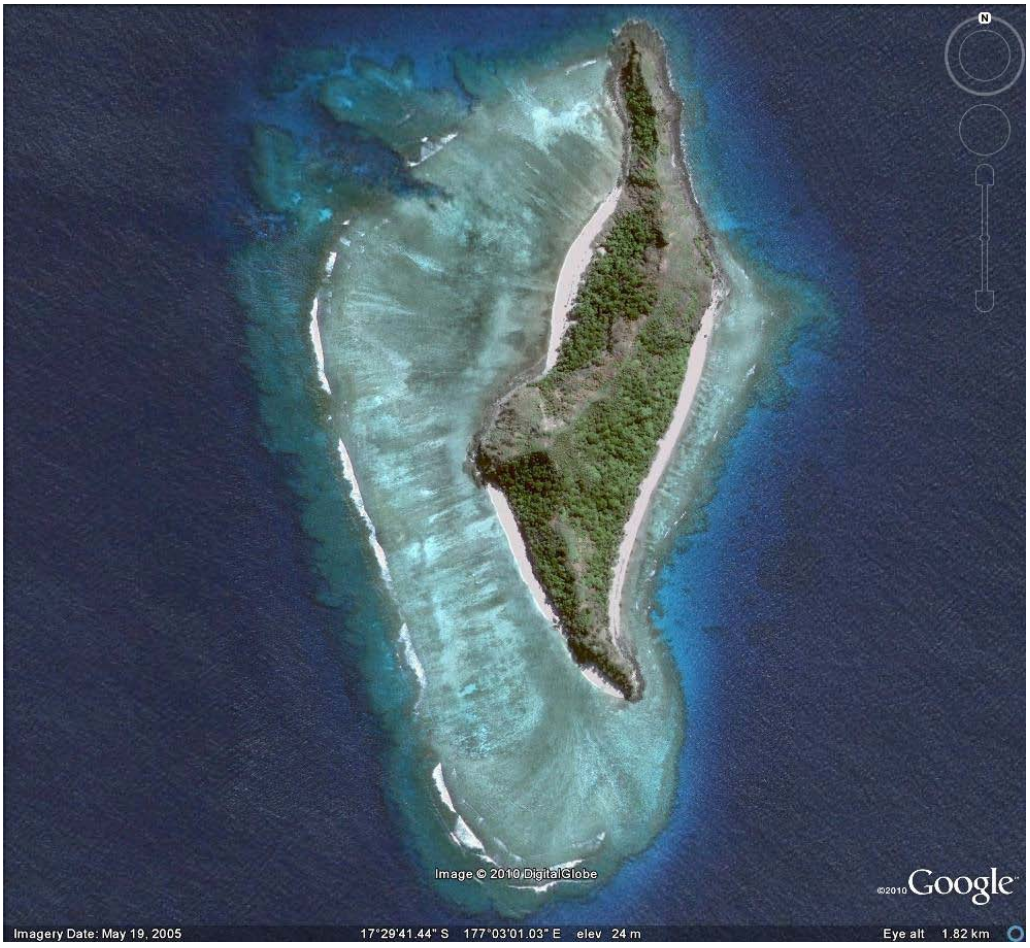
Observations on technical aspects for proposed goat eradication on Kadomo Island, Fiji

(a project of the BirdLife International Fiji Programme, supported by the Pacific Invasives Initiative)

10 June, 2010



Prepared for: BirdLife International Fiji Programme
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The Pacific Invasives Initiative (PII) was established as the first regional programme of the Cooperative Initiative on Invasive Alien Species on Islands (CII) in 2004 and was the first formal invasive species partnership in the Pacific. Based at The University of Auckland, PII is a multi-disciplinary team of invasive species specialists working extensively with Pacific agencies to further develop their capacity for invasive species management.
PII is funded by NZAID, the New Zealand Government's official development assistance agency, The David and Lucile Packard Foundation and the Critical Ecosystem Partnership Fund (CEPF).

The BirdLife International Pacific Secretariat manages a country programme in Fiji pending the development of an eligible conservation NGO there. The Fiji Programme was founded in 2003 and, in February 2010, employed 5 staff.

Investigation Team
Birdlife International Fiji Programme:
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Yanuya community:
Jope Samila – Turaga ni koro
Youths from the Mataqali Namatua

Yanuya community involvement
The Mataqali Namatua is the land owning clan and a member of the clan owns the goats.

Version History:

VERSION	DATE	AUTHOR	REASON FOR CHANGE
Original draft	*13 September, 2010*	*Glen Coulston*	*Created*
2nd draft	*26 October, 2010*	*Bill Nagle*	*Additional information*
3rd draft	*26 November, 2010*	*Sia Rasalato*	*BirdLife information*
Final draft	*6 December, 2010*	*Bill Nagle*	*Weed information*

Introduction

On 10/06/10 a day visit was undertaken to Kadomo Island to look at potential issues that may arise from a goat eradication attempt on the island. Discussions had been held between BirdLife and Mataqali Namatua about mustering and relocating the majority of animals and using other measures to remove any goats that cannot be mustered.

There is a small population of goats on the island with an estimated 20-30 animals according to local residents at Yanuya. Goats were released 32 years ago with the original liberation being 10 goats. Every 2 years the owners have harvested goats catching 5-20 each time. Goats seen on the visit were cautious and moved off while observers were at some distance. This behaviour could be a reflection of previous harvesting activity by the owners.

Sign observed suggests the population estimate is fairly accurate. Fresh browse was in patches rather than widespread. The island's palatable vegetation was not fully browsed out below a defined browse line and showed recovery growth in places. This suggests mobs are small and mobile and are selectively picking the best food. The proliferation of weeds supports the observation that goats are in low density.

The islands linear shape and terrain and its small size (32ha) lends itself to being easy to manage pests on, however the vegetation cover is very dense.

Weed Issues

A botanist was not able to accompany the team and common names have been used for some weeds. The island has some significant weed issues with Mongoose grass, *Mikania micrantha*, *Lantana camara*, Beggars tick, mimosa, casuarina and Nasau grass prevalent. Given these weeds are so widely spread already, eradication of goats will not greatly affect the weediness of the island.

There may be an issue with weeds as they may slow down and prevent reforestation because of competitive and, possibly, allellopathic effects – especially the grasses. There is also the possibility that some of the weeds will spread into the forest canopy and prevent germination of native seeds. Some weed management may be required in the wedge-tailed shearwater nesting area, however removal of goats will allow natural regeneration to occur.

Is eradication feasible?

The island terrain, size and vegetation cover is such that goat eradication is certainly feasible. Preliminary mustering and then dogging has high chance of eradication success, however contingency funding for deployment of professional hunters would be prudent. Mustering will be hard as maintaining a continuous barrier line will be difficult as goats can hide or sneak back in the dense vegetation. With the dense tall grass and lantana sward on much of Kadomo, aerial shooting and a hunter/dog team will be the most effective tools.

The most cost effective way would be by intensive dogging as there are limited bluff systems for goats to hide in. Goats treed or bluffed could still be physically located by the dogs and then dispatched by the dog owner/hunter.

Shooting with ground hunters will be challenged by the dense vegetation, noisiness and poor visibility, but the small size of the island and having enough open spaces may make ground hunting viable for eradication. Twenty days of hunter and dog effort should achieve eradication. The island terrain is such that use of Judas goats will not be necessary.

Aerial control effort would also be cost effective and worth undertaking should a helicopter and shooter be available. The amount of flying time would be small (in the vicinity of 2 evenings and 2 mornings and about 6 hours total). This may mean coordinating with other aerial operations on nearby islands or in the district, whether for goats or other invasive species such as rodents, in order to have a machine available. If there is opportunity for synergies with professional hunters, trained dogs and aerial operations being conducted, these should be utilised.

Whilst mustering and dogging (if conducted appropriately and intensively) should achieve eradication on their own, systematically using a suite of techniques will reduce the risk of a failed eradication by targeting the potential susceptibilities of individual animals to particular techniques. Mustering, aerial shooting, ground shooting and dogging would be the best sequence to utilise - if all are available. This should guarantee success, but will be more expensive, hence aerial and ground shooting can be used as contingencies if intensive dogging and mustering fails.

Proposed relocation of mustered goats

Discussions between Mataqali on Yanuya Island agreed on a proposed area for relocation on Yanuya that is suitable for a population of up to 30 goats. Any greater population would require supplemental feeding. Goats are already present at the location in a free range capacity. These goats are not known to roam from the discrete site at the northern tip. They are however in very low numbers and are not under any food competition pressure to force them to expand their home range. Increasing the population will see more migration around the island when food sources get scarce.

The topography of the land will make full enclosure fencing impossible as the coastline has broken bluffs and is near impossible to fence to the waters edge. There is therefore a high risk the goats will spread elsewhere over Yanuya Island. This will particularly be the case if they are allowed to breed up to densities that the fenced area cannot feed, thereby creating pressure on the mob to breach the fencing to find more food.

Consideration should be given to the fact that it is not always a good idea to remove a problem from one place and put it somewhere else.

Photopoints

The opportunity was taken during the site visit to establish photopoints (PP) with records taken at 4 sites: one in broadleaf/coconut forest on the northern coast; one on the dry steep northern face; one on the ridge line; one in broadleaf forest on the southern face.

Details of photopoints (all directions are Magnetic) -

PP 1 – Northern beach – Coconut/Broadleaf forest habitat
Grid ref S 17.49134, E 177.05196
MASL 29
Date/time 10/06/10 11.05am
4 photos taken
01 - facing 200deg
02 - facing 310 deg
03 - facing 020 deg
04 - facing 110 deg

PP 2 – North facing steep slope
Grid ref S 17.49316, E 177.05173
MASL 64
Date/time 10/6/10 11.25am
2 photos taken
01 - facing 230 deg
02 - facing 050 deg

PP 3 – Ridgeline
Grid ref S 17.49256, E 177.05255
MASL 99
Date/time 10/6/10 11.42am
3 photos taken
01 - facing 200 deg
02 - facing 290 deg
03 - facing 020 deg

PP 4 - Tall broadleaf forest south facing slope behind campsite
Grid ref S 17.49539, E 177.05235
MASL 19
Date/time 10/6/10 12.43am
4 photos taken
01 - facing 150 deg
02 - facing 240 deg
03 - facing 330 deg
04 - facing 060 deg

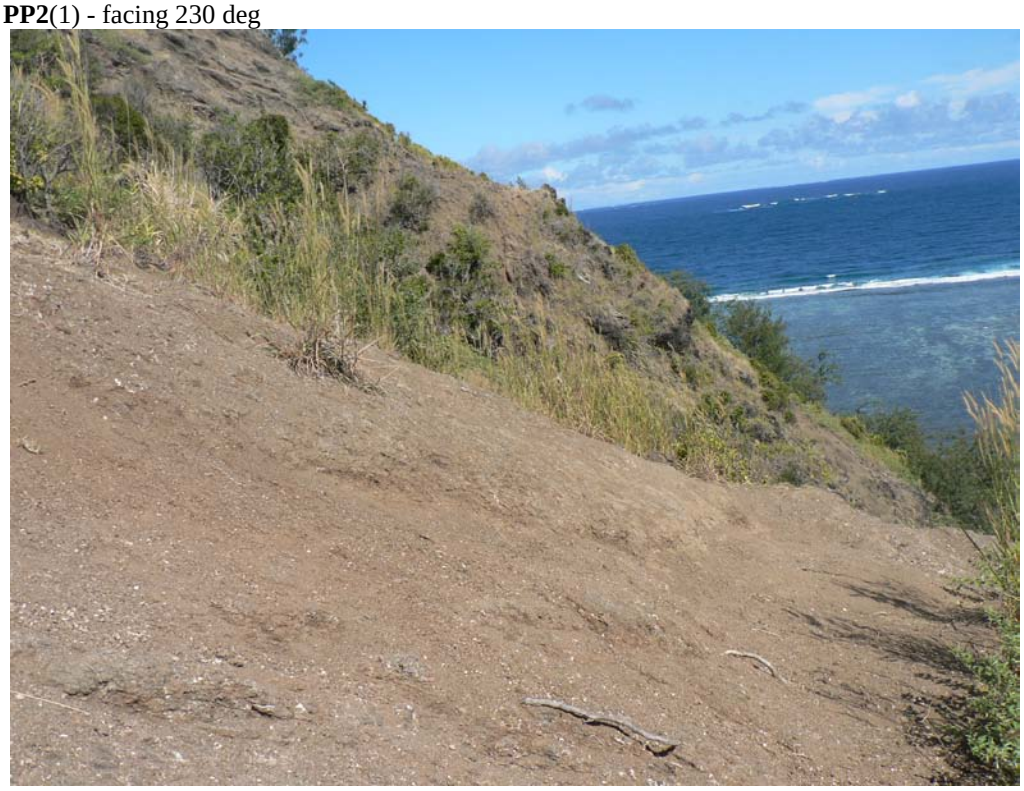
PP1(1) - facing 200 deg

PP1(2) – facing 310 deg

PP1(3) - facing 020 deg

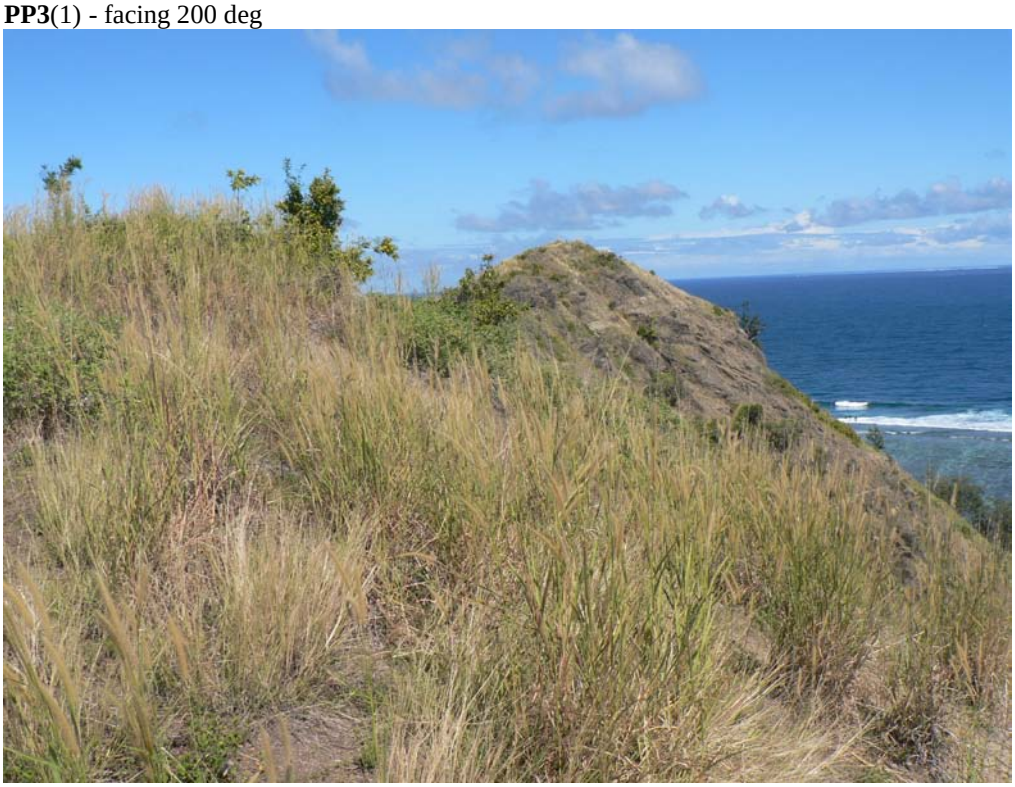
PP1(4) - facing 110 deg

PP2(1) - facing 230 deg



PP2(2) - facing 050 deg

PP3(1) - facing 200 deg

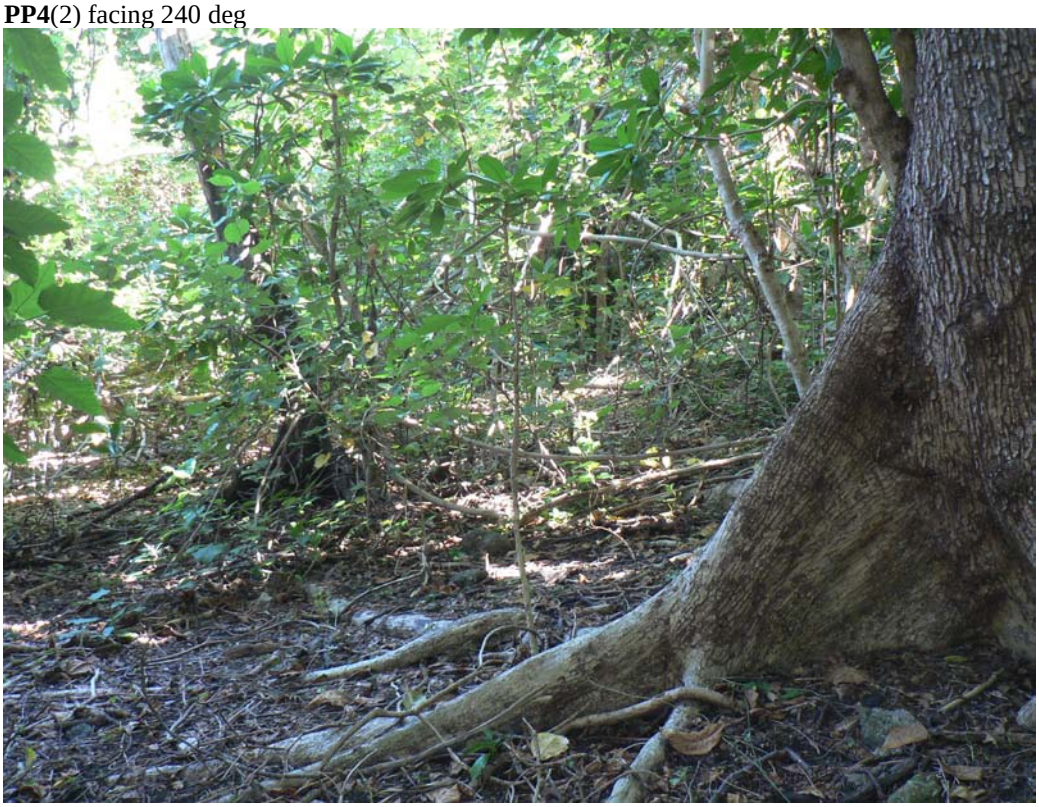


PP3(2) - facing 290 deg

PP3(3) - facing 020 deg

PP4(1) - facing 150 deg

PP4(2) facing 240 deg



PP4(3) - facing 330 deg

PP4(4) - facing 060 deg