00	

	TRAVEL	Travel (return); Belfast to Ballycastle (by bus), 24 trips/year	48	£30.00	£1,440.00	
		Travel (return) to Rathlin (by ferry), 24 trips/year	48	£12.00	£588.00	
	ACCOMMODATION	On Rathlin, for 5 personnel, one week/month for six months/year	12	£500.00	£6,000.00	
	SUSTENANCE	Food on Rathlin, for 5 personnel, £100/week/person	50	£100.00	£5,000.00	
	EQUIPMENT	Equipment (as per Appendix 5.2)	1	£5,000.00	£5,000.00	
	REPORTING	Data entry, analysis and reporting	10	£400.00	£4,000.00	
	Sub-total					
RABBIT CONTROL (2 YEAR CONTINGENCY)	STAFF	Rabbit control (trapping or shooting), one week per season, annual control for 2 years, 2 hunters/shooters	8	£1,000.00	£8,000.00	35
	TRAVEL	Travel to Rathlin from Belfast (by bus and ferry), 4 trips per year per person, annual control for 2 years	16	£31.00	£496.00	
	ACCOMMODATION	Accommodation on Rathlin, for 2 personnel (shared, self-catering), one week per season, annual control for two years	8	£500.00	£4,000.00	
	SUSTENANCE	Food on Rathlin, for 2 personnel, one week per person per season, annual control for two years	8	£200.00	£1,600.00	
	EQUIPMENT	Equipment (as per Appendix 5.2)	2	£2,000.00	£4,000.00	
	REPORTING	Data entry, analysis and reporting, 1 week/year/person	2	£300.00	£600.00	
	Sub-total					
CONTINGENCY		General contingency to cover delays to the project, increased costs for travel, fuel, food, equipment and other unforeseen items or aspects of the project.	1	£50,000.00	£50,000.00	36
	Sub-total					£50,000.00
SUB TOTAL (PRE-RAT ERADICATION MONITORING – Years 1 & 2)					£52,058.00	
SUB TOTAL (PRE-RAT ERADICATION ASSESSMENT AND PREPARATION)					£40,250.00	
SUB TOTAL (RAT ERADICATION AND INTENSIVE MONITORING)					£1,303,619.50	
SUB TOTAL (LONG-TERM MONITORING)					£36,156.00	
SUB TOTAL (FINAL CHECK)					£67,750.00	
SUB TOTAL (BIOSECURITY - QUARANTINE AND CONTINGENCY)					£10,000.00	
SUB TOTAL (POST-ERADICATION MONITORING – Years 3 & 4)					£41,228.00	
SUB TOTAL (RABBIT CONTROL – 2 year contingency)					£84,472.00	
SUB TOTAL (GENERAL CONTINGENCY)					£50,000.00	
TOTAL					£1,685,533.50	37

Budget notes

1. The two years of pre-eradication monitoring should be undertaken by suitably qualified personnel (seabird, land bird, invertebrate, vegetation and rabbit). It will require baseline data to be assessed to determine recovery after the eradication has finished. This also includes an additional person to trap rats to collect samples for the resistance testing; this should occur at least one year prior to the eradication start date.
2. Transport to from Belfast to Ballycastle only. This may increase if researchers from other areas are used or may be reduced if local personnel or Islanders are used.
3. Transport to Ballycastle to Rathlin Island will be by the Rathlin Ferry Company. It is assumed there will be 1 trip per person per month. This may be reduced if local personnel or Islanders are used.
4. It may be possible to reduce the amount of time living on the island (depending on the survey requirements), but the budget has assumed that certain team members will be there for one week each month for six months. This is budgeted as all team members live in the same accommodation at the same time (i.e. all research is done at the same time).
5. The standard food allowance is assessed as £100.00 per person per week (as per UK tax regulations).
6. This covers one week of each specialist's time per year to enter and analyse the data and report to the stakeholders.
7. This is a four-month preparation period. The WMIL project supervisor would visit Rathlin Island for three months (at least 6-month prior to eradication operation) to consult with the community, reassess the island, ensure that access agreements, waste management, stock feed storage and other requirements were in place. The WMIL Project Supervisor also will spend a month in Belfast assisting with permit and approval requirements, meetings and other pre-eradication procedures. This covers preparation time, time on Rathlin Island and reporting. DNA samples from rats will be collected during this trip either by WMIL or relevant researcher. This also includes time to prepare the Biosecurity Plan for the island.
8. Travel costs include airfares and travel for the WMIL Project Supervisor from New Zealand to Rathlin (via Belfast), accommodation and other expenses on route.
9. Accommodation in Belfast and Rathlin in self-catering facilities.
10. The standard food allowance is assessed as £100.00 per person per month (as per UK tax regulations).
11. WMIL overheads include costs such as office costs, insurance etc.
12. The WMIL project supervisor would be involved for 2 ½ years which includes preparation time in New Zealand and UK, time on Rathlin Island for the eradication and final report production and is in charge of overall eradication operation.
13. The WMIL Team Leaders (rats and ferrets) would be involved for the entire stage of each species' eradication; one year for the rat eradication and 2 ½ years for the ferret eradication. This preparation time in New Zealand and UK, time on Rathlin Island for the eradication and final report production. The team leaders are responsible for assisting the Project Supervisor, directing staff and ensuring their eradication aspect progresses as required.
14. The WMIL technicians would all be experienced in eradication programmes and would be involved for either eight months for rat eradication or 2 years for ferret eradication on Rathlin Island.

15. The Rope Access team will have to be suitably qualified and experienced cliff access personnel. This team will be required for the entire 8 month rat eradication programme.
16. The field staff positions will be advertised prior to the eradication. These staff members would be involved for either eight months for rat eradication or 2 years for ferret eradication on Rathlin Island.
17. Travel costs include airfares and travel for the NZ-based WMIL staff from New Zealand to Rathlin (and Belfast), accommodation and other expenses on route.
18. Travel costs include airfares and travel for the NZ-based rope access personnel from New Zealand to Rathlin (and Belfast), accommodation and other expenses on route. This could be reduced if UK-based personnel are used.
19. Travel costs cover transport within the UK for the WMIL technicians and field staff to Rathlin for the eradication.
20. These are estimated costs of purchasing three Landrovers, 4 quad bikes and 2 trailers. These could be reduced if vehicles are available on Rathlin, hired or borrowed from RSPB.
21. It is assumed that the accommodation on Rathlin will be in self-catering facilities. The cost for this is estimated at £2,000 per month, but this may be reduced when confirmed (or negotiated with accommodation operators on the islands). It is important that the entire team can be accommodated at the same place to enable communication within the team and one central place for the community to obtain information on the project.
22. The cost for food is based on previous experience of projects of this size (approximately £100 per person per week) with a similar number of personnel. This food covers all staff. Much of the food can be bulk ordered (non-perishables) and shipped to Rathlin early and a weekly order for perishables can be arranged with the Rathlin store.
23. These are maximum prices for the bait that is presently available from UK wholesalers. It may be possible to get a discount for a large order, or get the bait donated as this is a conservation project. It would be good to get the bait provided in 10 kg buckets as it can be stored securely and transported around the island easily. The project would require 12 ton of difenacoum and 100 kg of bromadiolone (as alternative bait).
24. This is the cost for all 6000 bait stations including the wire, poles, flagging tape, poison labels and plastic labels. This may be able to be reduced if the bait stations used on Isle of Canna operation could be donated and shipped to Rathlin Island. Much of the prices for the bait station equipment (wire, poles, flagging tape, pipes and poison labels) are estimates and may be reduced when confirmed. The lockable bait stations are needed for the properties and some gardens. It is likely that this price can be reduced for a large purchase. Price will also depend on type (prices can vary from £5 to £9 depending on brand and style).
25. This is the cost for all 250 kill traps and 600 cage traps and covers for these traps including the poles, flagging tape, danger labels and plastic number tags. It may be possible to get a discount for a large order or get traps donated as this is a conservation project. Price will also depend on type (prices can vary from £25 to £50 depending on brand and style).
26. These costs are estimated and are likely to be able to be reduced. All the equipment listed in Appendix 21.6 is vital for the programme, and other equipment may be required as the preparation of the programme continues. Some equipment (i.e. GPS, distance range finder etc.) can be hired from WMIL for the duration of the project.
27. It is important that a boat is available to the team throughout the programme to reach the rock stacks around the island as these have to be baited. The costs here are estimated as charter costs once a week for the eight-month programme.

28. This is an estimation of freight costs and it may be possible to get the Rathlin Island Ferry Company to waive freight costs as a donation to the project. This will also have to cover freight costs of delivering equipment to Rathlin as well as any bait shipping costs.
29. WMIL overheads include costs such as office costs, insurance, etc.
30. The long-term monitoring for rats will be a continuation of the intensive monitoring, but limited to coastal zones and high-risk areas. This work may be done by a local Islander or original eradication staff member who could reduce the overall costs. In certain months (particularly summer, June and July) this could be reduced to fortnightly checks to further reduce costs.
31. The WMIL project supervisor and five technicians would return to Rathlin for three months (January to March) to undertake a final intensive monitoring check for rats (entire island) prior to rat-free declaration; covers preparation time, time on Rathlin and reporting. A smaller amount for equipment has been added as additional monitoring equipment such as tracking tunnels, candles or chocolate wax may need to be purchased or made.
32. The quarantine and contingency requires a person checking permanent bait and monitoring stations on the island. It is assumed that this will be undertaken by an Islander or RSPB staff member and no costing has been added to the budget (suspect it will take one day per month; up to 12 days plus another day per month for data entry, analysis and reporting; approximately £1,200 per year for staff costs). These checks will have to be undertaken permanently and regularly (preferably monthly).
33. The quarantine and contingency equipment will need to be stored on Rathlin. This will have to be 500 bait stations (including wire and marking poles), monitoring points (chocolate wax, soap etc.), bait (50 kg), notebooks and pens, rodent teethmarks and footprint detection information and maps of permanent stations. It should be noted that the bait will only last for up to 2 years.
34. The post-eradication monitoring is a continuation of the work pre-eradication. This will be used to detect improvements or changes to the ecology of Rathlin. It is very important to focus on the recovery of seabirds and ground-nesting birds.
35. This covers annual costs to undertake rabbit control. Only two years of control has been added to the total costs for the proposed eradication programme. Funding for any additional rabbit control will have to be found from other sources.
36. This covers a general contingency fund which can be used in case of delays to the project, increased costs for travel, fuel, food, additional equipment requirements and other unforeseen items or aspects of the project.
37. This does not include any costs that the Causeway Coast and Glens Trust, Royal Society for the Protection of Birds, Northern Ireland Environment Agency or any other partner organisation may incur during the programme. Savings may be made on several of the items in the budget through sponsorship, donations and better estimates from suppliers.

5.2 EQUIPMENT LIST FOR ALL PHASES OF THE PROPOSED RAT AND FERRET ERADICATION ON RATHLIN

The following equipment is required to undertake the pre-and post monitoring, assessment and preparation, implementation of the eradication, intensive monitoring and long-term monitoring on Rathlin Island.

This is not a complete list; other equipment may be needed throughout the project or recommended by the researcher(s) who undertake the pre and post eradication monitoring aspect. As such, a contingency amount has been added to the budget.

Some equipment can be used over each phase and does not need to be re-purchased. It will have to be stored on Rathlin Island.

Table 3 Equipment list for all phases of the proposed rat and ferret eradication on Rathlin Island.

ITEM	EXPLANATION	NUMBER
<u>PRE- AND POST-ERADICATION MONITORING</u>		
<u>Seabird monitoring</u>		
Notebooks	Lined, field notebooks, waterproof	6
Pencils	Pencils (HB)	12
Pens	Pens (biros; blue, black and red), 3 of each	9
Marker pens	Blue, black and red, 3 of each	9
Flagging tape	Hazard tape, red and white striped	5
Marking poles	8 ft bamboo poles	250
Burrow markers	2 inch plastic tags, for numbering and monitoring burrows	500
Tape recorders	For determining burrow occupancy, including tapes of Manx shearwaters	2
Burrowscope	For determining burrow occupancy	1
Maps	Rathlin Island, laminated	20
GPS	To record burrow and colonies as waypoints, for production of GIS linked maps and database	1
Cell phone	For maintaining contact	1
First aid kit	First aid kits, field type for team	1
Emergency blanket	Emergency or safety blanket	1
A4 paper	A4 paper, for reports or maps	2 reams
Laptop	For data entry, analysis and reporting	1
<u>Land bird monitoring</u>		
Notebooks	Lined, field notebooks, waterproof	6
Pencils	Pencils (HB)	12
Pens	Pens (biros; blue, black and red), 3 of each	9
Marker pens	Blue, black and red, 3 of each	9
Flagging tape	Hazard tape, red and white striped	5
Marking poles	8 ft bamboo poles, to mark recording stations	250
Maps	Rathlin Island, laminated	20
GPS	To record monitoring/recording stations as waypoints, for production of GIS linked maps and database	1
Cell phone	For maintaining contact	1
First aid kit	First aid kits, field type for team	1

Emergency blanket	Emergency or safety blanket	1
A4 paper	A4 paper, for reports or maps	2 reams
Laptop	For data entry, analysis and reporting	1
Invertebrate monitoring		
Notebooks	Lined, field notebooks, waterproof	3
Pencils	Pencils (HB)	10
Pens	Pens (biros; blue, black and red), 3 of each	9
Marker pens	Blue, black and red, 3 of each	9
Flagging tape	Hazard tape, red and white striped	5
Marking poles	8 ft bamboo poles, to mark pitfall traps	250
Pitfall traps	To collect invertebrate samples	250
Alcohol	To preserve invertebrates collected in pitfall traps	10 L
Collection jars	To collect and store invertebrate	100
Microscope	To identify invertebrates	1
Maps	Rathlin Island, laminated	20
GPS	To record pitfall traps as waypoints, for production of GIS linked maps and database	1
Cell phone	For maintaining contact	1
First aid kit	First aid kits, field type for team	1
Emergency blanket	Emergency or safety blanket	1
A4 paper	A4 paper, for reports or maps	2 reams
Laptop	For data entry, analysis and reporting	1
Vegetation monitoring		
Notebooks	Lined, field notebooks, waterproof	3
Pencils	Pencils (HB)	10
Pens	Pens (biros; blue, black and red), 3 of each	9
Flagging tape	Hazard tape, red and white striped	5
Marking poles	8 ft bamboo poles, to mark photo points	250
Camera	To take photo record at each photo point	1
Plant press	To preserve plant samples	1
Maps	Rathlin Island, laminated	20
GPS	To record photo points as waypoints, for production of GIS linked maps and database	1
Cell phone	For maintaining contact	1
First aid kit	First aid kits, field type for team	1
Emergency blanket	Emergency or safety blanket	1
A4 paper	A4 paper, for reports or maps	2 reams
Laptop	For data entry, analysis and reporting	1
Rabbit monitoring		
Notebooks	Lined, field notebooks, waterproof	3
Pencils	Pencils (HB)	10
Pens	Pens (biros; blue, black and red), 3 of each	9
Flagging tape	Hazard tape, red and white striped	5
Marking poles	8 ft bamboo poles, to mark rabbit monitoring grids	250
Camera	To take photo record at each monitoring (pellet count grid)	1
Rope and tent peg	To mark pellet count plots, 1 metre rope to use as diameter marker and tent peg to mark centre of plot	1
Maps	Rathlin Island, laminated	20
GPS	To record pellet count grids, for production of GIS linked maps and database	1

Cell phone	For maintaining contact	1
First aid kit	First aid kits, field type for team	1
Emergency blanket	Emergency or safety blanket	1
A4 paper	A4 paper, for reports or maps	2 reams
Laptop	For data entry, analysis and reporting	1
ERADICATION PHASES		
General		
Vehicles	Landrover	3
	Quad bike and helmets	4
	Trailer	2
Lap-top	For data entry, data storage, GIS mapping, analysis and reporting	1
Marker pens	Permanent marker pens, good quality, to number plastic tags	50
Notebooks	Waterproof notebooks	100
Pencils	Pencils, HB	100
Pens	Pens, biros, blue, black and red	20 of each
Laminator	To produce field maps for team	1
Laminator sheet	Plastic pockets for laminating A4 sheets	250
Cell phone	For maintaining contact	1
Radio	Hand held (line of site) radios	36 (18 pairs)
GPS	GPS, for production of GIS linked maps	30
First aid kits	First aid kits, field type for team	30
Safety blankets	Emergency or safety blankets	30
Pocket knives	One for each team member	30
Back packs	One for each team member	30
Water bottles	One for each team member	30
Thermos	One for each team member	30
Printer	Production of daily bait take maps, information etc.	1
A4 paper	A4 paper, for reports, information, letters or maps	25 reams
Map	Enlarged maps of Rathlin	25
Notice board	Notice board, for team notices, etc.	3
Whiteboard	Whiteboard for team notices and field locations	3
Deb Skin Safety station	Deb Skin Safety station, for cleaning hands after using bait and traps	1
Pre-eradication assessment		
Rat traps	Trapper T-Rex®, for DNA sample collection and provision to households to reduce the bait use prior to the rat removal	150
Collection jars	To collect and store DNA samples	150
Nitrile gloves	Nitrile gloves, thick surgical gloves, 100 per box, for handling bait and rats	6 boxes
Dissection kit	For samples	3
Fencing mesh	To improve animal enclosures	10 rolls
Compost bins	Rat-proof, to replace unsuitable bins at private properties	50
Rubbish bins	Rat proof, to replace unsuitable waste storage at private properties	50
Rat eradication phase		
Bait stations	750 mm lengths, 100 mm diameter, corrugated pipe	6000
Bulk bags	For storing and moving stations around island	150
Fencing wire	To secure station and make crow clips, 6 mm grade	23000 m

Marking poles	8 ft bamboo poles (these will be cut in half)	2500
Flagging tape	Multiple colours	100 rolls
Plastic tags	2-inch square, holed, for numbering bait stations	7500
Marker pens	Permanent marker pens, good quality, to number plastic tags	50
Poison labels	Poison labels (poison, do not touch)	7500
Spray paint	Orange, red and blue, to mark end of bait station lines	6 of each
Nitrile gloves	Nitrile gloves, thick surgical gloves, 100 per box, for handling bait and rats	20 boxes
Vitamin K1	Vitamin K1, both injections and tablets, doses for dogs and cats on Rathlin	1000 doses
Batteries	Rechargeable AA and/or AAA batteries for headlamps etc., including recharge unit	200
Tools	Wire cutters, hammer, pliers, etc.	10 sets
Ferret eradication phase		
Traps	Kill traps (Mark VI Fenn, BMI Magnum, Springer No 6 or DOC 250)	250
	Live (Cage)	600
Trap covers	Wooden box covers (or commercial plastic covers)	300
Flagging tape	Multiple colours	50 rolls
Plastic tags	2-inch square, holed, for numbering traps	1250
Marker pens	Permanent marker pens, good quality, to number plastic tags	20
Danger labels	Danger labels ("trap, danger, do not touch")	2000
Nitrile gloves	Nitrile gloves, thick for handling ferrets	20 pairs
Intensive monitoring phase		
Fencing wire	To make monitoring pins, 5 or 6 mm grade	10000 m
Marking poles	8 ft bamboo poles (these will be cut in half)	2500
Flagging tape	Hazard tape, red and white striped	30 rolls
Plastic tags	2-inch square, holed, for numbering monitoring stations	7500
Plastic bags	Self sealing, 25 ml, to collect samples and unclear monitoring	5000
Tracking tunnels	Tracking tunnels, cards and ink	2000
Wax pellets	White, for melting down to make chocolate wax, 25 kg sacks	50
Soap	Soap, small hotel type	50,000
Chewsticks	Chewsticks	50,000
Vegetable oil	Vegetable oil or used cooking oil from local businesses	25 L
Cocoa powder	Cocoa powder, for making chocolate wax, 500 g tins	50
Flavour essences	For flavouring wax (peanut, chocolate, aniseed)	50
Candle dye	For colouring flavoured wax blocks	25
Cordless drill	Rechargeable drill, for making holes in all monitoring items	2
Drill bits	Various sizes (6 mm)	6
Pot	Cooking pot, for melting wax to make chocolate wax	4
Muffin trays	Muffin trays for making chocolate wax, 12 small muffins	50 trays
Gas cooking Ring	Gas cooking ring, double, for making flavoured wax	2
ROPE ACCESS EQUIPMENT		
Rope	Climbing rope for fixed access ropes, 50 m coils	10
	Climbing rope, 50 m, 100 m, 200 m coils	3 each
Metal stakes	For pinning ropes, 1 m	30
Mallet		1
Harnesses		4

Gear	Stops, Ascenders, Descenders, Rope sleeves, etc.	4 of each
	Karabiners, etc.	50
Helmets		4
LONG-TERM MONITORING (AND FINAL CHECK)		
Tracking tunnels	Tracking tunnels, cards and ink	2000
Wax pellets	White, for melting down to make chocolate wax, 25 kg sacks	50
Soap	Soap, small hotel type	25,000
Chewsticks	Chewsticks	25,000
Vegetable oil	Vegetable oil or used cooking oil from local businesses	20 L
Cocoa powder	Cocoa powder, for making chocolate wax, 500 g tins	20
Flavour essences	For flavouring wax (peanut, chocolate, aniseed)	50
Candle dye	For colouring flavoured wax blocks	25
Pot	Cooking pot, for melting wax to make chocolate wax	From intensive monitoring phase
Muffin trays	Muffin trays for making chocolate wax, 12 small muffins	
Gas cooking Ring	Gas cooking ring, double, for making chocolate wax	
Notebooks	Waterproof notebooks	20
Pencils	Pencils, HB	20
Pens	Pens, biros, blue, black and red	20 of each
BIOSECURITY (QUARANTINE AND CONTINGENCY)		
Permanent Bait stations	Wooden boxes (stained), hinged and lockable, individually numbered, warning labels, etc.	100
Flavoured wax	Made during rat removal and intensive monitoring phase	10000
Bait	Difenacoum, wax blocks	100 kg
Notebooks	Waterproof notebooks	40
Pencils	Pencils, HB	40
Laptop	Data entry, data storage, GIS mapping, analysis and reporting	1
RABBIT CONTROL (CONTINGENCY)		
Hunter/Shooter	Contract hunter or shooter	2
Gun	Rifle or shotgun for targeting rabbits (contractor to provide)	-
Traps	Live traps	200
Bait	Rabbit lures or carrot (or other natural food items)	10
Notebooks	Waterproof notebooks	10
Pencils	Pencils, HB	20
Laptop	Data entry, data storage, GIS mapping, analysis and reporting	1
First Aid Kits	Field first aid kits	2