

Trip Report

The Mariana Avifauna Conservation Program 2014b, Field collection of Rufous fantails (*Rhipidura rufifrons*), Tinian monarch (*Monarcha takatsukasae*) and Bridled White-eye (*Zosterops conspicillatus*) from Tinian for captive programs

Prepared by: Peter Luscomb, Herb Roberts

Personnel

Hannah Bailey, Bird curator -Houston Zoo

James Breeden, Bird curator - Honolulu Zoo

Erica Lipanovich, DVM

Peter Luscomb, President and Co Founder Pacific Bird Conservation

Objectives of MAC Program 2014b

- Acquire 4 Rufous fantails for Honolulu zoo captive program
- Acquire 4 Tinian monarchs for Memphis zoo captive program
- Acquire 30 Bridled white-eye to be distributed between Memphis zoo, Sedgwick County zoo and National Aviary for captive programs.

Itinerary

24 June: -Hannah Bailey arrives on Saipan and starts preparing equipment for shipment to Tinian.

25 June: -Peter Luscomb, Erica Lipanovich and James Breeden arrive on Saipan.

26 June: - Equipment picked up from container at Department of Fish and Wildlife base yard and taken to SN5 for transport to Tinian. Barge not going to Tinian on 26 June but will go out on 27 June.

- Peter Luscomb, Hannah Bailey, Erica Lipanovich and James Breeden flew from Saipan to Tinian on Star Marianas.

- Set up fly bait stations at dump site and at Trap site A.

27 June: - Scouted Trap site A for net sites, cut 6 net lanes
- Picked up equipment from SN5 barge
- Set up bird room
- Set up field camp and nets A1,2,3,4,5,6,7,8

28 June: - Started trapping birds

30 June: - Set up nets A9,10,11

1 July: - Finished trapping birds

2 July: - Took down nets and dismantled field camp

8 July: - Loaded birds into transport boxes

- Dismantled bird room and packed up all equipment
- Took equipment to SN5 for transport back to Saipan

9 July: - Peter Luscomb and Erica Lipanovich flew from Tinian to Saipan to pick up equipment from SN5 and return it to the container at the Fish and Wildlife base yard.
- Picked up five 6-compartment shipping boxes and returned them to Tinian.
- Peter Luscomb and Erica Lipanovich returned to Tinian
- Removed all of the BRWE from the four compartment boxes and placed the BRWE singly in the six compartment boxes.

10 July: - Chartered Star Marianas Air plane to transport field team and birds from Tinian to Guam.
- Took birds to Guam Dept of Agriculture quarantine building for holding.

11 July: - Field team and birds departed Guam for Honolulu

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 Pacific Bird Conservation home page,
<http://www.pacificbirdconservation.org>

Or <http://www.facebook.com/pages/The-MAC-Program/137557033010876>,

Project Set Up

On 25 June Hannah Bailey spent the day on Saipan going through the MAC program equipment container and organizing the equipment needed for our Tinian project. On 26 June the rest of the team arrived and assisted in getting the equipment to the dock for transport to Tinian by SN5 (barge company). (fig: 1) We picked up 50 lbs of whole tuna and packed them in a cooler with ice. The tuna were needed as bait for flies. We did last minute shopping on Saipan and then headed off to the airport so we could catch our flight to Tinian. Once on Tinian we took some of the tuna and started to prepare our flytraps. We placed tuna in pans out on the ground at our trap site A as well as a site just outside of town near the dump. On the morning 27 June the team scouted out our trap site and cut net lanes that could be used. When the barge arrived with our equipment we were able to get the equipment to our hotel where Hannah Bailey and Erica Lipanovich started working on setting up the bird room. (fig: 2, 3) Peter Luscomb and James Breeden then went out to trap site A and set up nets A01-08. By the afternoon of 27 June the fly-traps were beginning to attract a lot of flies so we were now ready to start collecting birds.



Fig: 1 Crew dropping off equipment at SN5



Fig: 2 Bird room

Trapping

All of our trapping activities were done on the north end of Tinian. We set up our nets in an area known as North Field, along side the most southern runway. (Fig: 3-4)



Figure 3: Northern portion of Tinian Island. Trap site in red.

All trapping was done with the use of mist nets. Because of the size of birds being targeted we only used 24 and 30mm nets. Our initial trapping focused on Rufous fantails and Tinian monarchs. We needed to have these species sexed prior to shipment so feather samples were collected and sent off to Avian Biotech International as soon as all samples were collected. Once the Rufous fantails and Tinian monarchs were collected we then targeted Bridled white-eyes. Trapping was done in a Tangan Tangan forest (*Leucaena leucocephala*) intermixed with other coastal native trees.

A total of 14 nets were used on 11 net set ups. (table:1) Single nets were used for the flycatchers. Once the flycatchers were collected then 3 double-stacked nets were used for the white-eyes. It took approximately 117 net-hours to capture the targeted amount of birds for this project, this amounted to 2.5 days of trapping. A total of 93 birds were captured during this work. (table 2) Non-target species were released at the trap site once they were removed from the net.



Figure 4. Location of nets

Table 1. Total bird captures including target and incidental individuals from mist-netting on Tinian, CNMI.

Net #	GPS coordinates		Discription	28-Jun-14		29-Jun-14		1-Jul-14				
	N	E		open	shut	open	shut	open	shut	open	shut	Net hours open
A01	15 - 03.858	145 - 38.288	24mm x 12m	6:25	11:45	5:30	9:30					9.33
A02	15 - 03.836	145 - 38.288	24mm x 12m	6:25	11:45	5:30	9:30					9.33
A03	15 - 03.827	145 - 38.291	24mm x 6m	6:25	11:45	5:30	9:30					4.66
A04	15 - 03.786	145 - 38.279	24mm x 12m	9:15	18:00	5:45	9:30					12.50
A05	15 - 03.780	145 - 38.267	24mm x 12m	9:15	18:00	5:45	9:30					12.50
A06	15 - 03.787	145 - 38.252	24mm x 12m	9:15	18:00	5:45	9:30					12.50
A07	15 - 03.798	145 - 38.261	30mm x 12m	9:15	18:00	5:45	9:30					12.50
A08	15 - 03.798	145 - 38.245	30mm x 12m	9:15	18:00	5:45	9:30					12.50
A09	15 - 03.817	145 - 38.288	double 24mm x 12m					6:00	6:45	9:00	13:30	10.50
A10	15 - 03.816	145 - 38.268	double 24mm x 12m					6:00	6:45	9:00	13:30	10.50
A11	15 - 03.818	145 - 38.251	double 24mm x 12m					6:00	6:45	9:00	13:30	10.50
									Total net hours			117.32



Figure 3. Habitat where nets were set.

Table 2. Species of birds collected

Net #	Species										Total captures by net	Net hours per net	Captures per net hour
	RUFA	BRWE	MAFD	TIMO	MIST	WTGD	MIHO	COKI	ISCD	OCHW			
A01	2	1					2				5	9.33	0.54
A02	3			1							4	9.33	0.43
A03	1										1	4.66	0.21
A04	2	2		2	1		1		1		9	12.50	0.72
A05				1			1	1			3	12.50	0.24
A06	7				1		2				10	12.50	0.80
A07	3						2				5	12.50	0.40
A08	2			6							8	12.50	0.64
A09	1	20		1			2			4	28	10.50	2.67
A10	1	6	1				3	1			12	10.50	1.14
A11		5	1	1	1						8	10.50	0.76
Total by species	22	34	2	12	3	0	13	2	1	4	93	117.32	0.78
Species code: RUFA - Rufous Fantail, BRWE - Bridled White-eye, MAFD - Mariana Fruit Dove, TIMO - Tinian Monarch, MIST - Micronesian Starling, WTGD - White Throated Ground Dove, MIHO - Microneasian Honeyeater, COKI - Collared Kingfisher, ISCD - Island Collared Dove, OCHW - Orange Cheeked Waxbill													

Husbandry

Of the 93 birds collected, 8 Rufous fantails, 10 Tinian monarchs and 34 Bridled White-eye were brought into captivity. Target species, which were needed for captive programs, were taken out of the nets and then placed into a net bag and transported back to a field base camp. They were then placed singly into transport boxes and held before being transported back to the hotel. All birds were fed, watered and monitored to ensure they were in good condition. 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 into specially built holding cages. The Rufous fantails and Tinian monarchs were placed singly in our holding cages while the Bridled white-eyes were placed 2-3 birds per cage. All birds were monitored (activity levels, food consumption, fecal output) and the best birds suited for captive programs were retained for shipment to US zoos while birds surplus to our needs were returned to the trap site and released.

General routine:

Birds were serviced 4 times a day. Staff entered the bird room at approximately 0600hrs and turned on the lights to the room and allowed the birds to adjust to the lights. Once birds were awake and active, one person would start weighing birds and the other would start prepping their diets. After weights were taken, then feeding began. The trays were removed from the cages and all bowls and paper were removed. The trays were wiped clean as needed and then fresh paper and food and water were added. The trays were replaced in the cage. The first feeding was usually completed by 0700 hrs. After all cages were serviced then flies were added to the cages as needed. All cages were checked at 1000 hrs and 1300 hrs and insects were added as needed. At 1600 hrs the last daily check was made. Weights were taken on birds as needed. Fresh feed bowls were made and given to all birds. No paper change was done at this time. Flies were given to birds as needed. The room lights were turned off at approximately 1900 hrs. A night-light was left on to provide birds with some light so they could find their perch if they became startled during the night.

Diets:

Rufous fantails were fed flies 4x a day for the first four days. Mini mealworms were provided at all times. After about four days the flies were reduced as the birds consumed more and more mealworms in their diet.

Tinian monarchs were fed flies and mini mealworms 4x a day for the first day. After day one the monarchs typically fed predominately on the mealworms and the flies were discontinued.

Bridled white-eyes were fed ZuPreem fruit-blend flavor M premium bird diet, papaya and mango sprinkled with Nectar Plus powder, and mini mealworms.

The Mini mealworms were gut loaded with Repashy Superload Insect Gutload formula. This formula worked very well as the mealworms stayed healthy and were very active when fed to the birds even after 7 days in the formula.

Table 3. AM weights and %weight changes over time

[illegible]

Weight management of flycatchers:

The Rufous fantails and Tinian monarchs were weighed first thing in the morning prior to feeding and then again at 1600hrs prior to their last feeding. (Table 3.)

The Rufous fantails were fed flies as well as mini mealworms. The fantails fed predominately on flies for the first four days until they acclimated to mealworms. For the four birds that were returned to captive programs they all gained weight from their first AM weight with an average weight gain of 10.2% . (range 7.7% - 15.1%).

The Tinian monarchs took to the mealworms readily and only required minimal flies on the first day. The monarchs were checked four times a day and given additional mealworms as needed. The four birds that were returned to captive programs had gained an average of 5.65% from their first AM weight. (range 0 – 14.3%)

Sexing of birds:

An attempt was made to have the Tinian monarchs and Rufous fantails sexed prior to departure to ensure that we had the sex ratios needed for captive programs. Sexing kits from Avian Biotech International were provided by Houston zoo and were used to collect the needed feather samples. Duplicate samples were collected just in case we had problems with their shipment back to the US for processing. To expedite the shipment of the samples back to the US, the samples were flown to Saipan and taken to Fedex where they were shipped to Avian Biotech International in Florida. The samples departed Saipan on 29 June. The samples made it to Memphis on 2 July where they then got held up in customs. They were not released until 23 July after new customs forms had to be resubmitted. Sexing results were not available to staff prior to shipment so we ended up picking birds based on size and health status.

Transport back to AZA Zoos.

The transport of birds from CNMI to Guam has become difficult since Freedom Air has gone bankrupt and has closed down most of its operation. Cape Air refuses to transport animals so the only option at this time is Star Marianas. We contacted Star Marianas and we were able to charter a plane for \$1500 to fly birds and three crewmembers from Tinian to Guam. The logistics of coordinating the closing up of our field operation on Tinian was quite challenging. We decided that it would be best for the birds if we departed from Tinian instead of transporting the birds back to Saipan and leaving from there. Our flight departing Guam for Honolulu was scheduled for 11 July at 0630 hrs. To meet this flight we needed to have the birds brought to Guam on 10 July so they could be prepped and ready for the early morning flight. All of the birds were loaded into their shipping crates on 8 July. (Table 4)

The flycatchers were placed singly into 2 four-compartment shipping boxes. We use 4 four-compartment shipping boxes for the white-eyes as well. This required that we place 2-3 white-eyes per compartment.

To complete all of our tasks needed so we could depart Tinian we needed to clean and pack up all of our equipment and have it at SN5 shipping company by the afternoon of 8 July. This would allow our equipment to make the early morning shipment on 9 July to Saipan. We then had to fly to Saipan to pick up our equipment at SN5 and then take it to CNMI Fish and Wildlife office to store our equipment in our storage container.

Table 4. Work Schedule for MAC 2014b: 25Jun- 11Jul

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T						
	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	1-Jul	2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul						
arrive Guam		x																										
arrive Saipan		x																										
equipment to barge			x																									
fly to Tinian			x																									
set up bird room				x																								
set up flies			x																									
trap birds					x	x	x	x	x	x	x	x	x	x														
quarantine Honolulu birds									1	2	3	4	5	6	7													
ship feather samples									x																			
load birds into crates															x													
ship equipment back to Saipan															x													
fly to Saipan to store equipment																x												
store equipment in container																x												
fly to guam with birds																	x											
ship bird to Honolulu																		x										
overnight than ship to Houston																												
Peter																												
Hannah																												
Erica																												
Jimmy																												

■ Guam
■ Saipan
■ Tinian

On the morning of 9 July we found one white-eye dead in the shipping box. There were a lot of feathers in the box and it was determined that it had died from aggression from the other birds. Two other compartments with white-eyes had a lot of feathers on the floor indicating that they to had been fighting. It was decided that we would needed to remove all of the white-eyes from the 4-compartment boxes and place them singly back into their own compartments. Since we were on our way to Saipan to place all of our equipment back into our storage container we decided that we would pick up the 6-compartment boxes on Saipan and bring them back to Tinian so we could place the white-eyes singly into their own compartment for transport. Jimmy Breeden was left on Tinian to care for the birds and Peter Luscomb and Eric Lipanovich flew to Saipan. The equipment was picked up from SN5 and taken to back to our storage container. We picked up 5 6-compartment boxes and returned to Tinian . We then removed all of the white-eyes from their shipping boxes and placed them singly back into the 6-compartment boxes. The 4 compartment boxes had to be cleaned and taken to SN5 for shipment back to Saipan.

On 10 July all of the birds and crew members flew from Tinian to Guam. The birds were taken to the Guam Agriculture Quarantine facility and set up in a secure room. The birds were fed and watered. On 11 July all of the birds were fed and watered one last time at 0200 hrs and then taken to the airport cargo location for United Air Lines. The birds were checked in by 0400 hrs. The field team departed Guam at 0630 hrs.

Health management:

The health reviews of birds indicated that all birds were in good health. We did have 3 fatalities during this trip.

Rufous fantail: Band MAC 010-434: This bird died after two days in captivity. The capture weight of the bird was 7.1 grams. Its weight at death was 6.0 grams for a weight loss of 8.4%. The necropsy found no health issues with the birds and attributed the death due to stress and not acclimating the captive conditions.

Bridled White-eye: Band MAC 010-447. This bird had been housed with two other white-eyes with no problems. The night before it died it had been placed into the transport box with the two other birds that it had been housed with. The following morning it was found dead. There were a lot of feathers in the box indicating some aggression between birds the previous nights. The necropsy indicated that it had died from trauma from cagemates.

Bridled White-eye: MAC 010-452. This bird was found on the floor of its crate when it arrived in Honolulu. It was given fluids and perched in the box. The next morning it was found dead in the crate. The carcass was given to State of Hawaii, Department of Agriculture Veterinarian for necropsy. No results have been received.

Results:

Rufous fantails: 4 birds shipped to Honolulu Zoo

Tinian monarchs: 4 birds shipped to Memphis Zoo

Bridled White-eye: 4 birds shipped to Memphis Zoo
10 birds shipped to National Aviary
14 birds shipped to Sedgwick County Zoo

Contributors for 2014 MAC Program:

Contributors

Guam Audubon Society

Honolulu Zoo

Houston Zoo

Karen and Jeffry Lynn, Memphis, TN

Pacific Bird Conservation

Vendors mentioned in report:

Avian Biotech International 1336 Timberlane Road ~ Tallahassee, FL 32312-176
www.avianbiotech.com

Repashy Ventures, Inc.

810 Twin Oaks Valley Road, Suite 131

San Marcos, CA 92069

Toll Free: 1-855-REPASHY (737-2749)

<http://www.store.repashy.com/repashy-superfoods/retail/by-product-name-en/sup>

