

MARIANA AVIFAUNA CONSERVATION (MAC) PROJECT

Translocation of Rufous Fantails (*Rhipidura rufifrons*) and Mariana Fruit Doves (*Ptilinopus roseicapilla*) from Saipan to Sarigan, 15-21 May 2012



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Division of Fish and Wildlife

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2013 MAC WORKING GROUP PARTICIPANTS AND ASSOCIATES

This fifth MAC Project conservation introduction was a joint effort between the Commonwealth of the Northern Mariana Islands' Division of Fish and Wildlife (CNMI DFW), Pacific Birds Conservation (PBC), and the Association of Zoos and Aquariums (AZA). The team of researchers that were actively involved as part of the MAC Working Group in 2013 includes:

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TRANSLOCATION OF RUFIOUS FANTAILS AND MARIANA FRUIT DOVES TO SARIGAN

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INTRODUCTION

On 15 May 2013 the MAC Project introduced 32 Rufous Fantails (*Rhipidura rufifrons*) and 25 Mariana Fruit Doves (*Ptilinopus roseicapilla*) to Sarigan. This translocation constituted the first cohort of fantails established on the island and the second and last cohort of fruit doves introduced to further augment a small, self-established population on Sarigan. One last cohort of fantails is planned for introduction to the island in 2015.

METHODS AND RESULTS

Study Site

The uninhabited island of Sarigan is an extinct (or dormant) strato-volcano with no recorded history of activity that lies 95 nautical miles north of Saipan (Fig. 1). At approximately 500 ha (5 km²) in area and 549 meters at its highest elevation, most of the island's shoreline is irregular with steep, rugged, and eroded cliffs created by old lava flows and landslides (Berger et al. 2005). At an elevation of between 100-106 meters lies a plateau (i.e., the "upper plateau") to the north and east of the peak that constitutes the island's highest point; on this plateau are situated Sarigan's "upper camp" and the release site (both at 16° 42' N, 145° 47' E; Fig. 2; Radley 2008, 2009, 2011, and 2012).

As much as 45% (223 ha) of Sarigan is covered by forest, the remainder consisting of either grass or areas of barren rock. A DFW survey of the island in 2006 indicated that forest cover consisted of approximately 75-90 ha of native forest (34%-40% of total forest cover; Fig. 2) and 133 ha of old coconut plantation or agricultural forest (60% of total forest cover; Martin et al. 2008). Both the upper camp and the release site are located at an interface between grass and barren rock and primarily native forest.

Pre-Translocation 2013

Rufous Fantail Capture

Between 4 and 12 May 2013, 36 Rufous Fantails were captured on private land in the Marpi area of Saipan (in a radius of approximately one half mile of 15° 14' N, 145° 47' E). This area has been used to some degree since MAC Project field capture first started on Saipan in 2006. All fantails were weighed at capture (mean = 7.7 grams; range = 6.7 – 8.5 grams), marked on the right leg with a numbered aluminum leg band, and assessed for health issues. The same capture and handling protocol were followed as those used for capturing Golden White-eyes (*Cleptornis marchei*) in 2011 and 2012 (Radley 2011 and 2012) and Bridled White-eyes (*Zosterops conspicillatus*) in 2008 (MAC Working Group 2008).



Figure 1. The Northern Mariana Islands (taken from <http://www.infoplease.com>).

Mariana Fruit Dove Capture

Between 30 April and 8 May 2013, 26 Mariana Fruit Doves were captured on private land in Marpi, Saipan, at the same area that the Rufous Fantails were captured. Collection for the species went very well with 65% (17) of the total captured on the first day. All fruit doves were weighed (mean = 84.8 grams; range = 71.8 – 99.1 grams), banded on the right with a numbered aluminum leg band, and assessed for health issues, and the same handling protocol were followed as those for Rufous Fantails.

Holding and Processing

Both Rufous Fantails and Mariana Fruit Doves were held in the field, transported from the field to designated holding facilities, and translocated to Sarigan. A room rented at the Summer Holiday Hotel in the main village of Garapan, Saipan, served as on-island holding facilities and avian lab. While at the facilities/avian lab, all Fantails were held in the boxes used for Golden White-eyes in 2012, which were originally designed and built to hold Bridled White-eyes on Tinian in 2009 (Radley 2009 and 2011). This unit is essentially a slightly modified version of the bird shipping container (hereafter referred to as “transport boxes”) used by the MAC project since 2007. Fruit doves were held in boxes specifically designed to hold individual doves. Rufous Fantails were offered fresh mealworms a minimum of three times daily and live flies

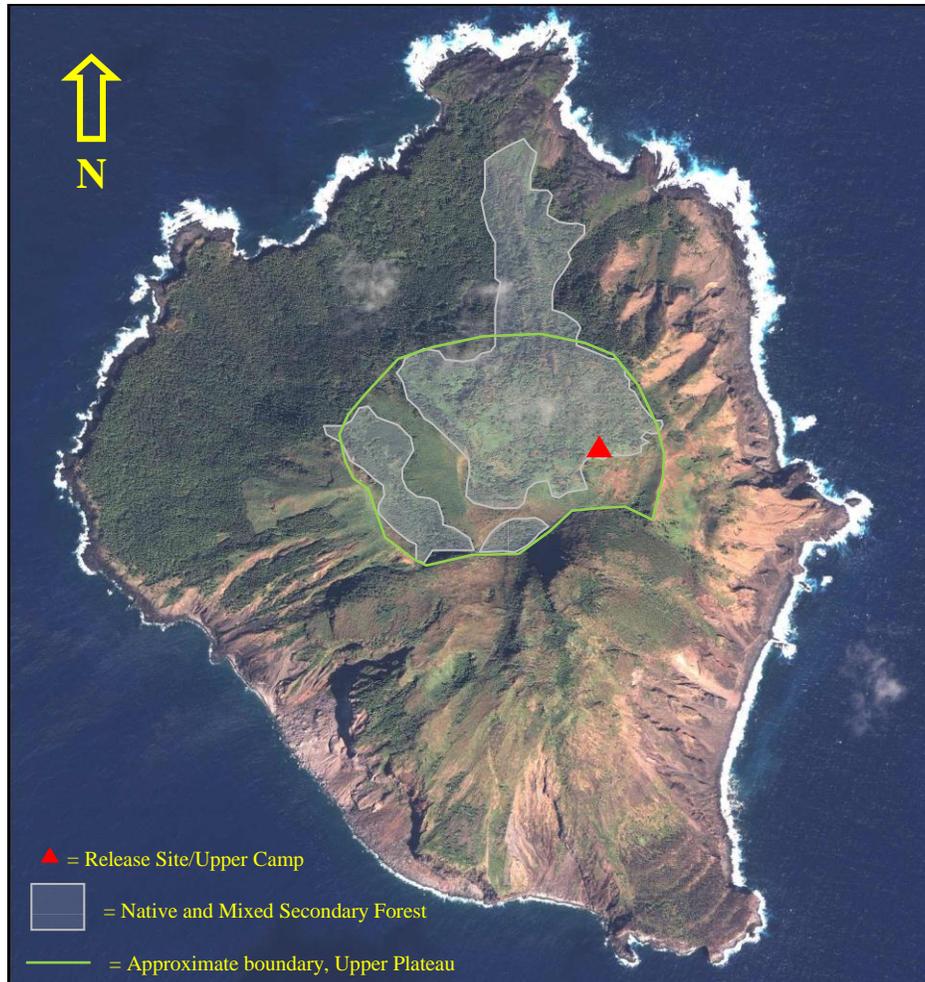


Figure 2. The location of native and mixed secondary forest, the 2011 release site and upper camp on Sarigan, CNMI.

throughout the day (four to six times daily). Captives of both species were weighed daily prior to morning feeding to track health and the status of their acclimation to captivity. Fecal output of both species was monitored to ensure food consumption and proper digestion. If there was a noted weight loss, a second weight would be obtained in the late afternoon to confirm weight gain throughout the day from food consumption. Fecal output was monitored for fantails to look for the presence of digested mealworms so that fly feedings could be decreased. Fruit doves were routinely hand-fed a weaning formula to insure their weights were maintained for release on Sarigan. To detect and treat potential health issues amongst the captives, and to prevent transmission of disease to Sarigan, fecal scans were run and all birds wormed as necessary.

Of 36 Rufous Fantails originally captured, three died in captivity from an apparent lack of nutrition between one, two, and four days post-capture. To prevent this from further occurring, the initial feeding regimen was intensified with each bird offered 40-50 flies per feeding, four feedings per day. Feeding of flies was continued even after individual fantails began to transition to taking gut-loaded mealworms. To facilitate a fly-heavy feeding regimen fly live

capture stations were established on island after live fly pupae that had been ordered and shipped from the states arrived later than expected, causing the majority of pupae to die (the US Post shipments were delayed in Guam prior to arrival on Saipan). One other fantail was released at the trap site six days after capture because of continual “lethargic” behavior. The bird did not exhibit the food consumption patterns or fecal output of other captives and there was concern among AZA staff that it was not adapting well to the captive diet. Upon release the bird was observed to fly off vigorously, seeming apparently fine. This left 32 Rufous Fantails deemed as fit for translocation to Sarigan.

Only one of the Mariana Fruit Doves died in captivity (a juvenile bird, six days after capture) from a currently unknown cause, but not from aspiration. There were no gross lesions noted but some vital organs appeared irregular (H. Roberts, pers. comm.). This left 25 fruit doves for translocation to Sarigan.

Preparation for Translocation

To facilitate and enhance post-translocation monitoring, all Rufous Fantails were individually color banded on Saipan on the afternoon of 14 May prior to introduction to Sarigan. Because of a lack of color bands large enough for fruit doves, AZA staff used zip-ties placed on each bird’s left tarsi, each color coded to its determined sex (pink for female, yellow for male). For this purpose, sex was determined in the field by H. Bailey and was based upon weight with an estimated 12 males and 12 females (1:1 ration) chosen for translocation. Later DNA analysis showed that sex based upon weight was 68% correct and that the ratio was actually 1.4:1 (14 male to 10 female).

A crew of three DFW staff (T. Willsey, J. Camacho, and P. Radley) arrived on Sarigan late-morning on 14 May to prepare both the camp and release site. The release site chosen was the same one used in all previous releases on the island since 2008 (Radley 2008, 2009, 2011, and 2012).

Translocation

Transport to and Release on Sarigan

At approximately 07:15 on 15 May, weather clear and sunny, the entire 2013 AZA crew arrived at the *Americopters* heliport on Saipan with 12 transport boxes containing the 32 Rufous Fantails and 25 Mariana Fruit Doves for translocation to Sarigan. The boxes were loaded into the cargo bay of the flight prepped Messerschmitt BO 105 *Bölkow* helicopter and secured with bungee cords and cargo netting by the flight crew. At approximately 08:00, the helicopter departed for Sarigan with the birds, H. Bailey, and R. Benford who arrived separately at 07:45.

At approximately 09:00 on 15 May the helicopter landed at upper camp on Sarigan and was powered down. As the aircraft was shut down, DFW and AZA staff shuttled the transport boxes containing fantails and fruit doves from the helicopter to the release site. After all boxes were in place they were left quietly for ~20 minutes to allow the birds some time to calm and acclimate after the flight. At approximately 09:30 the transport boxes were opened to release their occupants starting with the fantails. Fantails were completed at 09:40 and P. Radley and H. Bailey immediately began releasing the fruit doves, starting with the 10 on which transmitters

were to be deployed (all transmitters were attached at the release site in 2013); transmitter attachment and release was completed at 10:08.

By approximately 10:12 all birds were released on Sarigan and the transport boxes were re-secured in the helicopter prior to its departure for Saipan with the AZA release crew and R. Benford. From 10:30 to ~12:00, P. Radley gave R. Benford and H. Bailey a tour of the upper plateau and the forest of Sarigan prior to the helicopter's departure at shortly after noon.

Post-Translocation Monitoring

Rufous Fantails and Golden White-eye Resighting

After lunch and work on one of the tarps at basecamp, P. Radley headed out at 15:00 to re-sight color banded Rufous Fantails and T. Willsey and J. Camacho got a feel for radio tracking Mariana Fruit Doves. Three fantails and two Golden White-eyes were re-sighted in forested areas just to the north of the main camp and signals for fruit doves were received from an area just east of the release site. Crew returned to camp at 17:00.

From 16 through 21 May, P. Radley spent mornings and later afternoons (with a few hours taken off during the hottest time of day - ~noon to 15:00) re-sighting both color banded Rufous Fantails and Golden White-eyes (P. Radley was joined part-time by T. Willsey and J. Camacho in re-sighting efforts from 19-21 May). Twenty of 32 fantails were re-sighted, nine of these on multiple days. Towards the latter portion of the monitoring period on Sarigan, a number of these birds appeared to be "paired" and disputing territories with other individuals or "pairs". In the late morning of the last day of monitoring (21 May), an obvious Rufous Fantail pair was observed in the middle to final stages of building a nest (Fig. 3), one of the pair soliciting for copulation.



Figure 3. Nearly complete Rufous Fantail nest found on Sarigan on 21 May, the last day of post-translocation monitoring in 2013.

Eleven color-banded Golden White-eyes were also re-sighted during the 2013 monitoring period, four of which had been translocated in 2011, and five of which were re-sighted more than once. At least an additional nine unbanded Golden White-eyes were observed, some of which were obviously paired and defending territories with banded or other unbanded individuals. Although no active nests were located, one recently fledged young (with no tail, growing in feathers, and incapable of flight) was found in the presence of very defensive adults, both of which had been introduced to the island in 2011. An old Golden White-eye nest was found a few meters from the fledged young.

The majority of fantails and Golden White-eyes re-sighted were observed on Sarigan's upper plateau (Fig. 2). Only three, possibly four, were detected just below the edge of the plateau off its northwest corner. No others were detected on the upper third of the north facing slope of the plateau. By default, all birds were observed in primary native forest; coconut forest was only marginally searched.

Mariana Fruit Dove Telemetry

The majority of Mariana Fruit Dove radio-telemetry was undertaken from 15-18 May, during which time seven to nine of the 10 transmitters were detected and birds could be confirmed as active by signal oscillation. By 19 May signal detection was becoming more difficult, with five transmitters detected in the morning and only two in the afternoon. This forced T. Willsey and J. Camacho to spend the majority of their time searching for high vantage points to use as receiver sites. Regardless, only one fruit dove deployed transmitter was detected on both 20 and 21 May.

RECOMMENDATIONS FOR IMPROVEMENT

While executing the introduction of Rufous Fantails and Mariana Fruit Doves to Sarigan in 2013, the MAC Working Group identified issues that require revision and improvement. These improvements will be implemented in future such avian conservation efforts in the CNMI.

- Alternative methods to either radio-telemetry or tracking radio-marked birds need to be investigated and discussed pertaining to tracking birds post-release in future translocation efforts. Results from this year and previous years provide little useful information about the activity, whereabouts, and survival of birds after they are released (Radley 2008, 2009, and 2012).

ACKNOWLEDGEMENTS

The AZA provided all funds to support the field collection of birds on Saipan for introduction to Sarigan and USFWS provided the funds (via Wildlife Restoration Grant) necessary for translocation activities. *Americopters Inc.* of Saipan was responsible for transporting personnel, equipment, and birds to Sarigan from Saipan. Tyler Willsey and Jay Camacho assisted with post-translocation monitoring field work, Paul Lisua assisted with logistics on Saipan, and Russell Benford both helped with logistics and release on Sarigan.

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