

Pacific rat eradication on Vatu I Ra Island, Fiji

Operational Plan

21/6/06

Introduction

Previous Management

There are no records of any previous rodent management - either eradication or control involving the use of anticoagulant toxins on Vatu I Ra.

Support

BirdLife International is the implementing agency responsible for undertaking this project.

The Clan Nagiligilo has declared its support for this project and will be involved in its implementation.

Funding for developing this project has been provided by the Australian Government's RNHP through Conservation International's CEPF

This is being developed as a PII - supported Demonstration Project. PII Guidelines for developing and implementing management are being applied.

Project Management

This project will be managed by BirdLife International.

The following roles and tasks have been assigned:

Project manager - Vilikesa Masibalvau; project oversight and consultation.

Team leader - Elenoa Seniloli; operational supervision and quality control.

Technical advisor - Rob Chappell (Dept of Conservation NZ); technical advice, training and operational support.

Field team - members of the clan Nagilogilo; implementation of field tasks.

Planning coordinator - James Millett; financial management, planning and reporting

PII coordinator - Souad Boudjelas; PII oversight & advice, peer review.

A briefing session will be convened by the project manager prior to the eradication operation getting under way. Roles, tasks and performance measures will be detailed and confirmed at this briefing session.

Timing

Bait application will commence on or soon after 12 July 2006.

Post operational monitoring will be completed on or soon after 7 August 2006.

Surveillance and outcome monitoring as well as prevention activities will be ongoing.

Tasks

Bait management

The manufactured bait 'Pestoff 20R' was ordered by the University of the South Pacific (USP) from the Wanganui factory as a part of a shipment for 2 projects (Viwa & Vatu I Ra). This bait is currently being stored at a secure and cool site at USP, Suva. The bait was sent in 10kg plastic pails to reduce moisture impact to the bait, to minimize deterioration and for ease of transporting in the small open boats that are used to get to these islands. The bait will be kept at the store until required. Sufficient bait (60kg) has been ordered to complete two baiting of the island at 13kg/ha each. Bait will be checked for quality prior to its being transported to the island.

Bait line establishment

To create the baiting lines a 100m measuring tape will be used to measure across the island at three points on the flat section. As the island is approximately 100m wide trees will be marked at 25m, 50m and 75m intervals using this measuring tape. These marked trees will then be lined up by eye and bait lines marked with plastic cruising tape extended accordingly the length of the island so that they can be easily followed by the baiting team. These lines will include the hillock and rock stack. There is no need to mark the perimeter line. Baiters will simply follow the forest edge above high tide mark.

Baiting Method

Bait will be broadcast in two applications approximately 14 days apart. Baits will be hand broadcast from the lines with the applicators throwing bait in front of them and to each side up to five meters from the line. Extra bait may be sown in areas of likely rat habitat such as rank grass, boulders and forest edges. As the island is small, both baiting applications should be undertaken late afternoon and completed just prior to nightfall to minimize crab interference.

Rat population monitoring

Funding timelines for this project preclude any assessment of the rat population prior to the eradication operation. Rat monitoring will be confined to post-operational monitoring to confirm eradication has been achieved.

At least seven days after the second baiting the island will be monitored using two lines of 10 tracking tunnels to detect any remaining rats. Wax tags lured with peanut butter will be spaced across the island and left for a week. Monitoring using rodent tracking tunnels and using wax tags will be repeated every six months for two years. Tracking tunnels will be baited with burnt coconut. The eradication will be declared successful if, after two years no rats have been detected.

Bait platforms made with plastic pot plant saucers 250mm in diameter nailed to wooden pegs will be placed in the ground so that the platform (the plastic saucer) is approximately 40mm above the ground. While it is possible some crabs will manage to climb up and onto the platforms, most will not. These platforms should therefore provide baits solely for rats. Platforms will only be used during the second baiting phase.

There are two objectives in using these platforms:

- To provide access to baits in the absence of crabs for any remaining rats.
- To provide a monitoring tool to identify any remaining rats.

Monitoring bait take

An important component of this project is determining whether broadcasting bait at 26kg / ha will lead to the rats being eradicated in the presence of hermit crabs. This will require careful measurements of the bait actually distributed and of its consumption (either by rats or crabs)

Outcome Monitoring

After the hand broadcasting of the baits in the afternoon the teams are to walk around the island to assess bait take. The presence of rats still surviving on the island after the first would be monitored by snap traps, tracking tunnels and bait platforms placed in groups on the three lines.

Extra bait of 30kg has been ordered and is currently on its way to Fiji. This extra bait is for contingency and monitoring purpose.

Hermit Crab densities

Assessing hermit crab densities will allow inferences to be drawn about necessary bait densities to eradicate rats in relation to known crab densities. A standard approach will be used to assess hermit crab densities on Vatu I Ra.

A 10 quadrant of 1m×1m is placed randomly on the island, from the beach where the crab density is the greatest and moving inland. On these quadrants the hermit crabs are counted and the numbers recorded.

Toxin up-take by hermit crabs

A sample of hermit crabs will be collected immediately after the second baiting for later analysis of toxin residues in body tissues.

To assess for the bait take, 30 plots with a known bait mass during bait drop 1 and bait drop 2 and measure removal rates. The assumptions being that temporal differences are not significant and that the number of surviving rats will be sufficiently low not to

remove significant quantities of bait during drop 2. Very quick and dirty, but it will provide an indication of the amount that crabs (of known density/mass) may take. For example if it is 90% over 24hours we may have a problem, if it is 10% /24hrs then this lesser concern and may guide compensation rates.

Logistics Plan

List of people Involved:

1. Rob Chappell (Advisor)
2. Vilikesa Masibalavu- Birdlife Fiji
3. Elenoa Seniloli-Birdlife Fiji
4. Lukes –Palau Conservation Society
5. Sione Goneiwai- Clan Leader
6. Mili Vukunasiga - Birdlife Fiji Programme
7. Akuila Qionibaravi-Clan
8. Nacanieli Vunisa- Clan

Vatu-I-Ra Rat Eradication Itinerary. **10th –13th July 2006.**

| Applications | Dates | Time | Activities | Responsibilities |
|------------------------------|----------------------------|--------------|---|-------------------------|
| 1 st applications | Mon 10 th July | 9am-10am | Briefing Meeting at the Birdlife office | Rob,Elenoa,Lukes |
| | | 10-12am | Leave Suva for Vatu-I-Ra | Villager |
| | | 2-5pm | . | Vili,Elenoa ,Lukes |
| | Tues 11 th July | 8-1pm | - Left For Vatu I Ra | Rob,Elenoa,Lukes |
| | | 12-1pm | -Set up Camp | Villager, |
| | | 2pm-3pm | -Mark The Bait Lines | |
| | | 4.30-5.00 pm | -Carried out 1 st bait application | Team |
| | | 7.00-8.00 | State Bait Take | Rob,Vili,Elenoa |

| | Wed 12 th July | 9-10 10-12 1-2 | - State / bait take -Bird count (nesting birds) -Weed spraying -Rubbish collection | |
|----------------------|---------------------------------|-------------------------------|---|-------------------------------------|
| | Thurs 13 th | 7-2pm | Vatu I Ra - Suva | |
| 14 days apart | | | | |
| Applications | Dates | Time | Activities | Responsibilities |
| | Monday 24 th July | 9-1 4.30-5.00pm | -Suva-Vatu I Ra Island -Monitoring /snap traps set up -Second Baiting | Team Team |
| | Tue 25 th July | 8am-9am | -Baitake /State -Crab Experiment | Amit,Elenoa,Mili Mili |
| | Wed 26 th July | | -Bait take /State Crab Experiment | Rob,Elenoa,Mili Amit ,Elenoa |
| | Thurs 27 th July | 2-3pm | Back to Suva | |

Field Equipments

- One roll of flagging tape to marked lines.
- 50m tape measure
- 60 bait platforms 250mm in diameter (either square or round) fixed to pegs that can be pushed into the ground and stand 100mm above the soil. If these are to be assembled on the island then appropriate fixings are also required i.e. hammer and nails or no-nails glue

- 40 kg of Pest off 20R rodent pellets in plastic buckets.
- 10 pairs light rubber gloves.
- 20 Agnes tracking tunnels with 80 papers (five nights)
- 20 Victor Rat traps
- Burnt coconut bait.
- Weed killer-Round up
- Plastic bags
- GPS
- Stakes-To mark the 5 Straight lines
- Hip chain
- Garbage bags
- Plastic containers –(Ice-cream)
- Sprayer
- Permanent Marker
- Buckets (5)
- Camping Equipments
- Balance
- Pencil /notebooks
- Wire
- Plies (cutter)
- Food

Transport

1. Birdlife Truck

The vehicle would be used to transport the eradication crew as well as the equipment from Ma'afu Street to Nakorotubu, Ra.

2. Boat

Arrangements have been made for the villager to provide two boats for transporting the crew and the equipments.

Accommodation

The group involved in the eradication would be camping on the island until all the tasks has been accomplished in the different stages .

Food

Birdlife has budgeted for the Groceries that would supplement the food provided by the villagers.

Planning and Reporting

A report on project activities will be prepared by the Project Manager and will be circulated to BirdLife, the PII and the clan by 30 October 2006.

The Project Manager - through BirdLife International will continue to provide advice and support to the clan as they develop a Management Plan for the island.

Risk Management

| RISK | RISK MANAGEMENT |
|-----------------------------------|--|
| Rough sea | Seek long-range weather forecasts. Modify operational dates to suit. |
| Rain or stormy weather | Seek long-range weather forecasts. Modify operational dates to suit. Engage experienced boatmen. |
| Lack of commitment by field staff | Carefully select staff. Focus on motivating and empowering staff. Promote & facilitate team building. |
| Inadequate institutional support | Seek formal commitment from BirdLife at outset (Project Design Document. |
| Unclear tasks | Refine this Operational plan in consultation with stakeholders and project team (including field staff)... |
| Incomplete bait coverage | Ensure sufficient bait is available at outset – including back up if crab take is high. Ensure baiting team is trained and appropriately motivated to achieve total bait coverage. |
| Crab bait interference | Monitor crab bait-take as the operation proceeds. Refine bait platform use, if appropriate. Apply additional bait if |

| | |
|---|--|
| | necessary. |
| Clan support withdrawn | Ensure clan support is maintained by regular consultation and involving delegated clan representatives in project activities. |
| Village /Tour boat reintroducing the rats on the island | Setting up bait stations on the boats and this to agreed with hotel owners. |
| Fisherman | Continued awareness by setting up notice boards, awareness through the radio, TV and the circulations of leaflets and posters. |

Communication Plan

- Radio-Radio station –(Domo Ni Vanua -am)
Messages are relayed to the villagers through the radio .As there are no phones in the village. The messages contain the time, dates and intensions of visit, in this message it includes the number of people in the group and the number of boats required.
- Contact Person –Isereli Gonewai- Mobile (9419056)
This person is one of the landowners son who resides in Suva, the message is also relayed to him .He will then contacts the villagers also.

Monitoring

Monitoring should occur not less than one month following the application of the second baiting to the island. That is on or about August 22nd 2006.

Monitoring will comprise three random lines on Vatu I Ra:

1. One line to lie along the north coast immediately inside the forest and to include the forest side of the low rock stack (Bridled tern nest site).
2. One line to follow the marked centre line on the island and include both sides of the hill starting at the seaward side at the base. Two monitor groups (trap/ tunnel / tag) should be located on the seaward side and at least one on the inland side of the hill.
3. One line to lie inside the forest and to include all camp sites.

Monitoring Tools

- 1) Snap Traps –Baited with roasted coconuts with a sweet smell to attract the rats
Traps would be regularly checked and baits replaced.

- 2) Tracking Tunnels- It records the footprints of the animals running through the tunnels on special ink- treated paper on the bottom of the tunnel and baited with coconuts.
- 3) Field signs-these are signs such as rat droppings, evidence of rats feeding on plants and animals.
- 4) Waxed tags, which would be nailed to trees at different heights.

The monitoring would be conducted after a month from eradication for seven days .The island would be monitored every six months for two years. If after the end of two years a nil result is achieved then the eradication can be declared a success. The monitoring would be sourced out to Dick Watling (Environment Consultants).

Stopping rats from getting Back to the Island “Quarantine Measures”

Getting rid of the rats is only the first step to restoring the island. Preventing them ever getting back is a follow on measure.

1) Bait Stations on the Boats

- The bait stations would be set up on the boats especially the tour boats and village boat that regularly visit the island. These bait station are to be checked and maintained on a daily basis.
- Permanent bait stations set up particularly around the loading areas of the lodge and nearby buildings. The waxy baits that are much more weather proof and long lasting than the “Pest off” baits.

2) Awareness and Education

The villagers need to be trained in maintaining the Biosecurity of the island.Two Biosecurity officers have been nominated by the clan and are involved in eradication work and also maintained of the whole island.

- The signboard on the island is a form of awareness to the fisherman or the visitors that Vatu-I-Ra is owned by the Yavusa Nagilogilo, and to respect the island and warning them not to abuse it.
- The awareness through the Radio and TV would inform the general public of the eradication works, to try to restore the island by increasing the number of sea birds.
- Leaflets and posters would be produced and circulated to the general public and schools. These contain information about the work currently being done in Vatuira Island IBA.

Contingency

An extra bait of 30kg would be stored in Birdlife Storeroom, to account for miss calculation of the treated area, accidental loss or damage (through moisture). These baits would be used to respond to the re-invasion of rats on Vatu-I-Ra Island.