LONG TERM CAPACITY
for Invasive Species Management

BIODIVERSITY
CONSERVATION
LESSONS LEARNED
TECHNICAL SERIES

17

CONSERVATION
INTERNATIONAL
Pacific Islands

BIODIVERSITY CONSERVATION LESSONS LEARNED TECHNICAL SERIES

17 Long Term Capacity for Invasive Species Management

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The Critical Ecosystem Partnership Fund is a joint initiative of l'Agence Française de Développement, Conservation International, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank. A fundamental goal is to ensure civil society is engaged in biodiversity conservation.

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CONSERVATION INTERNATIONAL
Pacific Islands

CRITICAL ECOSYSTEM PARTNERSHIP FUND

The **Critical Ecosystem Partnership Fund** is a joint initiative of l'Agence Française de Développement, Conservation International, the European Union, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank. A fundamental goal is to ensure civil society is engaged in biodiversity conservation.

ABOUT THE BIODIVERSITY CONSERVATION LESSONS LEARNED TECHNICAL SERIES

This document is part of a technical report series on conservation projects funded by the Critical Ecosystem Partnership Fund (CEPF) and the Conservation International Pacific Islands Program (CI-Pacific). The main purpose of this series is to disseminate project findings and successes to a broader audience of conservation professionals in the Pacific, along with interested members of the public and students. The reports are being prepared on an ad-hoc basis as projects are completed and written up.

In most cases the reports are composed of two parts: the first part is a detailed technical report on the project which gives details on the methodology used, the results and any recommendations. The second part is a brief project completion report written for the donor and focuses on conservation impacts and lessons learned.

The CEPF fund in the Polynesia-Micronesia region was launched in September 2008 and will be active until 2013. It is being managed as a partnership between CI Pacific and CEPF. The purpose of the fund is to engage and build the capacity of non-governmental organizations to achieve terrestrial biodiversity conservation. The total grant envelope is approximately US$6 million, and focuses on three main elements: the prevention, control and eradication of invasive species in key biodiversity areas (KBAs); strengthening the conservation status and management of a prioritized set of 60 KBAs and building the awareness and participation of local leaders and community members in the implementation of threatened species recovery plans.

Since the launch of the fund, a number of calls for proposals have been completed for 14 eligible Pacific Island Countries and Territories (Samoa, Tonga, Kiribati, Fiji, Niue, Cook Islands, Palau, FSM, Marshall Islands, Tokelau Islands, French Polynesia, Wallis and Futuna, Eastern Island, Pitcairn and Tokelau). By late 2012 more than 90 projects in 13 countries and territories were being funded.

The Polynesia-Micronesia Biodiversity Hotspot is one of the most threatened of Earth's 34 biodiversity hotspots, with only 21 percent of the region's original vegetation remaining in pristine condition. The Hotspot faces a large number of severe threats including invasive species, alteration or destruction of native habitat and over exploitation of natural resources. The limited land area exacerbates these threats and to date there have been more recorded bird extinctions in this Hotspot than any other. In the future climate change is likely to become a major threat especially for low lying islands and atolls which could disappear completely.

For more information on the funding criteria and how to apply for a CEPF grant please visit:

- www.cepf.net/where_we_work/regions/asia_pacific/polynesia_micronesia/Pages/default.aspx
- www.cepf.net

For more information on Conservation International's work in the Pacific please visit:

- www.conservation.org/explore/asia-pacific/pacific_islands/pages/overview.aspx

or e-mail us at cipacific@conservation.org

CRITICAL ECOSYSTEM PARTNERSHIP FUND

CONSERVATION INTERNATIONAL Pacific Islands

Location of the project in the Polynesia-Micronesia Biodiversity Hotspot

Pacific INVASIVES INITIATIVE

THE David & Lucile Packard Foundation

NEW ZEALAND MINISTRY OF FOREIGN AFFAIRS & TRADE Aid Programme

Department of Conservation Te Papa Atawhai

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The feral goat eradication feasibility study team with goat musterers on Monuriki Island, Fiji. (Photo: Bill Nagle)

Lessons Learned

Project Design Process

Aspects of the project design that contributed to its success/shortcomings.

This project was successful because we were able to be responsive to agencies needs and adopt a consultative and participatory approach.

Project Implementation

Aspects of the project execution that contributed to its success/shortcomings.

The aspects that made the implementation of this project a success were PII being recognised as the leading technical support and capacity development provider for invasive species management in the region, having established long-term relationships and being able to complement our capacity through our extensive networks.

The main challenge faced by this project was time. Developing capacity and building confidence takes time and there are no shortcuts. Collating, analysing and delivering technical information and advice to grantees in a package that was useable for them is one side of the equation; the other side was the time that grantees had to process it before they apply it.

Other lessons learned

relevant to the conservation community

- **Building strong, long-term, trusting and respectful relationships with grantees is essential.**

Capacity cannot be developed quickly. A one-off project is a good start, but long-term commitment is required. All parties involved in capacity development need to be open and honest from the start and agree to periodically review each parties' progress against agreed capacity development goals and objectives.

- **The capacity development process must be led by the grantee.**

The need for capacity development has to be recognised and owned by the grantee and there is a greater chance that capacity will be strengthened when decision-makers show leadership and embrace learning as part of their organisation's culture.

- **Capacity development requires long-term commitment.**

Many, if not most, staff in conservation agencies in the Pacific are 'all-rounders', working on many different aspects of conservation projects. Invasive species management requires specialist knowledge and skills which can only be developed over time. The commitment required for an agency to develop invasive species management capacity of its staff is often underestimated.

Lessons Learned *cont.*

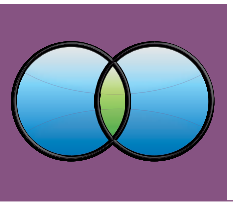
- **Capacity development is a process, not just delivery of one-off training events.**

Capable practitioners require encouragement, opportunities to keep on developing confidence in their role and opportunities to share their knowledge, skills and experiences with others. There is a need to regularly reinforce knowledge and skills. Staff turnover in agencies also means that regular development of capacity is required. Funders and capacity development providers must plan for this.

- **Capacity development does not work to a recipe.**

Best practice must be the goal at all times, but grantee knowledge and skills and project requirements mean that innovative solutions/methods have to be developed. One size does not fit all and a flexible and adaptable approach is required.

Milika Ratu of the National Trust of the Fiji Islands receiving telemetry instruction from a volunteer at Ark in the Park in Auckland, New Zealand. (Photo: Bill Nagle)



Introduction

The importance of invasive species management in the conservation of Pacific biodiversity is being acknowledged and acted on by more and more agencies as capability and confidence grow. Of the three Strategic Directions funded by CEPF investment, the majority of applications approved (45%) were in Strategic Direction 1: Prevent, control and eradicate invasive species in key biodiversity areas.

PII contributed to the growth of confidence and capability by supporting CEPF grantees with authoritative technical assistance, provision of best practice knowledge and skills and training in the development and implementation of their projects.

Many of the projects that PII assisted are in important terrestrial conservation areas. Of these, 20 are Key Biodiversity Areas (KBA), 10 are Important Bird Areas (IBA), 5 are Alliance for Zero Extinction (AZE) sites, 4 are Endemic Bird Areas (EBA), 4 are Marine Reserves, 2 are World Heritage Sites and 1 is a Wildlife Sanctuary.

The grantees supported by PII were working on projects involving the following endangered species:

Common Name	Scientific Name	Red List Status
Birds – pelagic:		
Fiji petrel	*Pseudobulweria macgillivray*	Critically Endangered
Henderson petrel	*Pterodroma atrata*	Endangered
Phoenix petrel	*Pterodroma alba*	Endangered
Wedge-tailed shearwater	*Puffinus pacificus*	Least Concern*
Birds – terrestrial and shore:		
Bokikokiko	*Acrocephalus aequinoctialis*	Endangered
Bristle-thighed Curlew	*Numiensis tahitiensis*	Vulnerable
Fatu Hiva Monarch	*Pomarea nigra*	Critically Endangered
Friendly Ground Dove	*Gallicolumba stairi*	Vulnerable
Henderson crake	*Porzana atra*	Vulnerable
Birds – terrestrial and shore *(cont.)*:		
Henderson lorikeet	*Vini stepheni*	Vulnerable

Common Name	Scientific Name	Red List Status
Henderson fruit-dove	*Ptilinopus insularis*	Vulnerable
Henderson reed-warbler	*Acrocephalus taiti*	Vulnerable
Island Kingfishers	*Todiramphus gambieri*	Critically Endangered
Micronesian megapode	*Megapodius laperouse*	Endangered
Polynesian Ground Dove	*Gallicolumba erythroptera*	Critically Endangered
Polynesian Megapode	*Megapodius pritchardii*	Endangered
Ratak Imperial Pigeon	*Ducula oceanica Ratakensis*	Near Threatened
Rimatara Lorikeet	*Vini kuhlii*	Endangered
Tooth-billed pigeon	*Diduculus strigirostris*	Endangered
Samoan broadbill	*Myiagra albiventris*	Vulnerable
Tahiti Monarch	*Pomarea whitneyi*	Critically Endangered
Mammals:		
Marianas flying fox	*Pteropus mariannus*	Endangered
Samoan flying fox	*Pteropus samoensis*	Near Threatened
Plants:		
Meryta	*Meryta brachyopoda*	Critically Endangered
Reptiles		
Fijian Banded Iguana	*Brachylophus bulabula*	Critically Endangered
Fijian Crested Iguana	*Brachylophus vitiensis*	Critically Endangered
Green Turtle	*Chelonia mydas*	Endangered
Hawksbill Turtle	*Eretmochelys imbricata*	Critically Endangered

*Locally threatened in Fiji (BirdLife Pacific)

In addition to endangered species, there were grantee projects supported by PII that addressed the Pohnpei Watershed Forest and Fiji Tropical Dry Forest threatened ecosystems.

Island Biosecurity Training Course

8 – 11 MARCH 2010
Apia, Samoa

28 JUNE – 1 JULY 2010
Suva, Fiji

REPORTS PREPARED BY:

Marleen Baling and Bill Nagle, Pacific Invasives Initiative

SAMOA

8 – 11 MARCH 2010

Apia, Samoa

Community leaders and Government of Samoa staff receive training in ant identification at the PII Island Biosecurity training course in Samoa. (Photo: Bill Nagle)

Summary

The island biosecurity training for Nu'utele and Nu'ulua Islands was held at Apia, Samoa, in March 2010. The purpose of the training was 1) to develop general understanding of invasive species and biosecurity on Nu'utele and Nu'ulua islands by the participants; 2) to develop knowledge and skills necessary to undertake basic surveillance and incursion responses; 3) to collect local knowledge for contribution to the island biosecurity plan, and 4) to develop an initial visitors' biosecurity checklist to the islands. This 4-day training course was attended by up to 22 participants from Samoa's Ministry for Natural Resources and Environment (MNRE), the Aleipata Marine Protected Area (MPA) committee members, and the Samoan Ports Authority (SPA). The training covered the three steps of biosecurity (quarantine/prevention, surveillance, incursion response), and introduced basic concepts and theory to the participants. These topics were reinforced with several practical exercises, which included a fieldtrip to Satitoa wharf to examine biosecurity issues at the departure site. The participatory approach of this training was to encourage personal opinions and experiences to be shared and discussed by the group. All participants expressed an increased level of understanding on invasive species, its current issues, and importance of biosecurity to the islands. The participants agreed with the need for public awareness on the importance of biosecurity for the islands. Several recommendations for future actions have been identified, and will be discussed in the following months.

Nu'utele and Nu'ulua Islands (Aleipata Island Group) are identified as key sites for ecological conservation in Samoa. A long-term restoration project included the eradication of rats in 2009, under Samoa's National Biodiversity Strategy and Action Plan, and the Aleipata Marine Protected Area (MPA) Management Plan (2002-2006). This project is a collaboration between the local communities from the Aleipata District (MPA members), Samoa's Ministry for Natural Resources and Environment (MNRE), Secretariat of the Pacific Regional Environment Programme (SPREP), New Zealand Department of Conservation (DOC), Conservation International – Pacific Islands Programme (CI-PIP), the Critical Ecosystem Partnership Fund (CEPF), and the Pacific Invasives Initiative (PII).

All stakeholders identified the need for biosecurity awareness and skills, and PII was requested to develop and deliver an island biosecurity training course for key community members and MNRE staff. The initial training was held in September/October 2009 in Auckland, New Zealand and was attended by five Samoan participants. However the training was prematurely stopped due to the tsunami that struck Samoa on the 30 September 2009. MNRE, community members and SPREP requested the training be completed in Apia, Samoa.

This report presents an overview of the result of the island biosecurity training repeated in Apia, Samoa, between 8 and 11 March 2010.

PURPOSES

- To develop understanding of biosecurity, its purpose and the practicality of maintaining effective biosecurity programmes, to minimise the risk of invasive species re-invading Nu'utele and Nu'ulua islands.
- To develop knowledge and skills necessary to undertake basic surveillance and incursion responses.
- To collect information from local knowledge that will contribute to the biosecurity plan for the islands. This will be finalised jointly with MNRE and SPREP.
- To develop an initial checklist for visitors to the islands. This will be finalised jointly with MNRE and SPREP.

TRAINING DAYS

The training course started on the 8th March 2010, with opening speeches and Samoan biosecurity presentations from MNRE, and Ministry of Agriculture and Fisheries (MAF) Quarantine and MPA representatives. Participants comprised of 10 Aleipata District community leaders, 8 MNRE staff, and one representative from the Samoan Ports Authority (SPA). Due to increased interest in the training, three new community members attended at the later stage of the training. Additionally two representatives from CI-PIP/ CEPF attended the morning of the third day of the training. Translation between English and Samoan was made by MNRE staff.

The training course was led by Marleen Baling and Bill Nagle. Similar to the previous biosecurity training, a participatory approach was used to establish an understanding of basic biosecurity concepts and gain local information on both Nu'utele and Nu'ulua Islands. The training covered the three basic steps of biosecurity: quarantine/ prevention, surveillance and incursion response. These steps carried the important messages of: not bringing any unwanted biota to the islands, being vigilant in looking for anything unusual (invasive species) on the island, and to report any unusual sightings immediately. Opinions and personal concerns from each participant were encouraged and discussed, and issues resolved where possible.

The training was reinforced with several exercises, which looked at basic monitoring methods (ant lures and tracking tunnels), quarantine procedures (participants checked equipment for unwanted biota), poster on comparison between "good" and "bad" island biosecurity, and a visit to Satitoa wharf to discuss biosecurity at the boat launch site. Discussions on practicality and other concerns were made at the end of each exercise.

OUTCOMES

1. Understanding biosecurity

- Participants admitted a previous lack of understanding of invasive species, their impact and the function of biosecurity. This training has increased their knowledge and desire to put action to invasive species prevention not only for the Aleipata Islands, but also the main island (Upolu).
- Participants repeatedly expressed concern about unauthorised landings (e.g. fishermen and foreign visitors) on Nu'utele and how that will increase the biosecurity risk for the island. All participants agreed on the need for public awareness and participation.
- Participants understood and agreed on the need for rapid reporting in the event of an invasive species incursion on the islands.

- The SPA representative expressed interest in island biosecurity and encouraged more contact between MNRE, MPA and SPA to be updated about the Aleipata Island issues.
- There were recommendations from the participants to hold biosecurity training periodically in Samoa, to teach and create awareness in others.

2. Development of skills and knowledge

- Participants were made aware of risk areas (places to look for signs of incursions) on the island and the means of identifying signs of invasive species incursions.
- The lure and rat tracking exercise provided skills in setting and collecting samples, and interpreting the information.

3. Local knowledge and information collation

- Information about the islands (risk areas, common landing route), risk species, its source and invasion pathway were collected from participants and will be incorporated into the islands' biosecurity plan.

4. Development of visitor checklist

- Information on the type of visitors and equipment usually taken to the island were compiled and a draft of a visitor checklist has been made.
- The need for a protocol for incursion response for the Aleipata Islands was identified, and to be resolved. For example, who is responsible in each step of the response plan – MNRE, MAF Quarantine, Samoa National Invasive Technical Team (SNITT), or MPA? Is the national emergency response plan for invasive species applicable to local issues (i.e. rat incursion on Nu'utele and Nu'ulua)? Who is responsible for writing up the response plan – MNRE, MPA or SNITT? How does this all fit into the MPA management plan?

COURSE OF ACTION

The following list of actions were raised, discussed and recommended from the biosecurity training.

- PII to draft the biosecurity species risk invasion pathway and prevention measures for Nu'utele and Nu'ulua Islands. This will be sent to MNRE and SPREP to finalise the plan.
- PII to draft the visitor checklist for Nu'utele and Nu'ulua Islands. This will be sent to MNRE, MPA and SPREP to finalise the document.
- Establishment of an incursion response plan for Nu'utele and Nu'ulua Islands. This includes clarification of the roles and responsibilities of each agency (MNRE, MPA, SNITT or MAF Quarantine?) in an event of an incursion. Management measures for high risk species (e.g. rats) need to be produced. Suggestion for MNRE, MPA and SPREP to discuss this part of the biosecurity plan, with support from PII.
- MNRE and MPA will start basic quarantine checks of all gear prior to departing to the islands (using the visitor checklist). This will be routine in future island visits. MNRE and MPA to discuss their roles as 'quarantine officers'. Who will be responsible?
- MNRE and MPA to discuss the establishment of an MPA/quarantine office at Satitoa.
- Further discussion between MNRE, MPA, SPREP and PII on community awareness for the Aleipata Islands. Questions raised in the training: Who are the community targets (fishermen, tourists, school children)? How are we promoting biosecurity on Aleipata Islands (poster, presentation,

community open days)? Who will be promoting this (MNRE, MPA)? How long or how often will this programme be held?

- MNRE to send the translated biosecurity training evaluation forms (Samoan to English) to PII.

ACKNOWLEDGEMENTS

We would like to thank everyone who has contributed to this training course, including MNRE (especially Malama Momoemausu, Pulea Ifopo, Moeumu Uili, Lesaisaea Evaimalo and Faleafaga Toni Tipamma), SPREP (Alan Tye), MPA, SPA, and CI-PIP (James Atherton and Leilani Duffy), Dave Butler, Alejandra Torres, PII team, Sonia Frimmel, Carola Warner and Rob Chappell. Funding for this training and project was received from CEPF and NZAID.

LIST OF PEOPLE IN THE ISLAND BIOSECURITY TRAINING, APIA, SAMOA

FULL TRAINING		
1	Nuutele Sagapolutele	Ulutogia
2	Seuala Patone	Lalomanu
3	Amiaitutolu Ionatana	Vailoa
4	Maria Oloisepu	Malaela & Mutiatele
5	Tiumalu Amakisi	Saleaumumu
6	Tavana Iefata	Lotopue
7	Taua Vae	Samusu
8	Tafaoatua Pepa	Utufaalalafa
9	Tolu Iakopo	Tiavew
10	Ierome Mulumulu	Samoa Ports Authority (Aleipata Wharf)
11	Pulea Ifopo	MNRE/ MPA
12	Moeumu Uili	MNRE
13	Elizabeth Kerstin	MNRE
14	Malama Momoemausu	MNRE
15	Titi Simi	MNRE
PART-TRAINING		
1	Tuiluaai Loakimo	Amaile
2	Faleafaga Toni Tipamaa	MNRE
3	Lesaisaea Evaimalo	MNRE
4	Juney Ward	MNRE
5	Letoa Tula	Ulutogia
6	Seufale Lauvao	Saleaumua
7	Fueloa Tavita	Utufaalalafa

GUESTS/ OBSERVERS		
1	Iaumuna Akerei Leau	MAF Quarantine
2	James Atherton	CI-PIP/ CEPF
3	Leilani Duffy	CI-PIP/CEPF
FACILITATORS		
1	Marleen Baling	PII
2	Bill Nagle	PII

Planned actions taken by various agencies, following the island biosecurity training (8-11 March 2010), Samoa.

No.	Action process	Responsible
1.	**Biosecurity management measures** a) Draft biosecurity management measures identified from training – risk species, invasion pathway, preventative measures. b) Add – incursion response measures. c) Review and refine.	PII MNRE/ MPA MNRE/ MPA/SPREP/PII
2.	**Visitor biosecurity checklist** a) Draft visitor checklist. b) Add-introduction. c) Review.	PII MNRE/MPA MNRE/ MPA/SPREP/PII
3.	Quarantine a) **Discuss** potential establishment of quarantine/ MPA office at Satitoa. b) Decide on who is responsible as 'quarantine officers' for the islands.	MNRE/MPA MNRE/MPA
4.	**Community awareness** a) Hold a community day for Aleipata District. b) Collate ideas from MNRE/MPA/CI-PIP, for raising awareness in the wider community – draft c) Review ideas, options, and logistics. d) Finalise a community awareness programme e) Implementation.	MNRE/MPA PII MNRE/ MPA/SPREP/PII MNRE/ MPA MNRE/MPA
5.	**Send biosecurity training evaluation forms to PII.**	MNRE

FIJI

28 JUNE – 1 JULY 2010

Suva, Fiji

Summary

The Pacific Invasives Initiative's Island Biosecurity Training was held for the National Trust of Fiji Islands (NTF) in Suva, Fiji, from June to July 2010. NTF is undertaking conservation projects for the Fijian crested iguana (*Brachylophus vitiensis*) on Yadua Taba and Monuriki Islands, and wants to improve biosecurity for these islands. The aims of the training were 1) to enhance understanding of island biosecurity, its purpose and how to maintain effective biosecurity programmes; 2) to enhance the knowledge and skills necessary to undertake basic biosecurity prevention, surveillance and incursion response; and 3) to collate information required for development of a biosecurity plan for Yadua Taba. This four-day training course was attended by NTF staff, who also invited participants from the land-owning community of Yanuya Island, the Provincial Councils of Bua and Nadroga/Navosa, Fiji Quarantine Division, and Birdlife International (BI).

The training covered basic concepts and processes of three components of biosecurity; prevention, surveillance, and incursion response. The importance and function of these components were reinforced with several activities, one of which was a fieldtrip to Mabualau Island, to learn about the continued biosecurity measures conducted by the land-owners following a successful rat eradication (by BI and land-owners with support from PII).

The participatory approach of this training encouraged interaction, personal opinions and experiences to be shared within the group, and all discussions were made in both English and Fijian languages. Overall, participants demonstrated an increased level of understanding on the basic concepts of invasive species and island biosecurity. Participants agreed that a greater grasp of invasive species issues and more communication between different parties were needed to develop biosecurity for Yadua Taba and Monuriki Islands. There were also agreements on the need for biosecurity inspections for local and international researchers and other visitors to the islands.

Introduction

The Pacific Invasives Initiative (PII) was approached by the NTF to run an island biosecurity training course for key staff involved in the project. This report presents results of the island biosecurity training held in Suva, Fiji, between 28 June and 1 July 2010.

The species recovery plan[1] for the critically endangered Fijian crested iguana, *Brachylophus vitiensis* requires the protection of their habitat via invasive species management. One important aspect of invasive species management is island biosecurity, which aims to prevent eradicated invasive species from returning, controlled ones from dispersing, or new ones from establishing on the island.

1 National Trust of Fiji Islands 2008. Fijian crested iguana *Brachylophus vitientsis* species recovery plan 2008-2011.

The recovery plan also identifies the need for establishing an island biosecurity programme and that NTF staff and the island community will need to be aware of and up-skilled in biosecurity measures.

PURPOSE

1. To enhance an understanding of island biosecurity, its purpose and how to maintain effective biosecurity programmes.
2. To enhance the knowledge and skills necessary to undertake basic biosecurity prevention, surveillance and incursion response actions.
3. To collate information required for the development of a biosecurity plan for Yadua Taba.

Training course programme

Day	Time	Activity	Key responsibility
Monday	9.00am	Opening	PII/NTF
28 June 2010		Self-assessment questionnaire	PII
		Excercise 1: Spot the difference	PII
		Yadua Taba Project	NTF
		Biosecurity: Why is it important?	PII + participants
		Prevention: Island risk analysis	PII + participants
		Exercise 2: Identify Biosecurity issues	Participants
		Prevention: Prevention measures	PII + participants
Tuesday	8.30am	Recap of previous day	PII
29 June 2010		Fiji Quarantine Division's view on biosecurity	Quarantine
		Surveillance: Areas of high risk	PII + participants
		Surveillance: Passive monitoring	PII
		Exercise 3: Identify potential incursion signs	Participants
		Surveillance: Active monitoring	PII
		Scenario 1: Pre-departure inspection	Participants
		Scenario 2: Monitoring plan	Participants
Wednesday	7.00am	Scenario 2 (continued): trap checking	Participants
30 June 2010		Island trip: Depart for Mabualau	Participants
		Scenario 3: Incursion reporting	Participants
		Incursion response: Response process	PII
Thursday	8.30am	Recap of previous day	PII
1 July 2010		Scenario 2 (continued): trap checking	Participants
		Scenario 4: Incursion response plan	Participants
		Self-assessment questionnaire and answers	PII+ participants
		Discussion: key points, lessons learnt	PII+ participants
	6.00pm	Welcoming of Taukei Yanuya	NTF
		Signing of MOU between NTF and Taukei	NTF
		Closing speeches	NTF and PII

Training days

The island biosecurity training course began on Monday 28th June 2010 and was attended by 12 participants from NTF, the land-owning communities of Yanuya, Provincial Councils of Bua and Nadroga/Navosa, Fiji Quarantine Division and BI. The training course used an interactive learning approach where participants were encouraged to ask questions and discuss the topics amongst themselves in their own language (Fijian). Presentations were also given by a NTF staff member and a Fiji Quarantine Service staff member in the first two days to generate discussion regarding the current island conservation projects and biosecurity issues in their country.

The course covered three components of biosecurity: prevention, surveillance and incursion response. The basic concepts within each component were defined and linked to the participants' day-to-day activities and their own perceptions, to provide an appreciation of the importance and application of biosecurity to both island biodiversity and community livelihoods. The cost-benefit (cost, time, labour) of each component with prevention as the preferred option was also emphasised.

The application of these concepts was reinforced by several activities, which included identifying day-to-day biosecurity risks via photographs, analysing island biosecurity risks for Yadua Taba Island, conducting a pre-departure inspection scenario, planning rat and ant surveillance for an island, reporting a suspected incursion, and planning rat incursion responses for Yadua Taba and Monuriki Islands. Additionally a fieldtrip to Mabualau Island, where a successful rat eradication project had been conducted by BI and the local land-owners, presented an opportunity to see biosecurity being applied on the island.

A questionnaire was circulated to the participants prior to the course to assess the overall level of understanding of biosecurity. The questions were divided into four main sections: participants' opinions, basic concepts, biosecurity processes, and biosecurity application. This structure was designed to aid facilitators in identifying areas that require attention during the course. The same questions, in different order, were given on the last day to assess changes in opinion, knowledge or understanding after the course.

Outcomes

UNDERSTANDING THE IMPORTANCE OF BIOSECURITY

The first section of the questionnaire targeted the participants' opinion on five aspects related to island biosecurity (Table 1). On average, the participants ranked the dependence of people's livelihood to a healthy environment, and importance of preserving the biodiversity of the island as the two highest. The importance of biosecurity and the level of threat of invasive species were however ranked the lowest. This overall opinion significantly[2] changed after the training course, and all five aspects were ranked almost equally high. This may indicate an increased awareness on the link between the role of biosecurity and the sustainability of their livelihood and island biodiversity.

2 Paired t-test, p=0.03. NB: Participants who answered only one questionnaire were omitted from the statistical analysis.

Table 1. Overall participants' opinion on several aspects related to island biosecurity. The level scales are 1–5 (low to high importance). The table lists the mean values for 10 participants, with the range of the levels recorded for each aspect.

	Pre-training		Post-training	
	Mean	Range	Mean	Range
Threat of invasive species to Fiji islands	4.09	2-5	4.78	3-5
Importance of biosecurity for Fiji islands	3.91	1-5	4.78	3-5
Importance in preserving the biodiversity of Fiji islands	4.64	3-5	4.67	2-5
Dependence of people's livelihood to healthy natural environment	4.78	4-5	4.89	4-5
Importance of invasive species management to the community/ organisation	4.40	2-5	4.78	3-5

The importance (and preservation) of their islands was also discussed amongst participants in the first day of the training course. Some of the comments include:

- The Roko of Bua (Mr. Jale Singarara) suggested that the lack of appreciation for the Fijian crested iguana and their islands from the community of Bua is because they have never seen one before. People place higher value on something that they have seen or touched.
- Mr. Apisai Susu of Monuriki and the Roko of Bua questioned the value of protecting the Fijian crested iguana at Yadua Taba, as the high-cost of the project did not seem to provide any monetary returns (landing is restricted on Yadua Taba).
- Mr. Jone Nuikula (NTF) explained that the value of the iguanas is that they are unique to Fiji and will be irreplaceable if they become extinct. Fiji needs to change its perspective by trying to prevent extinctions from occurring rather than realising their importance when they are gone.
- NTF expressed that besides the communities, local and international organisations, strong support from the Fiji government is essential for the iguana's conservation. NTF have been working on raising community awareness through presentations by therangers in villages and at the District meetings, and it hoped that the current training course may provide an opportunity to gain support from the Provincial Office as well.
- The Roko of Bua seemed interested to learn more about the current issues of these island projects. He commented that by knowing the background of these projects, he would be in a better position to make judgements if any problem arises in his Office.
- The discussion on "what is biosecurity" by the participants revealed that they see the concept generally as 'guarding ("*yadra*") of the boundary', where it 'looks after [their] natural resources (Fijian heritage)' or protects the values of their island (income, biodiversity, heritage for the future generation).

ENHANCING KNOWLEDGE AND SKILLS IN BIOSECURITY

The questionnaire also tested the participants' understanding of basic biosecurity concepts, processes and its application. As anticipated, on average the participants seemed to know least about basic concepts, followed by biosecurity processes (Figure 1). The high scores achieved for the application section of biosecurity were assumed to be as a result of the participants' experience

in their practical day-to-day work. During the training course facilitators ensured that all basic concepts were well understood by allowing more time to discuss these 'novel' concepts in Fijian language. The processes of biosecurity were taught by fthe acilitators and more time was spent on the activities, to give the participants an environment to expose any problems that they may encounter while going through these processes and how to solve them.

The post-training questionnaire showed a significant increase in the participants' understanding of the basic concept, with a slight increase in the understanding of biosecurity processes. There was a slight, but negligible decrease in the understanding in application of biosecurity. Generally, results from the questionnaire indicated that the average participants' understanding of all three sections is now on par.

The highest score was from staff of BI, followed by Provincial Council officers for the pre-training questionnaires. NTF staff increased in the average score to second highest in the post-training course questionnaires. Additionally NTF's range of the scores was smaller in the post-training questionnaire (56-81 vs. 69-88). The questionnaires were set in English only and, even though discussion of questions in Fijian was encouraged, this may have disadvantaged Yanuya Island community members who did not achieve the same level of increase as other participants.

Table 2. Average scores (in percentages) and ranges for each group of participants in the pre-training and post-training course questionnaires. n indicated the number of participants.

	Pre-training			Post-training		
	n	Mean (%)	Range	n	Mean (%)	Range
National Trust of Fiji Islands	3	67	56-81	4	78	69-88
Birdlife International	2	80	81-88	1	100	
Provincial Council	2	72	69-75	1	69	
Fiji Quarantine	1	50		1	56	
Community members	3	48	44-50	3	50	44-56

Throughout the course, participants were given opportunities to raise issues that they were concerned with in each component. Some of the main comments or issues raised were:

- Realisation that the current focus of biosecurity (including international borders) has not been (but should have been) on prevention measures. Most of the biosecurity measures that are in place have mainly applied to the surveillance and incursion response stages, such as in the case of the green iguanas found in Taveuni and termites in western parts of Fiji.
- Prevention would require enforcement and the ability to identify species incursions but by whom? Suggestions for Monuriki Island were that reports can go through the landowner committee members to the Provincial Government Office.
- Concerns were also focused on visitor cruising permits. There is a protocol currently in place for visiting yachts to obtain permits for island visits at the main port of entry in Fiji. However several issues were raised on the logistics and enforcement of these permits – most landowners or council officers in one district are not informed of permits issued for another district. It is unsure if land-owners or other public figures have the right to demand to see a permit from any visitors, and whether this could include a condition of mandatory biosecurity checks for yachts prior to permit approval.

- Identification of one major biosecurity risk for Monuriki Island was visitors from approved resorts. Suggestion was to strengthen the partnership between the resort and land-owners to ensure all resort companies (including their visitors) comply with biosecurity measures (e.g. cleaning and checking of boats and equipment, biosecurity awareness to all visitors landing on the island). The Mamanuca Environmental Society may be able to help with this.
- Participants agreed that producing a visitor checklist and proper pre-departure inspections may be practical for Yadua Taba Island, which has more controlled access compared to Monuriki Island.
- Awareness that surveillance and reporting of an invasive species incursion require careful observation, not only at the site of the suspected invasive species but also its surrounding area. Detailed information should be gathered as much as possible. The capability of a photo to capture good, reliable information (vs. inexperienced observer) was discussed, and a suggestion that the community could be provided with resources to collect such information (e.g. sample data form, digital camera) was raised.
- Importance of rapid response to a suspected incursion and the complexity of an incursion plan. Participants were made aware that incursion response options can be complex and can cut into the response time if not pre-planned. The plan can either be another eradication attempt (i.e. high cost in the short-term) or control management (i.e. high cost in the long-term), and both require much research, decision-making, equipment, labour and funding allocations. NTF realised that their investment for each project is high, and therefore will require further careful thought and planning.
- Importance of information-sharing and networking. NTF staff realised during the incursion response planning activity that they have little experience in some technical aspects such as eradication operations, and the presence of experienced organisations at hand such as BI and PII were helpful in providing guidance on incursion response planning. They foresee the possibility of approaching such organisations more often to help them with their future projects.

COLLATING INFORMATION FOR YADUA TABA ISLAND'S BIOSECURITY PLAN

Some information was collected for the island biosecurity risk analysis, however this requires further confirmation from NTF due to the lack of detailed knowledge in some aspects (e.g. invasive species present on Yadua).

Participants' satisfaction

The island biosecurity training course had positive responses from the participants. The satisfaction survey was returned with high scores within the scale of 1-4 (lowest to highest), Table 3. Overall most participants found the course interesting and appreciated the interactive learning approach, especially the group activities and the opportunity to converse in their own language. There were also comments or requests for more island biosecurity training courses to be conducted, including follow-up workshops.

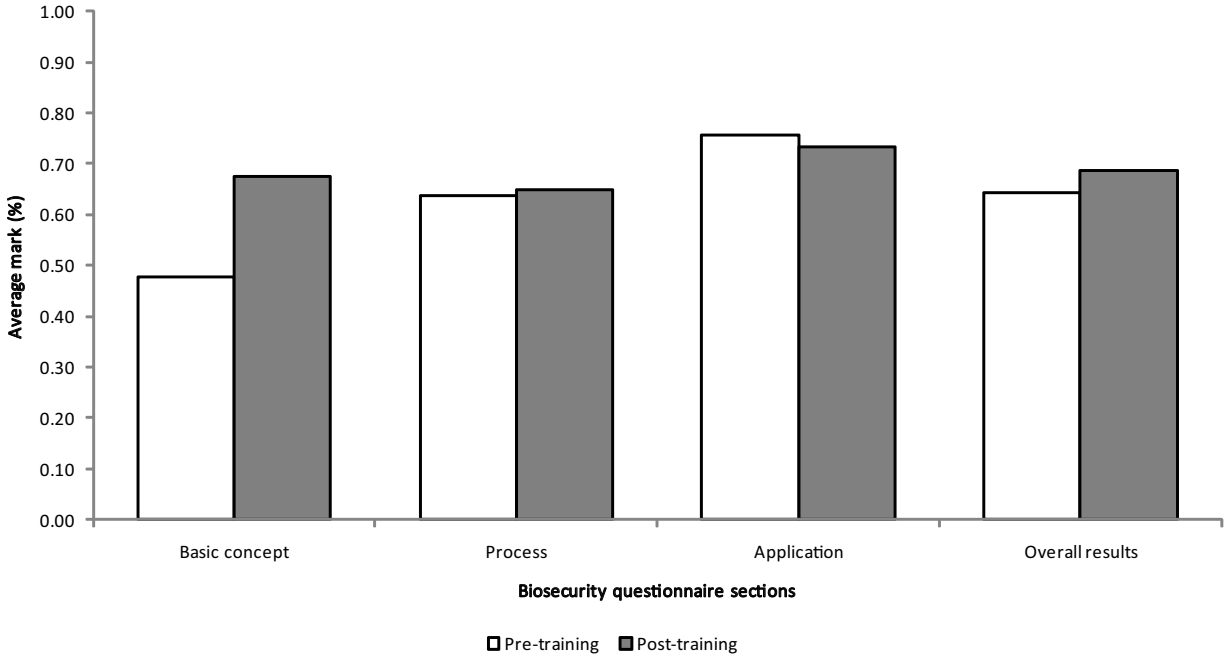


Figure 1. The average score (in percentage) for the island biosecurity pre-training and post-training course questionnaires. Questionnaire is divided into three sections: basic concepts of biosecurity, biosecurity processes and application of biosecurity. Asterisks indicate significant differences between pre-training and post-training questionnaire ($p<0.05$).

Table 3. The average participant satisfaction scores for the island biosecurity training course. Scores are at a scale of 1 to 4 (lowest to highest) and also average percentage in participants' agreement to the statement provided.

	Average score
Training course met participants' expectations.	3.82
Facilitators helped participants to understand biosecurity.	3.64
Methods in this course will help participants in their work.	3.91
There was adequate time to cover all issues of concern.	3.18
The course material was useful and easy to follow.	3.91
Participants had opportunities to their contribute knowledge and skills to the course.	100%
Facilitators provided clear explanations and instructions throughout the course.	100%
Participants found course manual useful.	100%

Lessons learnt

The island biosecurity training course for NTF is regarded a success, however not without some issues.

1. Pre-course communication between facilitators and host. Constant communication is necessary to plan for the logistics and content of the course to ensure all expectations are met. The lack or delay in gaining information from the host organisation (e.g. organisation expectations, participants list, course venue) subsequently meant the delay in producing and providing information from the facilitators (course timetable, flight and accommondation booking).

2. Language barrier between participants and facilitators. Encouragement of the participants to conduct discussions in their own language (Fijian) was very productive; however there were occasions where little translation was relayed back to the facilitators in English. This meant that the facilitators were not able to input to the discussion at hand. The questionnaire and satisfaction survey were not prepared in Fijian, which may have led to mis-interpretation of some of the questions influencing the overall evaluation of the participants' progress. Possible solutions could be to translate the questionnaire into the host country's language, or have a representative host to translate orally in the training room.

3. Adaptive course content. Normally a standard training course would have a set location and course programme for each event. However due to the nature of PII's courses being held at the host country, details of the course programmes can change according to the project and situation (e.g. limited resources available at the venue, fieldtrip site selection, limited information received, language differences, cultural perceptions, different background and experiences of participants).

   The course purpose or components do not differ, however the facilitators should be flexible enough to modify the programme, tone and speed according to the participants at hand. For example, upon knowing the presence of a representative from the Fiji Quarantine Division the facilitators suggested that the officer gives a presentation in the course to provide Quarantine Division's perspective on biosecurity; longer discussions were allowed for some important topics raised, and the complexities of some activities were simplified as necessary.

4. Activities to enhance understanding or experience of the participants. Activities held for this course were very well received. There were some difficulties in understanding the processes at times, but a discussion about these difficulties were raised or discussed at the end of each activity. In a normal 'lecture-type' approach course, issues on applying the concepts taught may not appear until participants are in their normal workplace, and would not have such support to deal with them.

Next course of action

The following list of actions was recommended from the biosecurity training course:

1. An island biosecurity checklist will be developed for Yadua Taba and Monuriki Islands (Action by: NTF)

2. Discuss with Mamanuca Environment Society for possible partnership to establish (and enhance) biosecurity measures for Monuriki Island (Action by: NTF).

Invasive Plant Project Management Training Course

3 – 12 MAY, 2011
Fiji

REPORT PREPARED BY:

Bill Nagle, Project Coordinator/Course Facilitator, Pacific Invasives Initiative;
Glen Coulston, Subject Matter Expert, Pacific Invasives Initiative

SUMMARY

As a result of working in Pacific nations on various invasive species management projects, the Pacific Invasives Initiative (PII) recognised a need to strengthen capability and confidence in the planning of invasive species management projects. In response, PII developed a training course for management of invasive plant projects. PII was asked to deliver this training course for staff of The National Trust of the Fiji Islands at the Ezo Beachfront Resort, near Sigatoka, from 3-12 May, 2011. The design, implementation, monitoring and evaluation of priority invasive plant management projects in protected areas managed by the National Trust were covered during the training.

The course was based on action learning principles and gave attendees the skills necessary to collect and manage data for project planning and implementation for successful and accountable project management. Participants worked in teams to plan their own priority projects. The data collection and management system used in previous courses was further developed. It is easy to use and maintain and adaptable to other invasive species projects across the Pacific.

The National Trust of the Fiji Islands would benefit from follow-up training and recommendations are included in the report. This was the most challenging course yet as participants had not been able to prepare well and the venue posed some difficulties. However, participant evaluations of the course gave scores of 88% to questions about whether or not the course met their expectations and the methods used in the course would help them in their work. Comments offered included " *I am quite confident now to carry out a weed plan and monitor and evaluate the plan.*" and "*Designing a plan using a 'workbook style' is a great way to facilitate a planning workshop and get participants involved.*".

Participants at the end of the PII training course on invasive plant project management for the National Trust of the Fiji Islands.

INTRODUCTION

Invasive species management projects are usually complex and long-term. Effective project design and implementation is essential to assist managers to monitor and evaluate the effectiveness, efficiency and accountability of a project. Accurate and well-supported evaluations can help funding agencies decide which projects are worthy of ongoing support.

After a successful pilot course in Palau (2008), follow-up training in Palau and Yap (2009) and training courses in the Federated States of Micronesia (2009) and American Samoa (2010) (see reports at http://issg.org/cii/PII/), the Pacific Invasives Initiative (PII) was asked by The National Trust of the Fiji Islands to run a course for staff engaged in protected area management. Participants were from Sigatoka Sand Dunes National Park, Yadua Taba Iguana Sanctuary, Waisali Forest Reserve and Monuriki Island (currently undergoing restoration).

Each session started with an instructor-led presentation covering the stages and technical topics involved. Participants were engaged interactively to apply the information and techniques to build their projects based on what is relevant to their site and achievable in the Fijian context. Questions and discussion were encouraged. Teams then completed the relevant sections of their project plan with the three course instructors assisting as needed.

COURSE PURPOSE

The course was designed to:

- Give weed control personnel the skills and confidence necessary to manage invasive plant projects.
- Further develop skills in the collection and management of data for project planning, implementation, monitoring, evaluation and accountability purposes.
- Provide an efficient and effective data collection and management system that is easy to use and maintain and is adaptable to similar projects across the Pacific.

COURSE PARTNERS

The National Trust of the Fiji Islands (NTF)

Pacific Invasives Initiative (PII)

COURSE PARTICIPANTS

First Name	Last Name	Designation	E-mail	Telephone
Project: Monuriki Island Restoration				
Milika	Ratu	Project Officer	mratu@nationaltrust.org.fj	
Joeli	Vadada	Yanuya Landowner		903 0763
Project: Sigatoka Sand Dunes National Park				
Jason	Tutani	Park Manager	jtutani@nationaltrust.org.fj	927 4731
Paul	Tomasi	Community observer	tomasi_paul@yahoo.com	711 5771

Project: Waisali Forest Reserve				
Rogasiano	Ranuka	Park Ranger		971 3546
Ivereimi	Rogoira	Park Ranger	irogoira@nationaltrust.org.fj	652 0243
Project: Yadua Taba Iguana Sanctuary				
Jone	Niukula	Project Officer	jniukula@nationaltrust.org.fj	330 1807
Pita	Biciloa	Park Ranger	pbiciloa@gmail.com	850 0992

COURSE LEADERS

Facilitator: Bill Nagle, Pacific Invasives Initiative

SUBJECT MATTER EXPERTS (SMES)

Glen Coulston (Consultant to Pacific Invasives Initiative),

Tofilau Tavita Togia (Ecologist, National Park of American Samoa)

PARTICIPATING AGENCIES

The National Trust of the Fiji Islands

Laje Rotuma Initiative

VISITING EXPERT

Shingo Takeda, University of the South Pacific

Participants at the PII invasive plant project management training course in Fiji. (Photo: Bill Nagle).

COURSE CONTENT

The course was participatory and based on active learning principles. Introductory power-point sessions based on the subject matter experts' practical experiences provided real examples of the component being addressed and participants worked as teams to build up their workbooks as project plans with the instructors providing individual help where required. Participants were encouraged to ask questions and then discuss topics amongst themselves in their own language to conclude each block of learning.

The sections involving human resources, recording, monitoring and evaluation utilised Microsoft Excel spreadsheets and participants created their own human resource chart, work schedule, weed database, and key performance indicators which they used for monitoring the effectiveness and efficiency of their projects.

The course took the participants through the principal components of planning, implementation, and monitoring and evaluation, initially focusing on one selected invasive plant for each of their sites. Each section built on the previous one and used the results of that section to progress to the next one. In this way implementation resulted from planning, and monitoring and evaluation resulted from implementation.

All sections are inter-connected and that developed a robust, well-designed project built on good decision-making and providing measurable outcomes. This gave confidence and motivation to participants in relation to their invasive plant projects. The tools introduced throughout the course will be useful for other taxa and other projects requiring sound planning and meaningful results.

Two days of field work at Sigatoka Sand Dunes National Park provided participants with the chance to field-test weed treatment and data collection methods (including GPS) for Rivina (RIV), Leucaena (LEL) and African Tulip (AFT) and learn other best practice techniques from the trainers.

The teams focused on priority weeds for their protected areas. Participants worked on planning, implementing, monitoring and evaluating to ensure that success of their projects can be measured. The priority weeds chosen were: Waisali Forest Reserve – African tulip (AFT, *Spathodea campanulata*); Yadua Taba – leucaena (LEL, *Leucaena leucocephala*) and wedelia (TRD, *Sphagneticola trilobata*); Monuriki Island – mikania (MIK, *Mikania micrantha*) and mission grass (PEP, *Pennisetum polystachion*); Sigatoka Sand Dunes National Park – (AFT, *Spathodea campanulata*; LEL, *Leucaena leucocephala*; coral berry RIV, *Rivina humilis*).

Other invasive plants were also discussed: guava (GUA, *Psidium guajava*); lantana (LAN, *Lantana camara*); false kava (PPA, *Piper aduncum*); monkey pod (SMS, *Samanea saman*); soap ginger (ZIN, *Zingiber zerumbet*). A full list of names of plants from all four workshops to date, the country which first discussed them and gave them abbreviations can be found in Appendix 1. The Yadua Taba management plan was reviewed and suggestions for revision were made. The plan will revised by the Yadua Taba team by September this year.

At the end of the course, teams had their own project plan which can be enlarged and updated as capacity is increased or further relevant information is gathered. They had a resource chart, work schedule and weed database they can update and record data into and get performance measures from, and they had a PowerPoint presentation outlining their project to use within their agency or to external funding or other agencies. The participants created all these components for themselves as they worked through the processes.

Local knowledge and experience was combined with specialist experience to strengthen effectiveness, efficiency and accountability through improved project design, data collection,

monitoring, evaluation, and reporting. Lessons learned from the course will provide a model for other invasive species management projects in the Pacific. A further outcome of this training course was recognition that further gains can be made with customised training specific to the needs identified for each individual and/or project. These are detailed within the recommendations and proposed actions section.

The training course had three main time components:

1. PRIOR TO THE COURSE

1.1 NTF was sent a pre-course questionnaire explaining the commitment required (including an agreement signed by managers to complete a follow-up questionnaire after six months of practicing skills learned in the course) and to obtain background information about current training and equipment used, to be distributed to participants. Only three responses were received and there was wide variation in knowledge and skills.

1.2 A pre-course preparation sheet was also sent to NTF to be forwarded to participants to guide them in assembling the project information required for the course. The lack of data supplied was a disadvantage to course progress as there was not sufficient information to allow analysis of current progress and recommend changes to project management.

2. AT THE COURSE

2.1 Introductions

As the teams had not all met previously and it became apparent that many hadn't worked on weeds at all, or had very limited experience in techniques other than hand removal, it was decided, after introductions, to start the course with a field visit in Sigatoka Sand Dunes National Park to observe and discuss the weed issues present. This gave participants an opportunity to interact and instructors a chance to consider how best to undertake some weed management practice later in the course. The field visit exposed the seriousness of the invasive plant problem in Sigatoka Sand Dunes National Park and the limited knowledge and skills that were available to deal with the problem.

2.2 Team projects

The four teams presented work on their projects. The purpose of this presentation at the start of the course was for all attendees to acknowledge and understand teams' projects as they currently stand and, in sharing this information, broaden participants' experience and knowledge of weed project management. The information provided was to form the building blocks for each team to grow their weed project planning skills in a directly relevant project.

There was a very large range of skill sets, experience levels and roles amongst the participants. This ranged from those who had never done any weed management work to very experienced weed workers. The projects presented were also at very different levels of operation from those not started at all to those having been operating for 10 years.

Teams were not well-balanced with only the Sigatoka Sand Dunes National Park and Yadua Taba teams having the ideal situation of supervisors and rangers both present. This posed problems as the course was designed to focus primarily on project management.

The SMEs presented examples of weed management projects in their own countries. Tofilau Tavita Togia presented information on the weed-led Tamaligi (*Falcataria moluccana* (AFT)) management

project in American Samoa. Glen Coulston presented an example of a site-led multi-weed management project in New Zealand. These presentations demonstrated the different approaches that can be used, how and why they are used, how and what information is recorded, how success is measured and how to use that information to improve invasive plant project management.

As a result all attendees became better aware of each other's projects and developed a broader knowledge base of weed management by exposure to new information and examples.

Through these introductory steps, attendees were introduced to the training course content and concepts. This is a valuable, important and enlightening component of the training for both participants and instructors.

The variability in skill sets of individuals and the varying status of the four projects meant that there was a need for the course to be flexible and presenters to be adaptable and revisit topics often to ensure nobody got left behind. Without these preliminary steps the course could easily have been pitched at the wrong level for the participants.

Participants preparing for field work during the PII invasive plant project management training course in Fiji. (Photo: Shingo Takeda).

2.3 Course content

Participants then revised their team projects by the using the three-pronged modular approach described below through discussion and 'hands-on' computer sessions guided by the workbook developed for the course:

Planning:	**Implementation:**	**Monitoring and Evaluation:**
Objectives	Methods	Success Measures
Target characteristics	Mapping	Evaluation
Project site characteristics	Human Resources	Reporting
Timing	Recording	

MODULE 1: PLANNING

Following the field trip and presentations each Project Team selected a weed/s in their site on which to focus their particular project plan. It was important to determine how each weed selection could influence the growth of other invasive plants at each project site.

PROJECT GOALS AND OBJECTIVES

The purpose of this session was for teams to determine what their objective was and the reasons why achieving that objective was important. The teams also determined whether their project was achieving site-led or weed-led objectives. The project plan workbook was introduced and each project team discussed and completed this section of the project plan.

Teams determined and justified their objective, to themselves and others, and whether it was suited to either a site-led or weed-led programme. A record of this was captured within their workbook. All teams evaluated their objectives in terms of eradication or the relevant level of control suitable to their projects.

A discussion on the weed risk assessment system (http://www.hear.org/pier/index.html) developed for Hawai`i and an exercise in ranking invasive plants in terms of seriousness, or potential seriousness, of threat was included to assist with prioritising plants within projects.

It is recommended that teams familiarise themselves with the goals and objectives in the primary documents for their sites (e.g. NISAPS, Management Plans, etc.) and plan their projects accordingly.

PLANT CHARACTERISTICS

The purpose of this session was for the teams to determine the important characteristics of their priority plant in relation to managing the species spread and effective management. These included the dispersal vectors, dispersal distance, maturity rate, seasonality, natural inhibitors to growth, maturity and spread, seed viability and whether the plant can be effectively managed in the long-term.

Teams identified the important plant life-cycle events and also the factors that were unknown; dispersal vectors, characteristics of spread and a management method for the species. Each group created a simple spreadsheet to capture the information about their respective species which will form the basis of an invasive plant database.

It was very useful to have participants from throughout Fiji to share each other's experience of particular plants, especially for those groups who had limited knowledge of their species. It was very evident that basic knowledge of plants was not strong and most teams will have much post-course homework to complete to research information about their weed species.

It is recommended that teams continue to search for information which is lacking through networking with each other and using online resources such as PestNet, the Global Invasive Species Database and product manufacturer's websites. They also need to determine the important characteristics for the management of other invasive plants in their area.

PROJECT SITE CHARACTERISTICS

The purpose of this session was for teams to determine the characteristics of the project site, how the site influenced project implementation, where the "front", "stratified" and "long-distance" dispersal zones were and which areas within the site were more favourable to plant spread.

All groups appeared to understand the different parts or zones of an invasion. Different influences affected each project site from islands where access issues made treatment logistics difficult but reinvasion lower, to Sigatoka with habitation, cultural use, fire effects and high risks of reinvasion from neighbouring lands.

A valuable session on changes in the invasive plant composition of Sigatoka Sand Dunes National Park over the last 30 years was presented by Shingo Takeda, a GIS specialist from USP. This was based on his PhD study and clearly showed the progression of weeds since the first survey done in 1978. Shingo's work helped National Park staff decide which of the many weeds present in the park to work on first.

It is recommended that teams continue to investigate and document the characteristics of their project site that influence their weed project design and implementation.

TIMING

The purpose of this session was for teams to determine the important time variables within the life-cycle of the plant while implementing the management strategy and whether management can be implemented faster than the plant can spread. The concept of work scheduling was introduced and groups identified the months that were important in managing each species and used a spreadsheet to track these.

Where time variables were not known by each group, other teams shared their knowledge. This was an excellent outcome and one which will hopefully be repeated now that teams know each other around the region. Some teams doubted whether they could manage some of their invasive plants faster than they could spread given their current resources and changed their objective from eradication to controlling to reduce spread. This showed a certain amount of clear and realistic rationalisation occurring.

It is recommended that teams continue to determine: what significant time variables are important within the life-cycle of other invasive plants while implementing the management strategy for their priority plant; whether management can be implemented faster than the plant can spread.

MODULE 2: IMPLEMENTATION

It was evident during early discussion that none of the project teams had weed management examples or the necessary data available for progressing through the last stages of the life of a project. It was equally evident that participants had limited experience in weed management treatments. Only Yadua Taba staff had been involved in trials and had conducted extensive manual removal treatments.

The Waisali project had no data other than spatial distribution and had not tried to manage weeds at the site. The Monuriki project will not start until goats have been eradicated from the island, but some of the weeds present are known. Sigatoka has a PhD study available highlighting the severity of weed issues but no active management has occurred to deal with these issues and there was nothing to base their project plan on.

Yadua Taba had undertaken many years of weed management and surveillance results had shown some of this treatment was very successful. Wedelia, or trailing daisy (*Sphagneticola trilobata*, TRD) in particular, has largely been removed from the island with the population now at zero density. Bark-stripping trials in Leuceana (*Leucaena leucocephala*, LEL) management had proven ineffective at killing the plant with repeated treatments required. Raintree or monkeypod (*Samanea saman*,

SMS) management trials had been conducted 10 years prior but were inconclusive. No records of population size and management success had been documented since this work was completed.

Three species, Leuceana, Rivina (*Rivina humilis*, RIV) and African Tulip (*Spathodea campanulata*, AFT) were selected during the field trip to Sigatoka Sand Dunes National Park that had relevance to the majority of project sites and so data could be captured during the field trip and used in the methods, reporting, monitoring and database stages. Demonstration and training in treatment techniques was undertaken for LEL (cut-stump) and RIV (hand-pulling). A trial in herbicide application rates, based on information from other Pacific countries, was conducted for AFT.

It is recommended that participants be given the opportunity to practice implementation techniques either by onsite field-based instruction or development opportunity with other organisations in the Pacific. All participants were in need of intensive training in basic weed management field techniques to improve understanding and availability of effective options. This course simply did not have the time available to cover such basic skills.

It is also recommended that teams investigate how treatment of one species may influence other invasive plants that are determined to be priorities for each site. Course duration did not provide enough time to investigate such relationships and each site will have its own unique set of inter-plant relationships. Theory and techniques were talked through, but there was a clear need for further demonstration and practice by participants.

METHODS

The purpose of this session was for teams to determine: what method(s) of management they would use on the invasive plant to be most effective and efficient, while using a lowest toxicity policy; who would implement the management operations, at what interval and time of year; and what tools and materials would be required.

Instructors provided examples of vine, shrub, tree and groundcover weeds and situations when manual removal, cut-stump, foliar applications or a combination was best suited. A simple spreadsheet to determine who was available to do the implementation was introduced as was a project schedule to determine what parts of the calendar year were most suited to management timing. A primary framework for invasive plant project management was introduced.

Time was spent going through different active ingredients contained in various herbicide brands along with the risks they posed to humans and the environment. No team could tell us what herbicides were available in Fiji and what legislation covered them, which highlighted how little they are used in conservation work. A quick search of the local agricultural supplies store found that Paraquat, Diuron and Glyphosate were the only products available.

An emphasis was placed on the need for teams to research what products were already available in Fiji as and the mechanisms for importing modern ones. This appeared to be quite an eye-opening experience for some and will probably lead to other herbicides being sought for specific tasks.

The exposure to and the thoroughness and rigidity of the "Hazardous Substances and New Organisms Act" in New Zealand hopefully fostered a greater interest in which herbicides the nation is using and the safety aspects which are important when using these tools. The site visit and application practice with appropriate safety equipment helped encourage this.

It is recommended that teams (and appropriate NTF staff) further explore herbicides and other techniques available that are socially acceptable in Fiji. From this they can improve their decision-making towards what methods and herbicides to use in different situations and for different types of plants.

MAPPING

The purpose of this session was for teams to determine what defines a "site" or how they visualise a "site", how it is best represented spatially as a polygon or a point, how they will reference or fix the site spatially both on the ground and on a map and how they will measure its size.

The concept of "spatial data" and how invasive plants can be mapped by using either polygons or points and given a unique identification was demonstrated. Examples of how this information can be used advantageously were provided including the use of GIS and GPS tracklogs and waypoints, and the use of historical information.

Basic instruction in GPS use including; how a GPS works, how to determine the accuracy of a reading by looking at where satellites are on the screen, how to check the accuracy of a reading, how to turn the tracklogs off/on, how to mark a location waypoint and navigate, etc., was provided and practiced outside.

Although teams showed an understanding of the principles, all individuals were at a very basic level of GPS use. GIS maps of their sites using point locations and polygons were available but it was evident this data was gathered and generated by another individual who was not participating on this course and had not been used to portray any further information except location.

GPS is not new to these islands because they are often used at sea, however this appears to be as a guide to location as opposed to actually getting and using data. While some individuals got to practice GPS use during the field trips, others require more intensive one-on-one training to better grasp GPS application.

It is recommended that teams should map all sites for priority weeds and give each one a unique identification in the form prescribed for consistency, e.g. "AFT001". To do this they should be enabled daily with GPS to record locations of new sites and map GPS to locate all sites. Each individual, or at least the team, needs to be self-sufficient in field GPS use, data collection and basic point data file download. GIS skills for advanced mapping of their projects can be a service provided outside the project team.

HUMAN RESOURCES

The purpose of this session was for teams to determine: what human resources they have for use on an annual basis; how much is required to implement the project at each site or group of sites; what the key skills each employee requires to complete their tasks effectively and safely from basic treatment operations through to managing the project.

Instructors introduced a simple spreadsheet to analyse the different skill sets that personnel needed to complete the project, how well their organisation was equipped with the required skills, or whether they needed to build further capacity. Another spreadsheet was introduced to analyse the amount of human resource they had available to them and what they needed to complete their planned works, how to analyse the results to determine a surplus of resources, or whether they needed to build capacity.

The teams created spreadsheets for scheduling current operations and the skills required. The financial year and seasons were defined and time resource estimates were entered for each site or group of sites. The time resource estimates were compared to actual resources available. A real challenge here was balancing and factoring in other work priorities. In essence, teams didn't focus on what the project tasks required, but what they could fit in within existing resource availability. Consideration was not given to building cases for funding proposals which all these sites warrant as they are in initiation stages.

All teams appeared to not have enough human resource to implement the management of their sites. Capacity would need to be built for projects to progress, or efficiencies in the current programme would need to be increased. It is also noted that these resources have been estimated and that they should be updated as true quantities are recorded upon implementation. The skills required for the projects were similar in all sites.

It is recommended that the operational schedules should be updated by teams following implementation to ensure the estimates are a true measure of time required for each site or group of sites. Increased experience in management methods would reduce the regularity of revisiting that many of the sites on the Yadua Taba project need, allowing further resources to be used on new species. Skills identified as being required but not met should be addressed during customised follow-up training.

RECORDING

The purpose of this session was for teams to determine what measurable site-records they should collect during each management operation, how they would collect the data, what would happen to the data and where it would be stored and backed up.

Keeping it simple was reinforced. Instructors compared examples of expensive monitoring techniques conducted separately to treatment operations with efficient monitoring techniques focused on measuring success while treatment is being implemented through proxy measures. Essential records required to measure success were discussed, along with how they should be recorded on either a flat or relational database.

Common TLA's (three letter abbreviations) were determined for the main invasive species to be used throughout Fiji so data can later be put into one master database and to maintain data simplicity throughout the NTF projects. These were added to the list from previous PII training courses.

The teams identified key data needed to measure success and created their own flat databases in Microsoft Excel using the worked examples from the field trips for LEL, RIV and AFT. Each project team created an Excel worksheet for recording treatment records, observational information, species information, and site information for their own project. The structure and format allows the database to be very simple and easy to enter data but also allows the data to be easily inserted into a relational database at a later date.

It is recommended that each team uses the database to record daily site visits and add further required attributes are to the site and species record tables as required. Each new site should be added to the database with a unique identification and TLA's should be used consistently throughout Fiji.

MODULE 3: MONITORING AND EVALUATION

As mentioned above three species (Leuceana (*Leucaena leucocephala*, LEL), Rivina (*Rivina humilis*, RIV) and African Tulip (*Spathodea campanulata*, AFT)) were selected during the field visit to Sigatoka Sand Dunes National Park to use as examples to complete this section of the training as teams had no base data for their projects.

MEASURING SUCCESS

The purpose of this session was for teams to focus on determining which "key performance indicators" or "measures of success" they would use, how they would achieve these measures and who would be responsible for ensuring they were completed.

Instructors provided examples of monitoring, from qualitative photopoint techniques to quantitative key performance indicators and statistics. Graphs were prepared to illustrate results from the site visits but, without historical records, their application over time was theoretical. Training course participants discussed what trends the graphs would show over time.

The Waisali, Monuriki and Sigatoka teams had no data on previous treatment effort for their projects. Hopefully now, with new knowledge and skills, they will be capable in the future. The team from Yadua Taba had much data pertaining to their trials but it had already been collected and analysed in a report compiled by others 10 years earlier. However, this gave opportunity for teams to see effectiveness demonstrated from that data.

Teams recorded the particular key performance indicators and measures they would use for their projects in their project plans and these were discussed by the group.

It is recommended that each team continue to use these success measures and the others provided in the training course to evaluate, justify success and identify problems in their projects.

EVALUATION

The purpose of this session was for teams to use their success measures to determine if they were having success towards achieving their objective and if they were not, why not? If they were not successful teams were to determine ways of improving their success.

As there was no treatment history to evaluate, instructors and participants discussed scenarios that graph results may illustrate. Teams were encouraged to think about reasons why upward or downward trends on graphs show levels of success and how they could make changes or improvements to their project to make them more successful.

Workbooks were completed by each team to describe the evaluation techniques their projects would use. These were discussed amongst training course teams. It was impossible for teams to actually evaluate their previous work because they either had not done any work or had not captured data to measure it.

Using the data generated from the field visits, the teams successfully grasped the concepts and value of measuring success from sound data collection. They identified whether or not the follow-up data collection visits will help show whether the characteristics of the invasive plant were understood and whether treatments were successful or not. They also identified improvements they could make in recording data and treatment success/failure.

It is recommended that teams get the opportunity to practice and relearn the application of all these processes within a project life. It is essential that participants regularly identify whether or not they have been successful and constantly look for improvement. Due to the data and time constraints of the course this could not be covered sufficiently.

REPORTING

The purpose of this session was: for teams to compile a report that was clear, concise, accurate, objective, measurable, accountable and containing recommendations towards required changes or further actions to allow the project to be more successful; for teams to create and deliver a presentation to their peers suitable for describing their project and its success. (Note: this is designed to also be presented to stakeholders, but none were present)

Instructors facilitated discussion about what the essential elements of a successful and meaningful report would be. It was encouraging that all of the elements were raised and the awareness that

their workbooks, when completed as a single document, would provide the basis of a full report. By utilising their report they can make presentations highlighting their project to stakeholders and interest groups.

The use of computers from the start of the training course had enabled teams to enter the information as the training progressed through the workbook/project plan, but more time on this section would be beneficial.

Unfortunately, with limited weed management work conducted, or data collected, teams could not construct their own reports. But, by discussing the construction of a report and the information required, the number of issues taught during the training course was emphasized and teams realized that they had worked through their project plan in a systematic and thorough manner.

The presentations were delivered to their peers in a confident manner with thorough information about the project plan. Some were conducted by verbal presentation solely and others who had the skill set by PowerPoint display.

It is recommended that teams complete their project plans by September and email them to Bill Nagle to review. In particular, the Yadua Taba plan will need to be completed by September. When all teams have collected a year's worth of weed work data in the manner suggested they can do the same again.

3. AFTER THE COURSE

3.1 participants can contact the instructors for advice as they develop their projects with their new skills and knowledge.

3.2 a follow-up questionnaire will be administered by PII six months after the course to check on application of the skills and knowledge.

3.3 follow-up visits to NTF sites are recommended to institutionalize the learning.

4. RECOMMENDATIONS AND PROPOSED ACTIONS

The training course as it was implemented was generally well received and much was learnt by participants. The scope was fairly thorough and the system used followed a logical progression. The focus on project management was very useful for the few supervisors present, but made for challenging times for the Rangers as documenting and analysing their work appeared to be something entirely new.

It is vital that data are collected and analysed and results evaluated for a project to be managed properly at all levels. Opportunities to improve and update skills in all areas of project management and implementation are difficult to access and procure and commitment and follow-up is required to maintain the knowledge and skills learned when teams return to their sites.

Given the wide range of knowledge and skills, experience, and the issues to consider, this was always going to be an extremely intense and challenging training course for both participants and instructors. The amount of information for participants with different roles to process and understand and the amount of time available for one-on-one help were not a good match and individuals will need customized training to reinforce the learning from the course.

The pre-training questionnaires were not returned. These would have given better information on participant's knowledge and skill levels and experience prior to the training which would have

enabled design of a course targeted to NTF requirements. As a result of this misunderstanding of expectations at the outset, much time was spent on explanations of fundamental knowledge and skills that were presumed would be known by participants.

A course in field skills related to weed management techniques and plant biological responses to weed management may have been of greater benefit for this mix of participants. Such a course would then be a good precursor to weed project management training.

Recommended ways to address this are:

- Participants should return pre-training course questionnaires at least two weeks before the training course.
- The questionnaires should drill into the individual's current weed management skill levels.
- Participants must be fully prepared with historical data, current maps etc. Where this is not always possible (because some teams have no historical information), PII needs to be informed that this is the case.
- Training customised to each individual's/team's further needs should be scheduled.

The first three of these recommendations involve better communication before the training course. The recommendation for further customised training to reinforce the concepts learnt to date is described below.

5. CUSTOMISED TRAINING AND FOLLOW-UP

During the training course it became apparent that each project team required further training if NTF is to become self-sufficient in weed management. All needs for these teams could not be met in the training course. This is because each site has different levels of technical support, skill and technology. These differences in project management experience mean that successful weed management may be difficult or impossible to measure without further training.

The best way to address this situation is to spend time with individuals or teams after they have completed the basic training course. This will address the need to fill in the gaps and iron-out any problems where they have arisen. The optimum time to do this is as soon as possible after the training course so the entire process can be set up and implemented correctly. There is nothing more frustrating for field staff and management than collecting data that is not consistent and which can render results difficult to interpret.

All project teams

Customised follow-up for all the teams should address the following issues:

- Prioritisation of weeds and sites particularly due to the vast extent of weed problems,
- Introduction of alternative herbicides and their use. Research into what is currently available in the Fijian market and what procedure is required to procure more options from overseas,
- Establishment of a weed management GIS layer for their GPS and map creation.

And ensure that:

- training course recommendations are applied on a daily basis,
- a consistent tried and proven method of management is used for each weed species. Where a tried and proven method is unknown, knowledge of how to trial techniques and research new options is required,

- all field staff are capable in using GPS correctly for use in weed projects,
- field staff can accurately delimit weed sites,
- the work schedule is updated following ground operations.

Most of these issues can be addressed by: spending time with NTF staff in their field helping them record and enter data properly; supplying proper GPS units with weed sites mapped on them; using standardised field data collection forms; acquiring some alternative materials and supplies,.

After following up on the last field visit on the course, it became apparent that just being there as a mentor to answer concerns or provide explanations or training where required was very helpful and resulted in more successful projects.

Sigatoka

With the number and extent of weed issues present at this site, prioritisation training is essential to see through the maze of weed issues. Building knowledge and skills of a diverse array of weed management techniques is also essential.

Forest restoration and revegetation starting from bare earth is required in places. Upskilling in selective harvest of introduced species (leucaena for firewood, mahogany for timber) could assist weed management issues by harnessing community power and generating revenue.

Waisali and Monuriki

Further training for these teams is going to be needed once the projects are into the implementation phase. To ensure effort is not wasted, the results of the African Tulip treatment trials need analyzing (and modifying and improving the technique if necessary) before further management is attempted at Waisali. Limitations of herbicide experience and techniques will hamper progress on weeds unless staff receive more focused training.

It is worth noting that regular visits should be made to further upskill these teams in their local sites as conditions allow. Weed management is forever a changing industry and it is important to keep up-to-date with these changes, especially given the limited success of techniques on tropical weeds. This will be especially important once good survey and management effort data has been collected for at least a year.

Rogasiano Ranuka, Waisali Forest Reserve Ranger and Mayor of Waisali Village, attaches an identification tag to an African tulip (AFT) tree during the PII invasive plant project management training course in Fiji. All plots (AFT, LEL, RIV) were given a unique identifier. (Photo: Shingo Takeda)

Yadua Taba

The project plan designed at the training will form a good backbone, but the detail needs fleshing. As this project has been underway for a long time it has some good planning in place and some very experienced field workers. Further training in the use of herbicide techniques would greatly increase weed management progress on Yadua Taba. It faces new directions in that weed species are being targeted which will require different techniques to those used in the past. A major emphasis should be put on biosecurity and surveillance measures.

OVERALL WEED MANAGEMENT CAPACITY OF THE NATIONAL TRUST OF FIJI

A key observation was that NTF staff have greatly varying knowledge, skill sets and experience, but no one site has the ideal combination and resources to make a real progressive difference to weed issues. Sigatoka with a workforce of supervisor and 3-4 rangers is well placed to make conservation advances once they gain the weed management skills, experience and confidence necessary. Waisali has strengths apparent in its field rangers, but the absence of the supervisor for the training was a real barrier to learning for this team. Monuriki has a good supervisor but lacks any ranger skill sets.

A major challenge to successful weed management is the labour required. Weed management is labour-intensive in the absence of good tools and sufficient resources. Chainsaws, scrub bars and spray units are essential tools to deal with the extent of weed infestations NTF is facing in its protected areas. These are currently lacking.

It is recommended that those who attended the training course are utilised as a national team that, on specific occasions, work together on the protected areas to gain the best value in weed management from sharing their collective knowledge, skill sets and tools in a prioritized programme that concentrates many hands on a job at once.

Not only would this foster more skill learning but it would provide the resource necessary to make a big difference to weed problems at the sites by being able to deliver concerted and concentrated effort. It would also help with building stronger team relations. It is recommended NTF take as much opportunity to expose its rangers and supervisors to learning experiences in places like New Zealand, Australia, US where extensive weed management projects and techniques can be learnt.

Rangers from Sigatoka Sand Dunes National Park using field methods learnt in the PII IPPMT course. The combination of classroom and field work is a key component of PII training. (Photo: Bill Nagle)

Course evaluation

For many agencies, the first forays into invasive species management can be intimidating. Often, people and their institutions do not know what they don't know until faced with the requirements for planning of a long-term project. This makes it hard for both participants and instructors to prepare to a level that is of benefit to all parties. However, despite the lack of information available from participants and the difficulties caused by the venue, this was a successful course in terms of strengthening the capacity of staff of The National Trust of the Fiji Islands to manage invasive plant projects in some of the protected areas they administer.

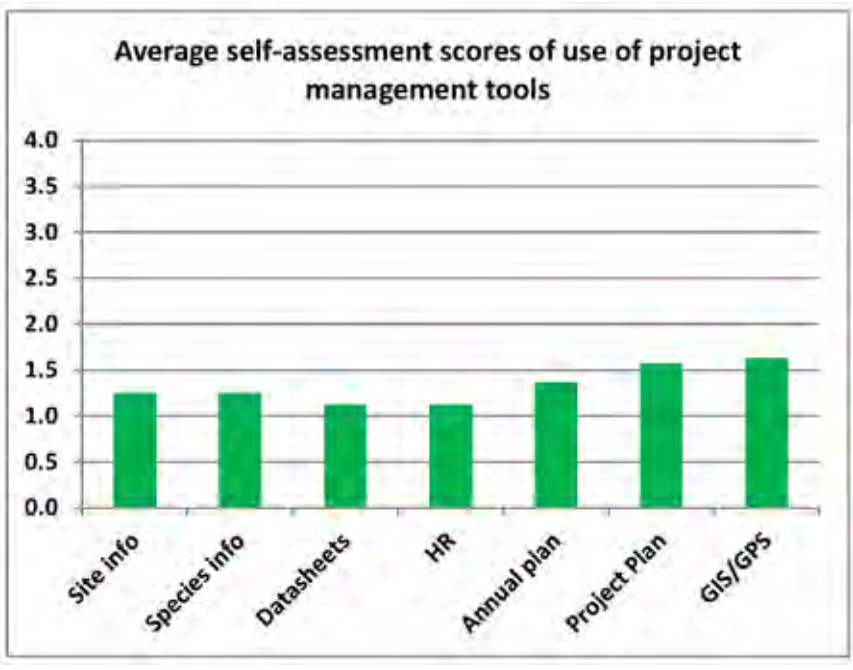
As not all pre-course questionnaires were returned, participants were asked to complete another one at the start of the training. Information from this questionnaire was very revealing and is reported below. The progress of participants was checked informally every day and the course was evaluated by questionnaire on the final day (see below). A discussion, by participants only, on the lessons learned, positive and negative aspects of the course and further training needs was also held on the last day and recommendations for future capacity development were made. A list of the points raised was made and then discussed in open forum with team members.

PRE-TRAINING QUESTIONNAIRE

This was self-assessment and each participant was asked to score some questions and to provide a written response to others. Most participants rated their knowledge, skills and confidence in invasive plant project management as very low (Figure 4, below) with only one person giving a high self-assessment (Ranges = Knowledge 1-8, Skills 1-8, Confidence 1-9).

Of concern was the level of knowledge in important areas such as plant characteristics and site information, the level of experience with basic planning tools such as work timetabling and the level of basic field skills such as use of data recording sheets and mapping (Figure 1).

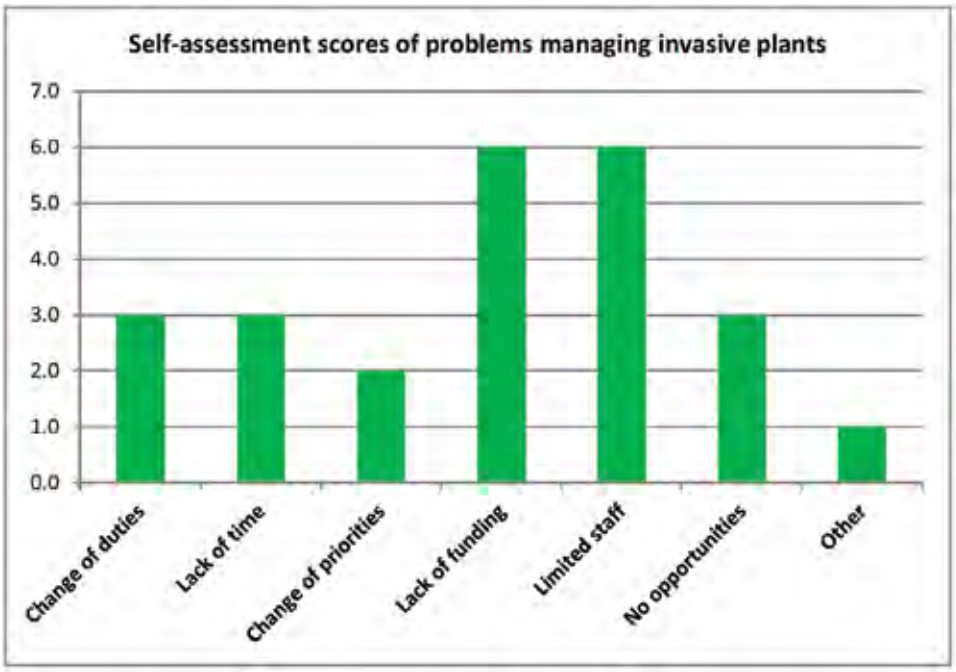
Figure 1: Participant pre-training self-assesment of use of project management tools for invasive plant management.



Even more concerning, was how little experience participants had in the planning, implementation and monitoring and evaluation of invasive plant projects (Figure 3, below). Although experience ranged from 'none' to 'a lot' across all three activities, the average for each area was just over 50%. This indicates a low level of engagement in invasive plant management projects and was unexpected. Had this been known beforehand, a different focus could have been brought to the training. Fortunately, the training course is designed to be adaptable and it was changed as much as possible to accommodate participant capabilities.

A question asking about problems with managing their invasive plant projects provided an opportunity to write in their own problems but most participants used the checklist provided. Seventy-five percent of participants identified "Lack of funding" and "Limited staff" as the major problems (Figure 2) and this result may be important, but needs more investigation.

Figure 2: The number of participants identifying issues causing problems with the management of their invasive plant projects.



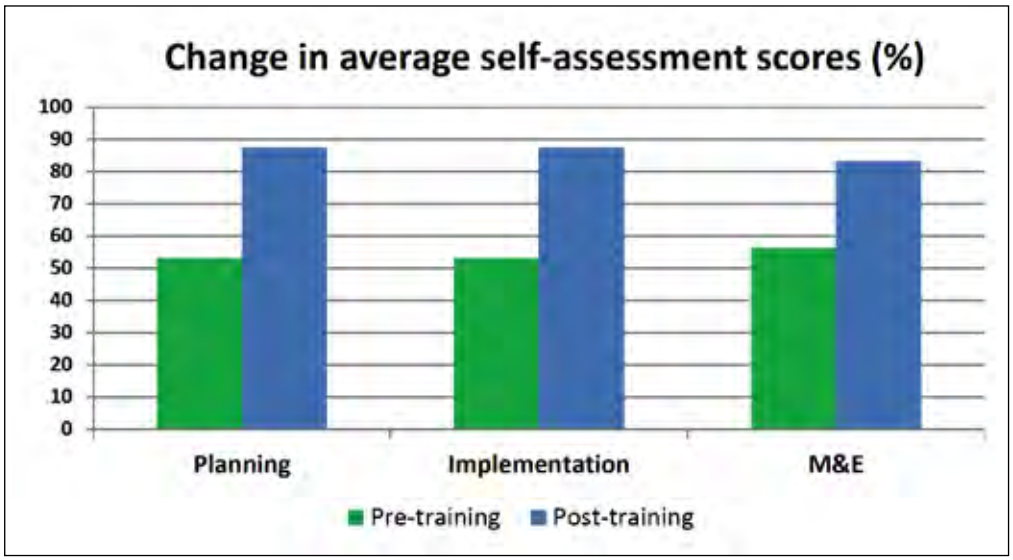
POST-TRAINING QUESTIONNAIRE

This was also self-assessment and each participant was asked to score some questions and to provide a written response to others. In general, participants scored the course highly and the evaluation results show that the course achieved its purpose. Participants gave scores of 88% to the question about whether or not the course met their expectations and 83% to whether the methods used in the course would help them in their work.

Comments offered included "*I learnt a lot of new things – planning, setting goal, chemical application. My expectation was met*", "*I am quite confident now to carry out a weed plan and monitor and evaluate the plan.*" and "*Designing a plan using a 'workbook style' is a great way to facilitate a planning workshop and get participants involved.*".

Most encouraging was the change in participants' perception of their experience in the planning, implementation and monitoring and evaluation of invasive plant projects at the end of the training. Self-assessment scores improved from just over 50% at the start of the course to more than 80% at the end (Figure 3).

Figure 3: Participant pre- and post-training self-assesment of involvement in planning, implementation and monitoring and evaluation of invasive plant projects.



Participants also identified a positive change in their knowledge and skills from the low rating (Average = Knowledge 3.6 (Range 1-8) Skills 3.9 (Range 1-8)) at the start of the course to averages of 7.3 for Knowledge (Range 5-9) and 8 for Skills (Range 7-9) at the end of the training (Figure 4). This further shows the value of the PII Invasive Plant Project Management Training Course.

It is not possible in a short course like this to address the more complex issues of invasive species management, such as decision theory and economic factors involved in deciding when to stop looking for the invasive, but the tools provided to plan, implement and evaluate invasive plant management projects are a major step forward.

Figure 4: Participant pre- and post-training self-assesment of invasive plant management knowledge and skills.

ACHIEVEMENT OF OUTCOMES

The course was designed to:

- Give weed control personnel the skills and confidence necessary to manage invasive plant projects.
- Further develop skills in the collection and management of data for project planning, implementation, monitoring, evaluation and accountability purposes.
- Provide an efficient and effective data collection and management system that is easy to use and maintain and is adaptable to similar projects across the Pacific.
- As described above, participants provided positive evaluation of the course and asked for follow-up training. Usefulness of the system for other Pacific nations was also discussed.

Jone Nuikula (L), Project Officer National Trust of the Fiji Islands, receiving his certificate from SME Tofilau Tavita Togia of the National Park of American Samoa at the PII IPPMT course. (Photo: Ivereimi Rogoira)

LESSONS LEARNED BY PII

- This is the first time PII has been able to use a Pacific practitioner as an SME in the invasive plant project management courses. The inclusion of Tofilau Tavita Togia as an SME proved very successful as this strengthened his learning from the course in American Samoa in 2010 and also provided Pacific experience to which participants could relate. A comment made was that "*His work on his own island gave participants some 'ground-truth' on the impacts of invasive plants on natural ecosystems and some of his successes in dealing with invasive plants such as Tamaligi (FAM) trees*".
- All teams appreciated the opportunity to cooperate with other areas. Having several teams at the course provides opportunity for sharing experiences with projects.
- The course content, tailored to each team's project and experience, encouraged maximum engagement from participants.
- The wide variation between teams and individuals in knowledge and skills, particularly in computing proficiency, can be partly addressed with the individualised team approach to training used in this course.
- An important strength of the team approach used in this training is that teams can work on their own project in their own language.

MAIN LESSONS LEARNED BY PARTICIPANTS

Data collection is important

Different control methods (including chemical application)

Good planning accompanied with adaptive management

Data analysis and interpretation

Know our native species and weeds

Using time and human resources wisely

Techniques for reforestation

NEXT STEPS

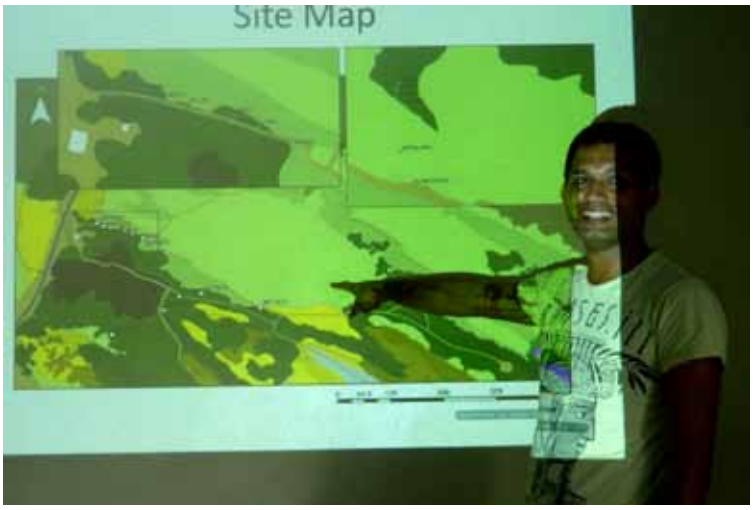
Several participants asked for follow-up action to build on the successful learning accomplished at the course. More instruction in field work was requested, in particular for management of trees such as African Tulip. This would best be done with visits to individual teams in their home territory so that targeted and applied training can be achieved.

The success of the course should be shared with other areas of the Pacific. Courses can be organised if requested.

Coordinated efforts should be made to provide training throughout the Pacific in other aspects of invasive species management which could not be covered in this brief course.

OTHER TRAINING REQUESTED BY PARTICIPANTS

Monitoring and Evaluation training, Biosecurity, Training on doing Weed Awareness programmes in Community.



Jason Tutani, Manager of Sigatoka Sand Dunes National Park, uses a GIS map from Shingo Takeda to show the position of the 80 African tulip (AFT) trees that were treated during the workshop. (Photo: Bill Nagle)

ACKNOWLEDGEMENTS

Many people contributed to the success of this course. In particular, PII would like to thank Elizabeth Erasito, the Director of The National Trust of the Fiji Islands for her persistence in the face of a very difficult year for NTF. Special thanks to Jason Tutani of NTF for the organising, re-organising and continual enthusiasm and smiles. Thanks also to:

- the NTF and community participants for the challenges and rewards they presented;
- Natasha Doherty who managed the PII end of logistics;
- the National Park of American Samoa for recognising the benefits to Tavita and allowing him to be available for the training course;
- Shingo Takeda of the University of the South Pacific for sharing his information on the rapid spread of invasive plants at Sigatoka Sand Dunes National Park;
- Chuck Chimera and Patti Clifford, Weed Risk Assessment Specialists with the Hawaii Invasive Species Council, who provided, at very short notice, WRAs for plants identified by Shingo Takeda as problems for Sigatoka Sand Dunes National Park;

The instruction end of the training course was funded by PII and we are grateful to the New Zealand Government's Aid Programme for continued support for invasive species management in the Pacific.

APPENDIX 1

INVASIVE PLANTS DISCUSSED AT THIS AND PREVIOUS PII TRAINING COURSES

TLA*	Country Code**	Common name	Family	Genus	Species	PIER WRA
COL	FM	Chain-of-love	Polygonaceae	*Antigonon*	*leptopus*	19
RAT	PW	Rattan palm	Arecaceae	*Calamus*	spp.	?
PRT	AS	Panama rubber tree	Moraceae	*Castilla*	*elastica*	7
CHO	MH	Chromolaena	Asteraceae	*Chromolaena*	*odorata*	34
CLQ	FM	Bronze-leaf	Lamiaceae	*Clerodendrum*	*quadriloculare*	11
HOR	FM	Honolulu rose	Lamiaceae	*Clerodendrum*	*chinense*	18
CLH	FM	Koster's curse	Melastomataceae	*Clidemia*	*hirta*	27
IVG	FM	Ivy gourd	Cucurbitaceae	*Coccinia*	*grandis*	21
GDD	AS	Golden dodder	Convolvulaceae	*Cuscuta*	*campestris*	22
FAM	AS	Kerosene tree	Fabaceae	*Falcataria Albizzia* (old)	*moluccana*	8
IMP	PW	Imperata	Poaceae	*Imperata*	*cylindrica*	22
LAN	FJ	Lantana	Verbenaceae	*Lantana*	*camara*	21
LEL	FM	Leucaena	Fabaceae	*Leucaena*	*leucocephala*	11
MEQ	PW	Melaleuca	Myrtaceae	*Melaleuca*	*quinquenervia*	15
MEA	PW	Chinaberry	Meliaceae	*Melia*	*azedarach*	14

TLA*	Country Code**	Common name	Family	Genus	Species	PIER WRA
MEP	PW	Merremia	Convolvulaceae	*Merremia*	*peltata*	18
MIK	PW	Mile-a-minute	Asteraceae	*Mikania*	*micrantha*	25
PEP	FJ	Mission grass	Poaceae	*Pennisetum*	*polystachion*	11
FSK	FM	False sakau	Piperaceae	*Piper*	*auritum*	19
PPA	FJ	False kava	Piperaceae	*Piper*	*aduncum*	18
PRX	PW	Praxelis	Asteraceae	*Praxelis*	*clematidea*	25
GUA	FJ	Guava	Myrtaceae	*Psidium*	*guajava*	21
RIV	FJ	Coral berry	Phytolaccaceae	*Rivina*	*humilis*	11
SMS	FJ	Monkey pod	Fabaceae	*Samanea Albizzia* (old)	*saman*	4
OCT	PW	Octopus tree	Araliaceae	*Schefflera*	*actinophylla*	13
AFT	FM	African tulip	Bignoniaceae	*Spathodea*	*campanulata*	14
TRD	FJ	Trailing Daisy	Asteraceae	*Sphagneticola* *Wedelia* (old)	*trilobata*	13
ZIN	FJ	Shampoo Ginger	Zingiberaceae	*Zingiber*	*zerumbet*	-1

* three-letter-abbreviation (for data recording purposes only – not the standard taxonomic abbreviation/ symbol; e.g. http://plants.usda.gov/index.html)

** AS = American Samoa, FJ = Republic of Fiji, FM = Federated States of Micronesia, MH = Republic of the Marshall Islands, PW = Republic of Palau

APPENDIX 2

COURSE DESIGN

How to Eradicate Rodents and Cats on Islands Training Course

11 – 15 APRIL 2011
Nadi, Fiji

SUMMARY REPORT

REPORT PREPARED BY:

Natasha Doherty, Pacific Invasives Initiative

ACKNOWLEDGEMENTS:

PII would like to thank everyone who has contributed to this training course, including New Zealand Department of Conservation, Stella Associates, Derek Brown and BirdLife Fiji Programme (Elenoa Seniloli)

Funders: The David & Lucile Packard Foundation and The New Zealand Aid Programme

Course Summary

The first "How to Eradicate Rodents and Cats from Islands Training Course" provided participants with the knowledge and skills to carry out rodent and cat eradication projects. The training is based on the Resource Kit, which is a practical guide to assist project managers in developing and implementing rodent and cat eradication projects on islands. The Kit provides best practice processes, methods and lessons learned as, well as supporting tools (Guidelines, templates, references etc).

Participants of the training gave scores of 100% to questions about knowing the PII Project Process for eradication projects and overall opinion of the training. Comments offered included: "Congratulations to PII for creating this great tool! I especially appreciated the worked examples all along the project process"; "very useful in the sense of knowing and understanding steps to be taken when I will come up with project work" and "Great tool. Great Job!"

TRAINING TEAM

- Facilitator – Dave Wallace, Stella Associates
- Subject Matter Expert – Derek Brown, New Zealand Eradication Specialist
- Subject Matter Expert – Elenoa Seniloli, Birdlife Fiji Programme
- Subject Matter Expert – Souad Boudjelas, PII
- Resource Kit Coordinator – Graham Allen, PII
- PII Representative – Natasha Doherty, PII

PARTICIPATING AGENCIES

- Birdlife Fiji Programme -Fiji
- Ministry of Environment, Land and Agricultural Development -Kiribati
- National Trust of Fiji Islands -Fiji
- Pacific Invasives Learning Network -Samoa
- Province Sud – New Caledonia
- Societe Caledonienne d'Ornithologie – New Caledonia
- Societe d'Ornithologie de Polynesie Manu – French Polynesia

Over the past decades, the eradication of rodents and cats has become an established management approach in the fight against the impacts of invasive species on island biodiversity. The PII Resource Kit provides project managers with a systematic approach to planning and implementing rodent and cat eradication projects on islands in the Pacific.

The need for the Resource Kit came from PII's experience working on invasive species projects with Pacific agencies. Because invasive species management is a relatively new tool for island restoration in the Pacific, a common constraint for agencies was access to an authoritative and consistent process and a source of information to effectively address the complexity of invasive species management.

To address this need PII, in collaboration with world leading eradication experts, developed a stepwise process and supporting tools to provide project managers with access to current eradication best practice. Use of the Resource Kit will give Pacific agencies the ability to embark on their invasive species management projects with greater confidence of achieving their desired island restoration goals.

The training focuses on training project managers on how to plan and implement rodent and cat eradication projects using the PII Resource Kit. PII invited eight project managers from seven different agencies from around the Pacific region to participate in the first "How to eradicate rodents and cats from islands" Training Course in Nadi, Fiji.

TRAINING COURSE PURPOSE AND OUTCOMES

PURPOSE 1: TO TRAIN PARTICIPANTS ON HOW TO PLAN AND IMPLEMENT RODENT AND CAT ERADICATION PROJECTS USING THE PII RESOURCE KIT

Outcomes

- Know the principles that underpin the Resource Kit.
- Know the PII Project Process for an eradication project.
- Know the reasons and value for each stage and step in the process.
- Be able to use the Resource Kit to locate information and resources to assist in completing each step in the project process.
- Know where to access further learning resources and support .
- Have a plan of "where to from here" for a project.

PURPOSE 2: TO TEST THE TRAINING COURSE WITH PARTICIPANTS WHO ARE REPRESENTATIVE OF THE TARGET GROUP.

Outcomes

- Refined Resource Kit and training course

TRAINING CONTENT

The training used an interactive learning style; for each stage presentations were given and then participants were encouraged to ask questions. This was followed by group discussions and/or workbook activities (Appendix 3). At the completion of each stage, participants were given an evaluation sheet to complete.

DAY 1

Provided information on: the purpose and outcomes, importance of islands, threats from invasive species, management options for invasive species, resource kit principles, overview of the PII Project Process, introduction to the worked example and participants presentations on their projects.

DAY 2

Provided information on:

- Stage 1 – Project Selection – assessing each project idea and selection of a project with the highest priority.
- Stage 2 – Feasibility Study – scoping the project, deciding whether the target species can be successfully eradicated and identifying any key issues that would need to be addressed before the eradication operation is undertaken .
- Stage 3 – Project Design – detailing how the project will be managed and governed.

DAY 3

Provided information on:

- Stage 3 – Project Design – continued
- Field trip to Sigatoka Sand Dunes – to carry out a Feasibility Study

DAY 4

Provided information on:

- Stage 4 – Operational Planning, covering the following three plans:
  - Operational Plan: which covers eradication design and logistical planning
  - Biosecurity Plan: which plans the prevention, surveillance and incursion response activities
  - Monitoring and Evaluation plan to measure the success of the project
- Stage 5 – Implementation, there are 3 phases:
  - Pre-Operational Phase: final preparations are undertaken
  - Operational Phase: which is the actual removal of the target species
  - Post-Operational Phase: the completion of all the final activities

DAY 5

- Stage 5 – Continued
- Stage 6 – Sustaining the Project: the on-going work required after the eradication operation has been completed. Biosecurity (prevention, surveillance and response readiness) and monitoring outcomes are the main part of Stage 6.

EVALUATION SUMMARY

This training was different from future "How to eradicate rodent and cats from islands" training, as it was a pilot. The purpose of the pilot was to test the training course with participants who are representative of the target group.

This required the inclusion of detailed review sessions. These sessions were both in the form of written and group discussions and were held after significant blocks of learning. Participants completed seven reviews that covered the following:

- Achievement of purpose(s) for the learning block
- The Resource Kit
- The learning approach (facilitated sessions, SME, workbook, exercises, progress checks etc)
- Timing
- Ideas for improvements

Participants also completed a final evaluation at the end of the week to assess the overall training.

ACHIEVEMENT OF PURPOSE(S) FOR THE LEARNING BLOCK

Question: How well did the learning block achieve its intended purpose (0=not achieved. 5=Achieved.10=well achieved)

Six learning blocks: Introduction, Stage 1, Stage 2, Stage 3, Field trip and Stage 5 & 6 all received 90% of participants' satisfaction with achieving the purpose. Stage 4 – Operational Planning received 100% satisfaction

THE RESOURCE KIT

Question: For this learning block, how useful was the PII Resource Kit? (Content, ease of use, easy to understand, process and its steps) (0=not useful 5=ok. 10=very useful)

The following learning blocks received 100% satisfaction: introduction, stage 1, stage 4 and stage 5 and 6.

Comments: "Because even though it [the Resource Kit] can't provide all the answers to all [the] questions we have but [it is] able to provide the answers to our major questions plus very easy to use.", and "easy to use and to follow the process and its steps"

Learning blocks: stage 2, stage 3 and field visit received 90% satisfaction.

Comments: "Easy to use with help of various guidelines" and "easy to use and understand process were well detailed."

THE LEARNING APPROACH

Question: For this learning block, how appropriate was the method of learning used? (Learning methods range from facilitated sessions, presentations using PowerPoint, group discussions, recap quizzes, exercises, checkouts, progress checks, support from SME)

Learning block – stage 4 received 100% satisfaction from participants.

The other six learning blocks received 90% satisfaction.

Comments: "I really appreciate the diversity of support used and the interactions between the participants and the `trainers' this makes the training more dynamic and pleasant to understand.", "really appreciated the relaxed atmosphere", "great method -mixed media good!!!" and "well facilitated and group discussions very helpful"

TIMING

Question: How appropriate was the time allowed for this learning block? (0=not appropriate. 5=ok. 10=very appropriate)

Learning blocks: Stage 1, stage 2, stage 3 and field visit received 80% satisfaction from participants.

Comments included: "if possible more time for questions", "OK but would be good to give more time for discussions", "could need a bit more time" and "have a site close to the training venue so that maximum time can be used to cover the Feasibility study thoroughly" .

Learning blocks: Introduction, Stage 4 and Stage 5 & 6 received 90% satisfaction from participants.

Comments: "I really like the times allocated. Not too long. Not too short", "Good use of timing" and "Need to have more time for this stage since it is quite detailed" (stage 4).

IMPROVEMENTS

Question: What improvements would you suggest?

Introduction Comments:

- "Overall presentation of the sessions – ranging from the first to the last session were well achieved, very informative and well structured. Can't wait for the second day."

Stage 1 Comments:

- "Could allocate more time for the discussion and exercise sessions" and
- "not only ask participants on their experience, also have somebody to note the main issues down for everybody to work on together"

Stage 2 Comments:

- "Comprehensive but good stuff. Easy to follow".

Stage 3 Comments:

- "More progress checks! The afternoon sessions get a bit hard mentally -so a few more active group sessions would be good" and
- "Define more precisely, why/how this stage is useful and how it completes the feasibility study and the operational plan"

Field Visit Comments:

- "Field incursion could involve project selection (prioritising) and feasibility study. Just to help participants with the transition",
- "a trip to a real island",
- "more time in the field with a group debriefing, linked to each group giving its synthesis, not answering to pre-defined questions" and
- "where possible – go to a real island – otherwise this was a good alternative".

Stage 4 Comments:

- "The stage content is OK, just need more time to go through the steps thoroughly", and
- "video of an eradication(show one) ... doing one!!"

Stage 5 & 6 Comments:

- "Have separate evaluation form for each stage (5 and 6) so that it makes it easier to analyse each stage. Spend more time with stage 6 – I guess it's quite important to cover it more thoroughly",
- "Management plan writing template for next 5 years in terms of biosecurity" and "link with ground operation could provide a perfect training with "project management" and "implementation" part".

FINAL EVALUATION

Summary: NB Range: 0=not at all to 5=well

1	Know the principles that underpin the Resource Kit	80% of participants know the principles that underpin the Resource Kit
2	Know the PII Project Process for an eradication project	100% of participants know the PII Project Process
3	Know the reasons and value for each stage and step in the Process	80% of participants know the reasons and value for each stage and step in the Process
4	Use the Resource Kit to locate information and resources	100% of participants will use the Resource Kit to location information
5	Know where you can access further learning resources and support	100% of participants know where they can access further learning resource and supports
6	Have a plan of where to from here for your project	80% of participants had a plan of "where to from here" for their projects. Comments/improvements "Congratulations to PII for creating this great tool! I especially appreciated the worked examples all alongthe project process" "It could be more clear in the resource kit that it is mainly a tool for project planning and management but that more knowledge is needed to implement eradication in the field"
7	Resource Kit: How useful will the Resource Kit be for you? (consider usefulness, content, layout, level of information, ease of use)	80% of participants said the Resource Kit will be very useful for them. "Easy to use for reference and to check if plans/reports are in line with the Resource Kit" "Great tool. Great Job! More link with field methods and scientific references could be great." "the toolkit provides an excellent checklist to project managers/workers on what to do, how and why."
8	Training Methods: Overall, how effective were the methods of learning? (facilitated sessions, presentations with PowerPoint, SME support, practice exercises, progress checks, Feasibility Study Site Visit, ad breaks, use of Resource Kit and workbook) *(0=not effective. 5=effective)*	100% of participants found the training methods very useful. "Very good, especially with participation and discussion which enabled me to contribute and participate. Good to keep doing this as some people can't speak up or participate unless someone (is) asking them to do so." "More time if it was available but it was great" "Good combination of media used."
9	Training Methods: What suggestions do you have for Facilitators and Subject Matter Experts to help them improve in their role?	"Be more like Dave when doing their presentations and discussions. To avoid being sleepy during the training" "Overall good facilitation! Good humor. Body language always important".

10	What other comments do you have that would improve the training? (consider venue, accommodation, food, travel)	"All good. Field visit is to be conducted to a real island that has biosecurity risks" "Try to have more scientific references both in the kitand in the training for monitoring and IAS (invasive alien species) biology and invasion biology topics" "Some participants were too quiet (voice wise) it would have been good to have a microphone so can hear. If not the facilitator should/could have summarized the quiet persons contribution".
11	Overall Opinion What is your overall opinion of the training course? (0=not effective. 5=effective)	100% of participants found the training useful. "Enjoyed it! – great to hear/learn from others. Wouldhave liked to hear more of their work in response to the worked examples".
12	What should we do more if in the training	"more group discussions" "Site visit could be a little bit longer" "longer time frame, more group participation".
13	What should we do less of in the training	"At the beginning, less navigation learning…"

The training completed its purpose. It succeeded (80-100%) in teaching participants the principles of the PII Project Process; providing an appreciation of the value of a systematic approach to rodent and cat eradications; and providing participants the knowledge on how to access and use resources to achieve the goals of their projects.

The pilot completed its purpose. The Resource Kit tools (Guidelines, templates, references etc) and training course are in the process of been refined with comments and suggestions made by participants.

PII Resource Kit
for Rodent and Cat Eradication:
www.pacificinvasivesinitiative.org/rk/

ANNEXES

Island Biosecurity Training Course

ABOUT THE TRAINING

Pacific Invasives Initiative (PII) provides an island biosecurity training course that introduces biosecurity and its importance for island restoration projects. The course covers basic biosecurity concepts and practical tools necessary for you and/or your staff to apply to an island restoration project. The training can be tailored to suit a current project you are working on.

Open discussion will be encouraged for each of the three steps of biosecurity (prevention, surveillance, incursion response). The training uses a participatory approach and all participants are expected to interact and provide their own opinions, guidance, knowledge and experience. .

Target audience:

Staff, or members, of government organisations and NGO's and community members.

Expected group size:

5 – 15 participants

Duration of training:

3 – 5 days

PURPOSE

1. To develop an understanding of the reason for biosecurity and the need to maintain effective biosecurity programmes to minimise the risk of reinvasion or new invasions.
2. To develop the knowledge and skills necessary to undertake prevention measures, basic surveillance and incursion responses.
3. To collect local knowledge that may contribute to preparation of a biosecurity plan (e.g. invasion pathways, visitors' checklist) for islands.

LEARNING OUTCOMES

At the end of the training, participants will;

1. Understand the importance of biosecurity and able to apply practical biosecurity measures for targeted islands.
2. Be able to undertake surveillance and identify and collect information for any incursion response.
3. Be able to contribute baseline information to an island biosecurity plan, if required.

FIELDTRIP AND ACTIVITIES

Activities will be incorporated into the training to provide practical experience for participants. These include short exercises and scenarios either in the room or outdoors on a field visit.

If possible, a one-day fieldtrip to a target island is suggested so that all participants can observe and discuss the biosecurity measures required at departure and landing sites.

Pacific INVASIVES INITIATIVE

How to Eradicate Rodents and Cats on Islands Training Course

ABOUT THE TRAINING

This training course provides an accelerated learning path for best practice eradication methods. It ensures that project managers get maximum benefits from the PII Resource Kit for Rodent and Cat Eradication.

It is a 5-day interactive training course and numbers are limited to 10 participants to ensure participation. The course is a mix of facilitated learning sessions, hands-on practical experience and a field-trip. The training team includes experts in rodent and cat eradications so that participants can benefit from their first-hand experience of undertaking eradications.

PURPOSE

To train participants how to plan and implement rodent and cat eradication projects using the PII Resource Kit for Rodent and Cat Eradication.

ABOUT THE PII RESOURCE KIT

The PII Resource Kit for Rodent and Cat Eradication is a step-by-step guide to eradications using the six-stage PII Project Process (Project Selection, Feasibility Study, Project Design, Operational planning, Implementation, Sustaining the Project). The PII Resource Kit is a web-based, practical guide to assist Pacific Island project managers to plan and implement eradication projects. It has been developed by PII in collaboration with world experts in invasive species management and is specifically aimed at Pacific agencies and the challenges of undertaking rodent and cat eradication projects on Pacific Islands.

Each stage has supporting tools such as guidelines, templates, worked examples, references and useful links.

LEARNING OUTCOMES

At the end of the training course participants will:

- ✓ Know the principles that underpin the PII Resource Kit
- ✓ Know the PII Project Process for an eradication
- ✓ Know the reasons and value for each stage and steps in the process
- ✓ Be able to use the PII Resource Kit to locate information and resources to assist you in completing each step in the project process
- ✓ Know where you can access further learning resources and support
- ✓ Have a plan of where to from here for their projects.

TARGET AUDIENCE

The training is for project managers/officers who are actively engaged in on-the-ground invasive species management. Each participant will be asked to bring information about their project to the training and participants will directly apply the knowledge and skills learned to their project during the course.

Invasive Plant Project Management Training Course

ABOUT THE TRAINING

Invasive plant management is a complex process. This training course is based on best practice and progresses through the six-stage PII Project Process (Project Selection, Feasibility Study, Project Design, Operational planning, Implementation, Sustaining the Project) to: prioritise the most serious invasive plants for action; develop an invasive plant management strategy; design and implement invasive plant management projects.

The course is intensive training aimed at maximising the resources available to often small and under-funded agencies in Pacific countries and has been developed in response to requests from Pacific biodiversity conservation practitioners. It uses new approaches and best practice to strengthen the capacity of those practitioners actively engaged in invasive plant management.

The training course is participatory, is based on active learning principles and uses a team approach so that the project team understand both operational and management connections. The sharing of knowledge and skills between programme and project managers and field workers is more likely to lead to successful projects. This gives confidence and motivation to participants in relation to their invasive plant projects.

TARGET AUDIENCE

- Project Managers
- Project Officers
- Senior crew members (e.g. Foremen)

DURATION OF TRAINING

8 to 10 days for full course (depending on number of teams).

Note: the course can be adapted to meet the specific needs of an agency.

LEARNING OUTCOMES

At the end of the training, participating teams will:

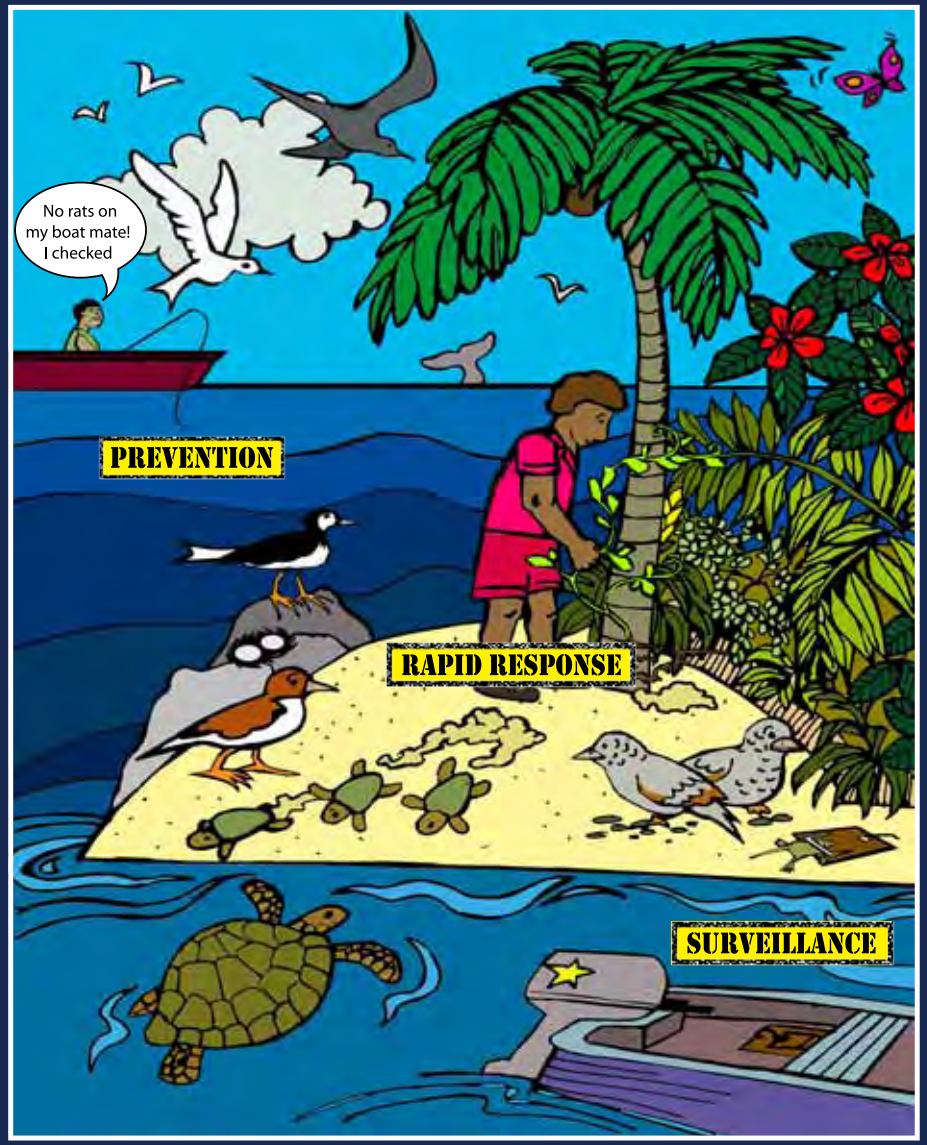
- Understand the best practice principles that underpin the PII Project Process
- Know the reasons/value for each stage and step in the PII Project Process
- Know how priority projects are identified and prioritised
- Be able to prepare plans for their project
- Know the value of collecting data and how to collect, store and retrieve it
- Know how to use data for effective decision making
- Be aware of tools and methods that can assist with projects
- Know where they can access further learning resources and support
- Have a plan of "where to from here" for their project

PII RESOURCE KIT FOR INVASIVE PLANT MANAGEMENT

As well as the training, during which participants will prioritise invasive plants, select projects and complete planning documents (from Feasibility Study to Reporting including Monitoring and Evaluation) for their own project, the PII Resource Kit for Invasive Plant Management will be provided on CD for use after the training.

BIOSECURITY

Protect our heritage for future generations



Pacific INVASIVES INITIATIVE

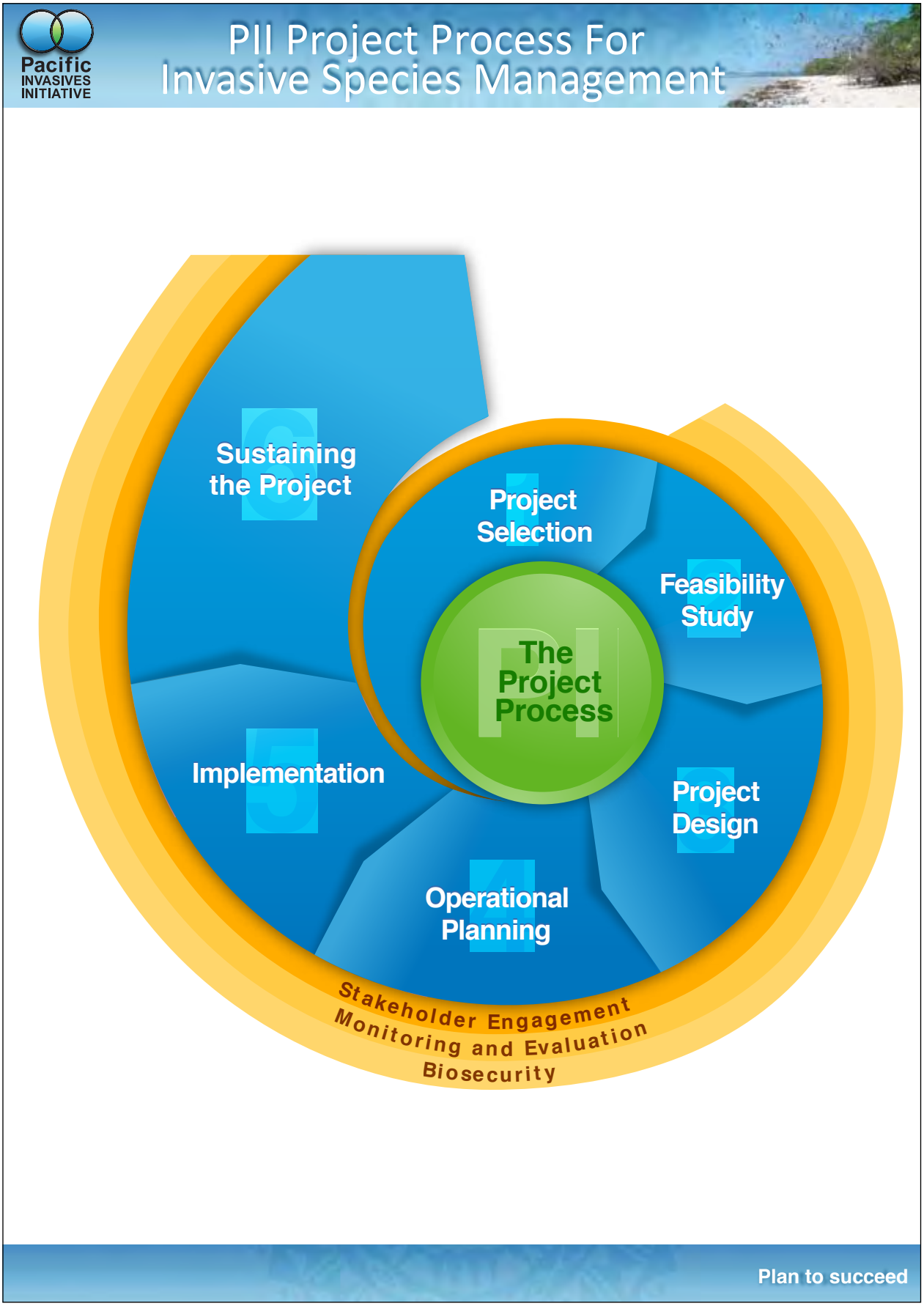
NEW ZEALAND Aid Programme

CRITICAL ECOSYSTEM PARTNERSHIP FUND

the David & Lucile Packard FOUNDATION

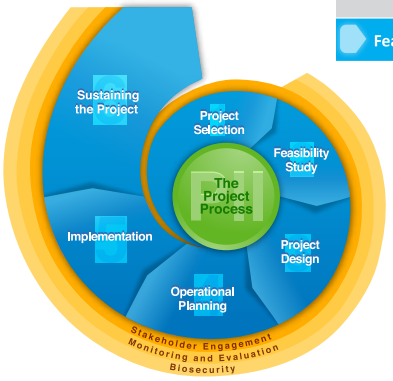
http://pacificinvasivesinitiative.org/pii/index.html

BIOSECURITY POSTER


Pacific
INVASIVES
INITIATIVE
PII Project Process For
Invasive Species Management
Sustaining the Project
Project Selection
Feasibility Study
The Project Process
Implementation
Project Design
Operational Planning
Stakeholder Engagement
Monitoring and Evaluation
Biosecurity
Plan to succeed

The Project Process Summary

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Project Selection	**Feasibility Study**	**Project Design**	**Operational Planning**	**Implementation**	**Sustaining the Project**
1.1 Define the selection criteria and weightings	2.1 Consult stakeholders	3.1 Consult stakeholders	4.1 Consult stakeholders	5.1 Consult stakeholders	6.1 Continue stakeholder engagement
1.2 Score the project Ideas	2.2 Describe the site	3.2 Describe the site and target species	4.2 Secure consents and permits	5.2 Implement biosecurity prevention	6.2 Continue biosecurity prevention
1.3 Notify the stakeholders	2.3 Describe the Target Species	3.3 Define the goal, objectives and outcomes	4.3 Resolve any identified issues	5.3 Train the team	6.3 Prepare for biosecurity incursion response
Project Selection Spreadsheet	2.4 Define the goal, objectives and outcomes	3.4 Describe the project approach	4.4 Describe the problem	5.4 Source the services	6.4 Commence biosecurity surveillance
	2.5 Start the 'Can It Be Done?' section	3.5 Plan stakeholder engagement	4.5 Plan the details of the eradication operation	5.5 Source the Equipment	6.5 Respond to possible incursions
	2.6 Complete the site visit biosecurity assessment	3.6 Define the project governance	4.6 Plan how to manage the non-target species risks	5.6 Complete the remaining pre-operation tasks	6.6 Conduct post-operation monitoring
	2.7 Visit the site and update the 'Can It Be Done?' section	3.7 Define project outcome monitoring	4.7 Plan how to manage the environmental effects	5.7 Conduct a readiness check	6.7 Complete a project report
	2.8 Assess the feasibility of the project	3.8 Plan the project timeline	4.8 Plan the monitoring	5.8 Do pre-operational monitoring	6.8 Notify the stakeholders
	2.9 Complete the feasibility study report	3.9 Estimate project costs	4.9 Plan the biosecurity	5.9 Hold a pre-operation briefing	**Project Report**
	2.10 Notify the stakeholders	3.10 Plan the project risk management	4.10 Plan the safety of people	5.10 Conduct the eradication operation	
	Feasibility Study Report	3.11 Complete the project plan	4.11 Plan the logistics	5.11 Conduct post-operation tasks	
		3.12 Notify the stakeholders	4.12 Prepare an equipment list	5.12 Hold a post-operation debriefing	
		Project Plan	4.13 Plan the operation task schedule	5.13 Notify the stakeholders	
			4.14 Decide the eradication operation team	**Operational Review**	
			4.15 Complete the operational plan		
			4.16 Notify the Stakeholders		
			Operational Plan		
			Biosecurity Plan		
			Monitoring Plan		



Plan to succeed

PII PROJECT PROCESS

Based on more than ten years of working in invasive species management in the Pacific with some of the world's top invasive species experts, PII has developed a six-stage process (Project Selection, Feasibility Study, Project Design, Operational planning, Implementation, Sustaining the Project) – a best practice approach to managing an invasive species project.

This process has been comprehensively documented and adapted for rodent and cat eradication and for invasive plant management:

- Resource Kit for Rodent and Cat Eradication **http://www.pacificinvasivesinitiative.org/rk/**
- Resource Kit for Invasive Plant Management (Web interface in preparation)

CONTACTS

Please do not hesitate to contact us if you have any questions or want to discuss your invasive species management needs:

pii@auckland.ac.nz

For more information, check our website:
http://www.pacificinvasivesinitiative.org/pii/index.html

or find us on Facebook

Pacific INVASIVES INITIATIVE

MAKING A DIFFERENCE

Protecting island communities and biodiversity ...
Building invasive species management capacity

Pacific INVASIVES INITIATIVE

We are a leading provider of technical support and capacity development for invasive species management in the Pacific Island region. Whether you are a small community group, a government agency or an NGO, PII can provide the support you require to make your invasive species project a success.

OUR SERVICES

TECHNICAL SUPPORT

Do you need help with an invasive species problem?

We can:

- Help you complete your project by adapting the PII Project Process to your needs.
- Assist you at any stage of your project, from preparation of proposals and feasibility studies through to detailed planning, monitoring, evaluating and reporting.
- Review your project documents or your projects.
- Mentor you to strengthen your capacity using face-to-face meetings at your place of work or ours, skype, telephone or email.
- Help widen your networks. We can link you with any specialist that you may require. We have an extensive network of partner organisations in New Zealand and around the world who specialise in invasive species management.

Training in invasive plant management in Fiji

BEST PRACTICE

We can:

- Provide best practice resources for invasive species management.
- Provide up-to-date information on invasive species and their management.

FORMAL AND ON-THE-JOB TRAINING

Do you want to train your team?

- We offer three formal training courses (see below). These courses are available on request and can be held either in your country or in New Zealand. Each course can be adapted to your needs.
- We also offer tailor-made on-the-job training/secondments to work with, and learn from, relevant organizations and specialists.

THE TRAINING COURSES

ERADICATING RODENTS AND CATS ON ISLANDS

This course trains project managers how to plan and implement rodent and cat eradication projects using the PII Resource Kit for Rodent and Cat Eradication.

It is a 5-day interactive training course. Numbers are limited to 10 to ensure a high level of participation. The course is a mix of facilitated learning sessions, hands-on practical experience and a field-trip. The training team includes experts in rodent and cat eradications so participants can benefit from their first-hand experience.

INVASIVE PLANT MANAGEMENT

This training course, designed for Programme and Project managers, is based on best practice and progresses through the PII Project Process to: prioritise the most serious invasive plants for action, develop an invasive plant management strategy, and design and implement invasive plant management projects.

The 10-day participation-based course encourages a team approach. Sharing knowledge and skills between programme and project managers and field workers leads to better planned and implemented projects. Participant numbers are limited to 12.

Training in island biosecurity in Kiribati

ISLAND BIOSECURITY

The best way to avoid invasive species impacts and help keep islands in their natural state is to prevent invasions happening in the first place.

This course is about biosecurity and its importance for island restoration projects. The course covers the basic concepts of prevention, surveillance, response and introduces practical tools that you can apply to an island restoration project. The training can be customised to suit your needs.

CEPF Large Grant Final Project Completion Report

Long Term Capacity for Invasive Species Management

Organization Legal Name

Auckland UniServices Limited for the Pacific Invasives initiative (PII)

Project Title

Developing Long-term Capacity for Invasive Species Management in the Polynesia-Micronesia Hotspot

Date of Report

8 May 2012

Report Author and Contact Information

Souad Boudjelas, Pacifc Invasives Initiative

s.boudjelas@auckland.ac.nz

CEPF Region

Polynesia-Micronesia Hotspot

Strategic Direction 1

Strategic Direction 1: Prevent, control and eradicate invasive species in key biodiversity areas

Grant Amount

USD $131,000

Project Dates

June 1, 2009 to June 30, 2011

Implementation Partners for this Project

Please explain the level of involvement for each partner

- New Zealand Department of Conservation (DOC): Provision of skilled invasive species specialists to assist with the design and implementation of the project.
- Secretariat of the Pacific Regional Environment Programme (SPREP): Alignment of work with the Guidelines for Invasive Species Management in the Pacific.
- Pacific Invasives Learning Network (PILN): Assistance with contacts for country invasive species teams and dissemination of information.
- Manaaki Whenua Landcare Research Ltd.: Provision of technical advice especially on any research needed for CEPF grantee agencies to implement their projects.
- Invasive Species Specialist Group (ISSG): Provision of information on invasive species in the Pacific.

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile

The importance of invasive species management in the conservation of Pacific biodiversity is being acknowledged and acted upon by more and more agencies as capability and confidence grow. Of the three Strategic Directions funded by CEPF investment, the majority of applications approved (45%) were in Strategic Direction 1: Prevent, control and eradicate invasive species in key biodiversity areas.

PII contributed to the growth of confidence and capability by supporting CEPF grantees with authoritative technical assistance, provision of best practice knowledge and skills and training in the development and implementation of their projects.

Please refer to PART 1 of this publication for further detail of this project's work.

Please summarize the overall results/impact of your project against the expected results detailed in the approved proposal

- **Planned Long-term Impacts – 3+ years (as stated in the approved proposal):**

To aid the CEPF in maximizing the effectiveness of its investment in Strategic Direction 1 for the Polynesian-Micronesian Biodiversity Hotspot.

- **Actual Progress Toward Long-term Impacts at Completion:**

As the technical partner to the CEPF on Strategic Direction 1, PII contributed to the effectiveness of the CEPF investment by strengthening the invasive species management capacity and increasing the confidence of CEPF grantees. PII worked with 17 grantees from 11 countries and territories on a total of 26 projects. These grantees gained knowledge and skills for immediate use on their projects and that provide the foundation for future capacity development within these agencies.

In addition, as a member of the Technical Advisory Group, PII contributed to decision-making for the CEPF investment by reviewing proposals, assisting with project selection and providing technical advice to the Regional Implementation Team.

- **Planned Short-term Impacts – 1 to 3 years (as stated in the approved proposal):**

To ensure CEPF grantees have the capacity necessary to successfully complete their CEPF-funded invasive species management projects.

- **Actual Progress Toward Short-term Impacts at Completion:**

PII's contribution to the development of invasive species management capacity and confidence in CEPF grantees has helped increase conservation action in the Pacific. As well as providing assistance to 85% of the projects in Strategic Direction 1, PII also helped with seven projects from the other two Strategic Directions that had invasive species components.

This assistance contributed to the effectiveness of the CEPF investment in Strategic Direction 1 by; assessing grantee needs, providing best practice advice, reviewing and guiding project documents, developing and delivering training and skill sharing opportunities, sourcing and coordinating subject matter experts, sourcing equipment and mentoring staff. PII also assisted at the decision-making level as a member of the Technical Advisory Group. .

Please provide the following information where relevant

- *Hectares Protected*: N/A
- *Species Conserved*: N/A
- *Corridors Created*: N/A

Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives

PII had long-term relationships with many of the grantees assisted and the time previously invested in developing trusting relationships and networks showed its value as those with longer experience were able to make better use of PII services. These grantees were confident in approaching PII and seeking support. They were also better able to use the technical assistance provided as they already had a foundation level of knowledge and skills which allowed them to continue with long-term projects or start new ones.

This project also successfully introduced new grantees to invasive species management. However, working with agencies for the first time was challenging. Those new to invasive species management are often overwhelmed by its complexity and the commitment and effort required to be successful. Establishing relationships with grantees and helping them to unravel this complexity took significant time and dedication.

Invasive species management is still a new discipline for many conservation practitioners and this is reflected in the level of knowledge, skills and standard procedures of grantee agencies. Grantees need long-term support and encouragement to strengthen confidence and competence and to ensure that best practice becomes a routine procedure in their agency.

Were there any unexpected impacts (positive or negative)?

No.

Project Components

Please report on results by project component. Reporting should reference specific products/ deliverables from the approved project design and other relevant information.

COMPONENT 1 PLANNED

Support for CEPF grantee organisations to develop proposals, assess, design and implement their invasive species management projects is provided as requested.

COMPONENT 1 ACTUAL

PII responded to all requests for assistance. These came from a wide range of grantee agencies (NGOs, private sector, CROP, Quasi-governmental). The variety of projects required many different types of support varying from sourcing and supplying technical information to coordinating and leading a feasibility study and included developing and delivering training courses. Through this work, PII continued to strengthen existing relationships with grantees and develop relationships with new grantees working on invasive species management in the Pacific.

Technical services:

The most common requests were for the planning and implementation of rodent and invasive plant projects. Other target species included an invertebrate, a reptile, and feral goats and cats. Assistance to grantees ranged from; helping with proposals, coordinating and leading a feasibility study team for goat eradication, helping to design projects, operational planning and implementation. Some of our responses were straightforward advice about species, but some involved complex advice in relation to toxicants, baits, traps, firearms, permits and biosecurity. We also sourced and briefed subject matter experts and provided on-going mentoring of key staff in grantee agencies.

Knowledge and skills strengthened:

PII encouraged grantees to follow best practice and discussions about capacity needs resulted in many grantees taking advantage of PII and other specialists' input to their projects (ant identification, biosecurity, wildlife health and captive husbandry, invasive species eradications (plants, goats, cats, rats, iguana, mongoose), invasive species control, native pigeon conservation, wildlife monitoring) as well as review of project documents.

Further capacity was built through the development and delivery of formal training, as well as "on-the-job" training made possible by the significant in-kind contributions leveraged by PII from its networks. These activities have given grantees new knowledge and skills and exposed them to best practice methods for their projects. Some participants have showed behavioural changes in their work activities following the training and others have passed on their knowledge to other staff and community groups. PII invited the Coordinator of the Pacific Invasives Learning Network (PILN) to the PII Resource Kit training course to familiarise himself with the Resource Kit, encourage country teams to use the Kit and identify potential training participants.

Specialist inputs into projects	PII sourced and briefed subject matter experts to provide specialised technical input into grantee projects. Most of this input was face-to-face, but some advice was given remotely. Target species included invertebrates, mammals, reptiles and invasive plants.
Peer review of key project documents	As part of its commitment to best practice, PII encouraged grantees to have project documents independently reviewed and arranged for the reviews. Subject matter experts were engaged when expertise outside of the PII team was required.
Facilitate and coordinate training activities	Five training courses (Island Biosecurity (2), Invasive Plant Project Management (2), Eradicating rodents and cats on Islands) were developed and delivered to 42 participants. Follow-up invasive plant training was delivered for the Conservation Society of Pohnpei.
Facilitate and coordinate skills exchanges	Four on-the-job training activities were organized and led by PII for grantee agencies. These covered rodent and goat eradication, rodent and cat control and invasive plant management.

Sharing lessons learned:

As well as responding to individual grantees, PII disseminated information on best practice, current developments and project progress through its website, quarterly Newsletter, Facebook page and presentations in meetings and conferences.

COMPONENT 2 PLANNED

Support to CEPF Regional Implementing Team is provided as requested.

COMPONENT 2 ACTUAL

As the technical partner to the CEPF on SD1 and a member of the Technical Advisory Group, PII contributed to decision-making by reviewing proposals, assisting with project selection and providing technical advice to the Regional Implementation Team.

Were any components unrealized? If so, how has this affected the overall impact of the project?

None.

Please describe and submit (electronically if possible) any tools, products, or methodologies that resulted from this project or contributed to the results.

PII produced a one-page information sheet on its services for the CEPF-RIT to attach to introductory emails to CEPF grantees.

Grantees were encouraged to use the PII Project Process (a six-stage systematic approach to planning and implementing invasive species management projects – Appendices 1 and 2) in the development of best practice for their projects.

Many of the tools and guidelines developed for the PII Resource Kit (the world's first best-practice process for managers of rodent and cat eradication projects) were used by grantees in their projects: http://pacificinvasivesinitiative.org/rk/index.html. Many of the tools and process are generic and can be applied to other invasive species management projects. (Development and

production of the PII Resource Kit was funded by the David and Lucile Packard Foundation and the NZ Aid Programme).

The "How to eradicate rodents and cats from islands training course" which showed practitioners how to take full advantage of the Resource Kit was attended by CEPF grantees from Fiji, French Polynesia, Kiribati, New Caledonia and Samoa and the PILN Coordinator. A report on the training is at http://pacificinvasivesinitiative.org/rk/index.html.

Posters were prepared in three languages and used in the Island Biosecurity training course: http://pacificinvasivesinitiative.org/awareness_materials.html.

A flat database (spreadsheets) was developed and used in the Invasive Plant Project Management training course. This is currently being refined as the course is being reviewed.

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.

Project Design Process: (aspects of the project design that contributed to its success/ shortcomings)

This project was successful because we were able to be responsive to agencies needs and adopt a consultative and participatory approach.

Project Implementation: (aspects of the project execution that contributed to its success/ shortcomings)

The aspects that made the implementation of this project a success were PII being recognised as the leading technical support and capacity development provider for invasive species management in the region, having established long-term relationships and being able to complement our capacity through our extensive networks.

The main challenge faced by this project was time. Developing capacity and building confidence takes time, there are no short-cuts. Collating, analysing and delivering technical information and advice to grantees in a package that was useable for them is one side of the equation; the other side was the time that grantees have to process it before they apply it.

Other lessons learned relevant to conservation community:

- **Building strong, long-term, trusting and respectful relationships with grantees is essential.**

Capacity cannot be developed quickly. A one-off project is a good start, but long-term commitment is required. All parties involved in capacity development need to be open and honest from the start and agree to periodically review each parties' progress against agreed capacity development goals and objectives.

- **The capacity development process must be led by the grantee.**

The need for capacity development has to be recognised and owned by the grantee and there is a greater chance that capacity will be strengthened when decision-makers show leadership and embrace learning as part of their organisation's culture.

- **Capacity development requires long-term commitment.**

Many, if not most, staff in conservation agencies in the Pacific are 'all-rounders' working on many different aspects of conservation projects. Invasive species management requires specialist knowledge and skills which can only be developed over time. The commitment required for an agency to develop invasive species management capacity of its staff is often underestimated.

- **Capacity development is a process, not just delivery of one-off training events.**

Capable practitioners require encouragement, opportunities to keep on developing confidence in their role and opportunities to share their knowledge, skills and experiences with others. There is a need to regularly reinforce knowledge and skills. Staff turnover in agencies also means that regular development of capacity is required. Funders and capacity development providers must plan for this.

- **Capacity development does not work to a recipe**

Best practice must be the goal at all times, but grantee knowledge and skills and project requirements mean that innovative solutions/methods have to be developed. One size does not fit all and a flexible and adaptable approach is required.

Additional Funding

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of funding*	Amount	Notes
NZ Aid Programme	A	$NZ57,547	Core funding, sourcing subject matter experts for training and feasibility study
Packard Foundation	A	$NZ15,017	Grantee participation in PII Resource Kit training

**Additional funding should be reported using the following categories:*

A Project co-financing (Other donors contribute to the direct costs of this CEPF project)

B Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)

C Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)

Sustainability/Replicability

Summarize the success or challenge in achieving planned sustainability or replicability of project components or results.

N/A

Summarize any unplanned sustainability or replicability achieved.

N/A

Safeguard Policy Assessment

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

N/A

Additional Comments/Recommendations

CEPF should consider a consolidation phase to 'cement-in' the gains made by the investment to date.

Any future funding in the region should target agencies/projects that have benefitted from the CEPF investment. This would help consolidate gains made, including capacity developed for invasive species management.

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our website, www.cepf.net*, and publicized in our newsletter and other communications.*

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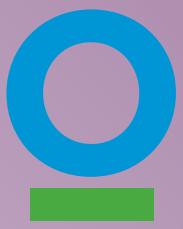

BIODIVERSITY CONSERVATION LESSONS LEARNED TECHNICAL SERIES

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