

## **Trip Report**

**The Mariana Avifauna Conservation Program 2013**, Translocation of Mariana Fruit Doves (*Ptilinopus roseicapilla*) and Rufous fantails (*Rhipidura rufifrons*) from Saipan to Sarigan and Collection of Rufous fantails for Captive Programs

**Prepared by:** Field Falcone, Peter Luscomb, Herb Roberts

### **Personnel**

Hannah Bailey, Houston Zoo  
Leanne Blinco, Disney's Animal Kingdom  
James Breeden, Honolulu Zoo  
Jessica Clark, Houston Zoo  
Rosaria DiMeglio, Disney's Animal Kingdom  
Fields Falcone, Memphis Zoo  
Deidre Fontenot, DVM, Disney's Animal Kingdom  
Ellen Gorrell, Toledo Zoo  
Eric Jeltres, St. Louis Zoo  
Erica Lipanovich, DVM, Dickerson Park Zoo  
Peter Luscomb, Pacific Bird Conservation  
Scott Newland, Sedgwick County Zoo  
Jeff Pribble, Birmingham Zoo  
Paul Radley, CNMI DFW  
Herb Roberts, Memphis Zoo/Pacific Bird Conservation

### **Objectives of MAC Program 2013**

The primary objective of MAC 2013:

- Translocate 24 Mariana fruit doves and 24 Rufous fantails from Saipan to Sarigan.

The secondary objective of MAC 2013:

- Acquire 12 Rufous fantails for captive program.
- Initiate field research on Rufous fantail to document territorial behavior of nesting birds.
- Conduct endocrine study to document stress levels of Rufous fantails in captivity.
- Initiate community outreach program

### **Itinerary**

**27 April:** Start up team arrives Saipan. Team includes: Peter Luscomb, Herb Roberts, Fields Falcone, Scott Newland, Ellen Gorrell, Erica Lipanovich DVM., Jeff Prible, Eric Jeltres.

**28 April:** Pick up equipment at Fish and Wildlife base yard and set up bird room at hotel

**29 April:** Set up base camp at trapping site A

**30 April - 8May:** Trap Mariana fruit doves and Rufous fantails at trapping site A

**3 May:** First members of the close up team arrive in Saipan: Jessica Clark, James Breeden.

**8 May:** Close up trap site A

**9 May:** Last of the close up team arrive in Saipan: Rosaria DiMeglio, Diedre Fontenot DVM., Leanne Blinco.

**9 May:** Set up base camp at trapping site B

**10 May:** First member of start up crew departs Saipan: Eric Jelts

**11 May:** Two more members of start up crew depart Saipan: Erica Lipanovich DVM., Jeff Prible

**9-12 May:** Trap Rufous fantails at trap site B.

**12 May:** Close up trap site B

**14 May:** Prep birds for translocation

**15 May:** Birds translocated from Saipan to Sarigan

**15 -16 MAY:** Bird room cleaned up and all equipment returned to CNMI Fish and Wildlife base yard.

**17 May:** Close up team depart Saipan: Peter Luscomb, Herb Roberts, Fields Falcone, Hannah Bailey, Scott Newland, Ellen Gorrell, Jessica Clark, James Breeden, Rosaria DiMegilio, Diedre Fontenot DVM., Leanne Blinco.

## **Background**

Guam's avifauna rapidly disappeared with the introduction of the brown treesnake in the last half of the twentieth century via cargo ships. The snake is believed to be solely responsible for the extirpation or severe reduction of Guam's 25 bird species. Based on roadside surveys conducted on Guam over a 20 year period, most species experienced a 90% decline within nine years.

The islands of Saipan, Tinian, and Rota, part of the Commonwealth of the Northern Mariana Islands (CNMI), are all close neighbors to Guam and are recognized as having the greatest risk from introduction of the brown treesnake. Recovery Plans published by the U. S. Fish and Wildlife Service for the currently listed species all cite the establishment of the brown treesnake as a major threat. To date there have been over 90 sightings of brown treesnakes on Saipan.

The Mariana Islands all have avifauna with limited distribution, with most forest bird species found only in the CNMI. Several species have extremely limited distribution such as the Tinian monarch (*Monarcha takatsukasae*), found only on Tinian; the golden white-eye (*Cleptornis marchei*), found only on Saipan and Aguinguan; the nightingale reed-warbler (*Acrocephalus luscini*a) found only on Saipan and Alamagan; and the Mariana fruit dove (*Ptilinopus roseicapilla*), found only on four CNMI islands, numbering less than 10 on some islands. The CNMI government has requested the assistance of Pacific Bird Conservation and AZA institutions to aid with the following objectives:

- Develop techniques to capture, acclimate to captive conditions, hold, transport, and breed in captivity all of the bird species found in CNMI,
- Establish captive populations of select species that can be used as a source population for possible reintroduction back to Guam or islands in the CNMI which are able to control the brown treesnake,
- Translocate birds to islands where the brown tree snake is not present,
- Develop public education programs that will assist the conservation of their avifauna,
- Develop fund raising program to assist in situ conservation efforts, and
- Provide training to local biologists upon request.

The Mariana Avifauna Conservation (MAC) Program, in a partnership between the CNMI Division of Fish and Wildlife (DFW), U.S. Fish and Wildlife Service, Pacific Bird Conservation and 15 accredited zoos from the Association of Zoos and Aquariums (AZA). The MAC program began in 2004.

For more information please visit our home page,  
<http://www.facebook.com/pages/The-MAC-Program/137557033010876>,

### **Overview of project**

The 2013 MAC field team consisted of fifteen participants from ten AZA zoological institutions, Pacific Bird Conservation and CNMI Fish and Wildlife. The team consisted of zoo curators/managers, zoo animal keepers, field researchers, veterinarians and veterinarian technicians. Members of the field team were on Saipan from 27 April to 17 May 2013.

One of the main benefits of the MAC program is the opportunity to train participants in all aspects of our work. All staff are rotated between the field and bird room activities allowing them to get experience in the capture and management of birds for translocation.

While the target bird species technically breed year round as this is a tropical island ecosystem, the translocations are purposely planned at the end of the dry season, when the birds are typically finished with the main spring pulse of breeding. This was done in order to avoid interrupting this breeding cycle and catching birds that were actively nesting. In 2013 we did not find any active nests of fruit doves or fantails.

### **Trapping**

Trapping was done at two sites in the Marpi region of Saipan. All trapping was done on public land though access to Site A was through private land with permission from the landowner. Site

A was a large open field that was vegetated primarily with a species of lantana (*Verbenaceae*) and a species of Solanum (a shrub that was full of green fruit that was being consumed by the fruit doves. Site A was the primary trapping site for fruit doves. Fantails were also trapped at Site A. Site B was an area that was forested with areas of open grass fields. Site B was the area where the remaining fantails were trapped.

All trapping was done with the use of mist nets. Fruit doves were trapped using mist nets with a 60mm mesh size. This allowed us to minimize incidental capture of smaller non-target species. The fantails were captured using mist nets with a 24mm mesh size.

A total of 24 net set ups were used over the two trap sites. It took approximately 225 net-hours to capture the targeted amount of birds for this project. A total of 124 birds were captured during this work. Non-target species were released at the trap site once they were removed from the net.

A total of 26 Mariana fruit doves were collected at site A: 24 birds were collected between 30 April and 1 May (approximately 12 hours of trapping) and then 2 additional birds were collected on 8 May.

A total of 36 Rufous fantails were collected: 24 birds were collected at site A between 4 – 6 May and an additional 23 fantails were collected at site B between 9 – 12 May.

### **Husbandry**

Target species that were taken out of the nets were placed in transport boxes and held before being transported back to the hotel. When birds arrived at the hotel they were processed, which included: doing a quick physical exam, taking a weight, and banding the birds. Birds were then placed singly into specially build holding cages.

Once birds were in captivity, all birds were weighed daily (in the A.M.) and fed up to four times daily. All cages were cleaned in the morning prior to the first feeding.

Mariana fruit doves were hand-fed a formula to insure weights were maintained for release. Birds were originally fed 2-3 cc of formula per feeding and this increased daily until birds were taking up to 12cc per feeding. Birds were fed three times a day and some birds were tapered off to two feeding per day. One bird died while in captivity. The bird was being tube fed at the time and it was thought that the bird could have aspirated formula but upon review of its necropsy it was determined that no formula was found in the lungs. The reason for its death was not determined.

The Rufous fantails were a challenge to manage. Plans had been made to acquire live fly pupae to feed the fantails, but unfortunately all three shipments of pupae were delayed once they arrive in Guam/CNMI and the pupae arrived dead. A live trap system had to be developed to provide the birds with adequate amounts of flies to eat until they could transition to mealworms. Of the first 13 fantails brought into captivity 3 birds died after 1, 2 and 4 days in captivity. The first bird died after one day in captivity with a weight loss of only 4.4%. The two other birds died with a weight loss of 8.9% and 13.7%. A review of the birds was made and one bird was released because of lethargy. When it was released back at the trap site it flew off vigorously and seemed to be fine.

After reviewing necropsy results it was felt that the birds were not getting adequate nutrition so a more intense feeding regiment with flies was initiated. Birds were given 40 - 50 flies per feeding for 4 feedings per day. Flies were given to the birds even when they started to transition to mealworms. The remaining 32 fantails did well with the increase in flies. The average weight change from the first morning weight to their release weight was on average an increase of over 7%.

Veterinarian staff ran parasite checks on all of the birds and found that many of them has low levels of Isopora (Coccidia) . The levels of Isopora were not at a level to be detrimental to their health. A medial summary will be done for all birds.

An attempt was made to determine the sex of the Mariana Fruit doves prior to translocation so we were able to send as even a sex ratio as possible. Morphological data and weights were taken on the birds when they were processed. There is a slight weight difference in fruit doves where the males are generally heavier than females. Feather samples were also taken but the results were not available until after the translocation.

### **Translocation**

The preparations for getting birds ready for translocation began late in the afternoon on 14 May. Birds were removed from their holding cages and then banded with color bands before being placed into their transport boxes. Each bird was placed singly into a single compartment with food and water. On 15 May the fantails were fed early in the morning prior to the birds being taken to the heliport for translocation. We had a total of 12 crates of birds. Once at the heliport the crates of birds were placed inside of the hanger to minimize the disturbance from staff and impact from the sun. Once the helicopter was ready for the flight, the birds were loaded and secured in preparation for departure.

#### **Mariana fruit dove**

Sarigan had an estimated two to three fruit doves on the island prior to translocation. In 2012, 10 Mariana fruit doves were translocated to the island. During the 2013 field season we were able to move 25 more fruit doves to Sarigan.

#### **Rufous fantails**

Fantails were not found on the island of Sarigan, but the forest habitat is of nearly identical species composition to the native forest of Saipan. Due to demanding husbandry requirements, the original target number of rufous fantails was 24. We had originally planned on bringing 8 fantails back into captivity. When we were not able to make flight arrangement to get the birds back to US then it was decided to include these birds in the translocation. In 2013 we were able to translocate 32 Rufous fantails to Sarigan. A second cohort will be translocated to Sarigan at a future date.



Figures 1-3. Mariana fruit dove being (1) extracted from a mist net, (2) loaded into a transport crate, and (3) tube-fed while in holding for two weeks of monitoring prior to translocation.



Figures 4-5. Rufous fantails being (4) extracted from mist nets and (5) color-banded on Saipan for translocation to Sarigan, CNMI.