

**The First Species Conservation Introduction In the Northern Mariana Islands:
Translocation of Bridled White-eyes (*Zosterops conspicillatus*) to Sarigan from
Saipan**



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PURPOSE AND RATIONALE

- CNMI DFW, USFWS, and AZA met to discuss a captive management program for CNMI's unique avifauna
- Conclusion: long-term species survival required establishment of satellite, "insurance" populations on islands in the Mariana archipelago safe from BTS
- End result: the Marianas Avifauna Conservation (MAC) Program



PURPOSE AND RATIONALE

Approach

IUCN endorsed conservation tools:

Conservation Introduction – an attempt to establish a species, for the purpose of conservation, outside its recorded distribution but within an appropriate habitat and eco-geographical area.

via

Translocation – a deliberate and mediated movement of wild individuals or populations from one area with free release in another



METHODS, MATERIALS & RESULTS

Study Site: Sarigan

- An uninhabited, extinct volcano 95 nautical miles north of Saipan
- Approximately 500 ha (5 km²) in area, 549 meters at highest elevation
- 45% (223 ha) of Sarigan is covered by forest
 - ~34% to 40% (75-90 ha) native forest
 - ~60% (133 ha) old coconut or agro forest



METHODS, MATERIALS & RESULTS

Pre-Translocation

22-24 April

- 77 Bridled White-eyes captured in the Marpi area of Saipan
- Marked with numbered aluminum leg bands
- Assessed for any health issues
- The first 20 white-eyes were used to conduct a snail consumption study



METHODS, MATERIALS & RESULTS

Pre-Translocation

Snail Consumption Study

26 & 27 April

Reason

- Concern about possible impact of Bridled White-eyes on *Partula gibba* on Sarigan
- The only island in the archipelago that sustains strong populations of the species



METHODS, MATERIALS & RESULTS

Pre-Translocation

Snail Consumption Study

26 & 27 April

Question

- Will Bridled White-eyes eat snails?
- Earlier assessment of Sarigan indicated a plentiful supply of fruit and insects



Zosterornis gibba

USFWS/Dave Hopper

METHODS, MATERIALS & RESULTS

Pre-Translocation

Snail Consumption Study

26 & 27 April

Question

- Will Bridled White-eyes eat snails?
- Earlier assessment of Sarigan indicated a plentiful supply of fruit and insects
- Question 2 – If food stressed, will Bridled White-eyes eat snails?



METHODS, MATERIALS & RESULTS

Pre-Translocation

Snail Consumption Study

26 & 27 April

Design

- Two experimental groups (#1 & #2) of 10 birds each
- Each group = 5 samples of 2 birds
- Group #1: maintained daily on a normal captive diet regimen during the course of the experiment
- Group #2: subjected to a daily period of reduced food availability
- Planned duration = 4 days; cancelled after 2 days



METHODS, MATERIALS & RESULTS

Pre-Translocation

Snail Consumption Study

26 & 27 April

Design

- Two snail size classes: small (1-4 mm) and large (>4-8 mm)
- Species of snail used: *Partula gibba*, *Succinea* sp., and *Elasmius* sp., collected from Sarigan and Rota
- Each sample of both study groups were presented with 4 snails of each size for a period of 3 hours



METHODS, MATERIALS & RESULTS

Pre-Translocation

Snail Consumption Study

26 & 27 April

Results

- Study Group #1 (regular captive diet) consumed no snails
- Study Group #2 (food deprived) did eat snails
 - Mean snails consumed/sample – large = 3.6 ($n = 18$); small = 4.0 ($n = 20$)
 - Mean snails consumed/sample – T1 = 3.0 ($n = 15$); T2 = 4.6 ($n = 23$)

SG	Sample No.	T1; 26 April (L/S)	T2; 27 April (L/S)
#1	1	0/0	0/0
#1	2	0/0	0/0
#1	3	0/0	0/0
#1	4	0/0	0/0
#1	5	0/0	0/0
#2	1	4/3	2/0
#2	2	0/0	4/4
#2	3	0/1	4/4
#2	4	3/4	1/4
#2	5	0/0	-

METHODS, MATERIALS & RESULTS

Pre-Translocation

Conference Call: UOG, USFWS, DFW

29 April

Decision

- USFWS – The project could proceed, because:
 - *Partula gibba* not currently listed
 - Section 7 approval previously granted by USFWS
- USFWS – contact Bryan Clarke (U. of Nottingham) to determine the significance of Partulids on Sarigan
- No significance = no mitigation



METHODS, MATERIALS & RESULTS

Pre-Translocation

Conference Call: UOG, USFWS, DFW

29 April

Decision

- Post-translocation mitigation if Sarigan Partulids deemed significant:
 - Initiate captive breeding program for Sarigan Partulids
 - Monitor Sarigan Partulids post-translocation
 - Remove white-eyes if snail population declines



METHODS, MATERIALS & RESULTS

Pre-Translocation

Preparation – 1 May

- Of 77 white-eyes originally captured, 2 died of inanition
- Remainder were assessed and the 50 most robust selected for translocation
- Mean mass = 6.6 grams (range = 5.3-7.6 grams [$n = 75$])
- All birds taken to Sarigan color banded red



METHODS, MATERIALS & RESULTS

Pre-Translocation

Preparation – 1 May

- “Rule of Thumb” – transmitter weight no more than 3% of bird’s body mass
- 0.35 gram transmitters chosen based on 60 Bridled White-eyes captured in 2006 (mean = 7.6 grams; range = 6.5-9.5 grams)
- Mean in 2008 = 6.6 grams; 1 gram less than expected



METHODS, MATERIALS & RESULTS

Pre-Translocation

Preparation – 1 May

- Revised “Rule of Thumb” – transmitter weight no more than 4% of bird’s body mass
- Minimum acceptable weight for tagging set at 7 grams
- 15 white-eyes radio tagged
- Radio marked birds banded with blue in addition to red



METHODS, MATERIALS & RESULTS

Pre-Translocation

Preparation – 2 May

- Bridled White-eyes placed in 6 specially designed transport boxes
- Transmitters had been pulled from four birds overnight
- Two DFW biologists take shed transmitters and fly to Sarigan to set up camp and prepare release site



METHODS, MATERIALS & RESULTS

Translocation

Execution – 3 May

- Transport boxes delivered to *Americopters* and loaded onto helicopter
- Shortly before 07:00 the aircraft departed Saipan for Sarigan with white-eyes and USGS Wildlife Vet Thierry Work



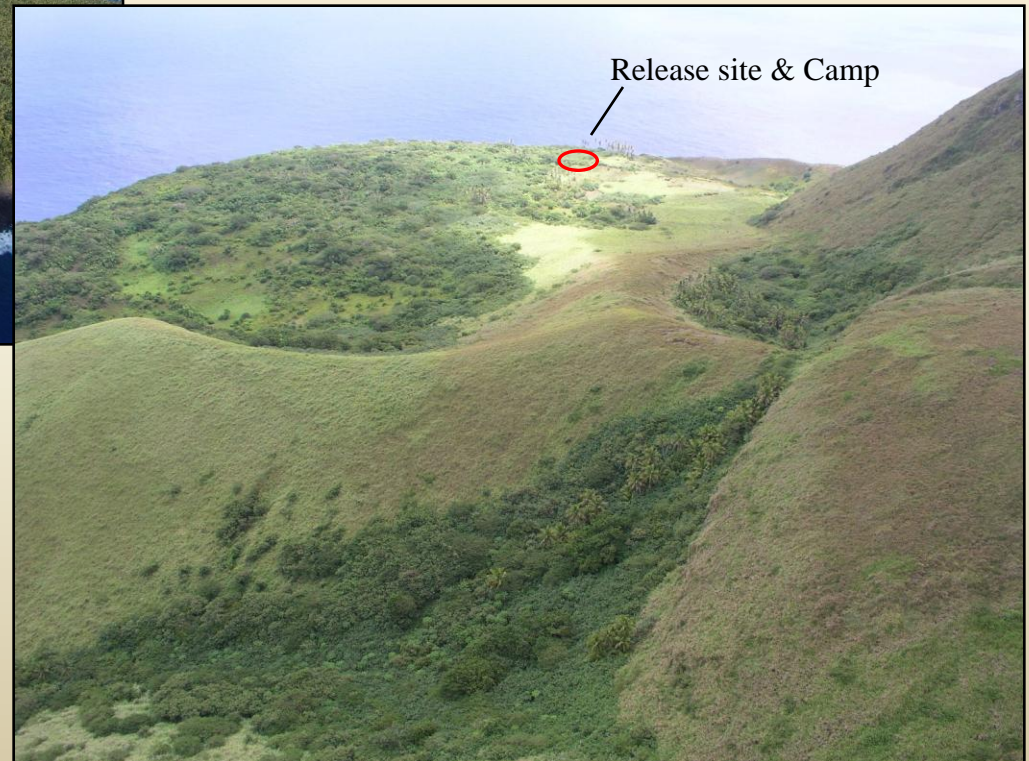
METHODS, MATERIALS & RESULTS

Translocation



METHODS, MATERIALS & RESULTS

Translocation



METHODS, MATERIALS & RESULTS

Translocation

Execution – 3 May

- At approximately 08:15 the helicopter arrived at Sarigan
- The aircraft was met by DFW biologists and the transport boxes were quickly carried to the release site



METHODS, MATERIALS & RESULTS

Translocation

Execution – 3 May

- Release site established in a stand of native forest near the main camp
- Awaiting the white-eyes were three specially designed field release cages



METHODS, MATERIALS & RESULTS

Translocation

Execution – 3 May

- White-eyes were transferred to the release cages – radio marked birds first
- Several transmitters had been pulled from birds – reattached and birds released.
- One transmitter determine faulty



METHODS, MATERIALS & RESULTS

Translocation

Release – 3 May

- Remaining white-eyes transferred to release cages for observation
- When birds appeared to be settled and acclimated, cages were opened and they were flushed out



METHODS, MATERIALS & RESULTS

Post-Translocation Monitoring

3 – 11 May

- Introduced white-eyes were monitored via ground-based radio telemetry by DFW biologists.
- Tentative purpose of telemetry:
 - Determine causes of mortality
 - Gain a feel for the overall movement of white-eyes
 - Determine habitat or cover type preferences



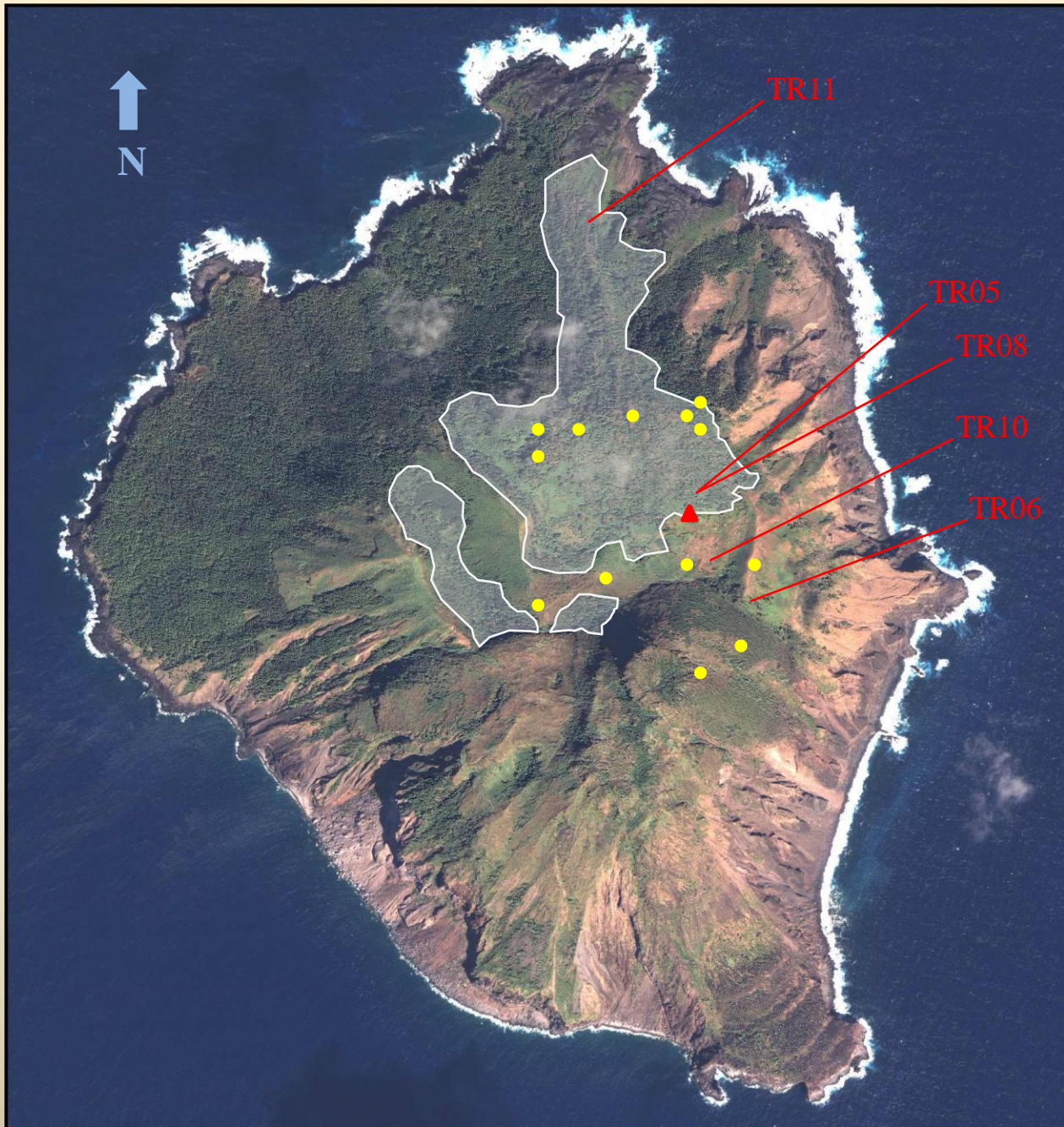
METHODS, MATERIALS & RESULTS

Post-Translocation Monitoring

3 – 11 May

- White-eyes were tracked from 14 receiver sites established over 10 days of telemetry
- Bi-angulation/triangulation was generally not possible due to terrain
- Transmitters determined stationary for several days were found and retrieved





↑
N

TR11

TR05

TR08

TR10

TR06

METHODS, MATERIALS & RESULTS

Post-Translocation Monitoring

3 – 11 May

- Transmitters recovered between 4 and 8 days post release – no evidence of mortality
- Although detected post-release (range = 1–3 days) the fate of 5 white-eyes was unknown
- Remaining 4 birds were never detected; signal for 1 exhibited strong interference



METHODS, MATERIALS & RESULTS

Post-Translocation Monitoring

10 & 12 May

- 10 May: searches for Bridled White-eyes in suitable cover on upper plateau – effort yielded not results
- 12 May: visual observations of foraging white-eyes near release site
 - 10-15 birds observed in mid to upper canopy and low, thick vegetation
 - Shared foraging areas with Micronesian Honeyeaters



METHODS, MATERIALS & RESULTS

Assessment of Success

23 March 2009

- Bridled White-eyes located in native forest north of the release site
- At least 2 banded and 6-10 unbanded individuals were observed
- One recently used Bridled White-eye nest located



ACKNOWLEDGEMENTS

- The AZA provided all funds for field collection of birds
- USFWS provided funds (via both WR and SW Grants) for translocation and monitoring.
- Curt Kessler, USFWS, covered logistics and expenses of delivering all supplies to Sarigan.
- Nate Hawley, USFWS, gave AZA full access to Saipan BTS lab facilities
- Gayle Martin, DFW, collected snails
- Laura Williams & Sylvan Igisomar, DFW

