Wildlife Restoration Grant Program
Interim Performance Report

MICRONESIAN MEGAPODE AND NIGHTINGALE REED-WARBLER SURVEYS IN MARPI CONSERVATION AREAS
F21AF03865

Submitted by
The Commonwealth of the Northern Mariana Islands
Department of Lands and Natural Resources
Division of Fish and Wildlife
Manny Pangelinan, Director

Period Covered: October 01, 2021 – September 30, 2022

INTERIM PERFORMANCE REPORT FISCAL YEAR 2022
Pittman and Robertson Wildlife Restoration

Commonwealth of the Northern Mariana Islands
Division of Fish and Wildlife
Department of Lands and Natural Resources

Prepared By:
Emilie Kohler, Wildlife Biologist

Reviewed By:
Steve Mullin, Wildlife Section Supervisor

Approved by:

Manuel M. Pangelinan
Director, Division of Fish and Wildlife

12/2/22
Date

Annual Performance Report

1. **State:** Commonwealth of the Northern Mariana Islands

   Federal Grant Identifier: F21AF03865-00 (Interim performance report)

   Grant Name: Micronesian Megapode and Nightingale Reed-warbler Surveys in Marpi Conservation Areas

   Project Name: Micronesian Megapode and Nightingale Reed-warbler Surveys in Marpi Conservation Areas

2. **Report Period**: October 1, 2021 through September 30, 2022

3. **Location of Work**: Saipan, Commonwealth of the Northern Mariana Islands

4. **Costs**:

SOURCE	BUDGETED	ESTIMATED COST
Federal:	$ [redacted]	$ [redacted]
State:	0	0
Other:	0	0
Total Federal:	$ [redacted]	$ [redacted]
Total Match:	0	0
TOTAL PROJECT:	$ [redacted]	$ [redacted]

5. **Objectives and Target Activities:**

   1. Conduct 1 investigation in three Marpi conservation areas by September 30, 2022. (**TRACS Strategy**: Research, Survey, Data Collection, and Analysis; **Activity Tag 1**: Fish and wildlife species data acquisition and analysis; **Unit of Measure**: 1 investigation; **Target Species**: *Megapodius laperouse; Acrocephalus luscinia*)

   2. Conduct 1 investigation in three Marpi conservation areas by September 30, 2022. (**TRACS Strategy**: Research, Survey, Data Collection, and Analysis; **Activity Tag 1**: Fish and wildlife species data acquisition and analysis; **Unit of Measure**: 1 investigation; **Target Species**: *Megapodius laperouse*)

   3. Conduct 1 investigation in three Marpi conservation areas by September 30, 2022. (**TRACS Strategy**: Research, Survey, Data Collection, and Analysis; **Activity Tag 1**: Habitat data acquisition and analysis; **Unit of Measure**: 1 investigation; **Target Habitat**: *Tropical Forest & Woodland; Tropical Grassland, Savanna & Shrubland*)

6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.

The CNMI State Wildlife Action Plan prioritizes implementing habitat conservation and management for areas with Micronesian Megapodes (sasangat, *Megapodius laperouse laperouse*) and Nightingale Reed-warblers (ga' ga' karisu, *Acrocephalus luscinia*). The Nightingale Reed-warbler in particular has been a focal species of DFW research efforts over the past several years and will continue to be so. This study continues the work of past monitoring efforts in the Saipan Upland Mitigation Bank (SUMB) for Nightingale Reed-warblers and tests a novel monitoring technique for Micronesian Megapodes that can be used to detect this cryptic species, with implications for monitoring it in remote locations. The SUMB is part of an offsite mitigation agreement between the federal government and the CNMI government to allow for unavoidable 'take' (harassment) of Nightingale Reed-warblers due to development projects. Regular monitoring of reed-warbler abundance in the SUMB is critical to upholding the mitigation agreement and meeting endangered species recovery goals.

7. Accounting of Accomplishments:

Objective 1: Conduct 1 investigation in three Marpi conservation areas by September 30, 2022.

Delays to hiring temporary staff to clear trails prevented avian surveys from taking place in March 2022 as originally proposed. DFW staff began clearing trails to historic Saipan Upland Mitigation Bank area survey stations (Figure 1) and new survey stations in the Micronesian Megapode Conservation Area and Nightingale Reed-warbler Conservation Area (Figures 2) in late-May 2022. Staff were able to find the historic rebar station markers or old stations flags at over half of the stations. Avian surveys began on schedule in September 2022 using the Variable Circular Plot (VCP) method (Amar et al. 2008). All birds actively using the area were counted visually or aurally within five-minute period and the lateral distance to each detection was estimated (Reynolds et al. 1980). A compass bearing and a GPS point were taken when ESA listed species were detected during the survey or opportunistically outside of the survey period. Birds flushed while approaching a station are recorded using the distance from the station to where they were first observed as the detection distance (Reynolds et al 1980). Prior to the count at each station, the date, station number, time, the observer's initials, and weather conditions are documented. Surveys were conducted from sunrise until 10:30 hours and all 89 surveys were completed within 4 weeks. The second set of avian surveys will take place in March 2022 and the data will be analyzed to produce density estimates and update population trends for Nightingale Reed-warblers, Micronesian Megapodes, and other forest birds.

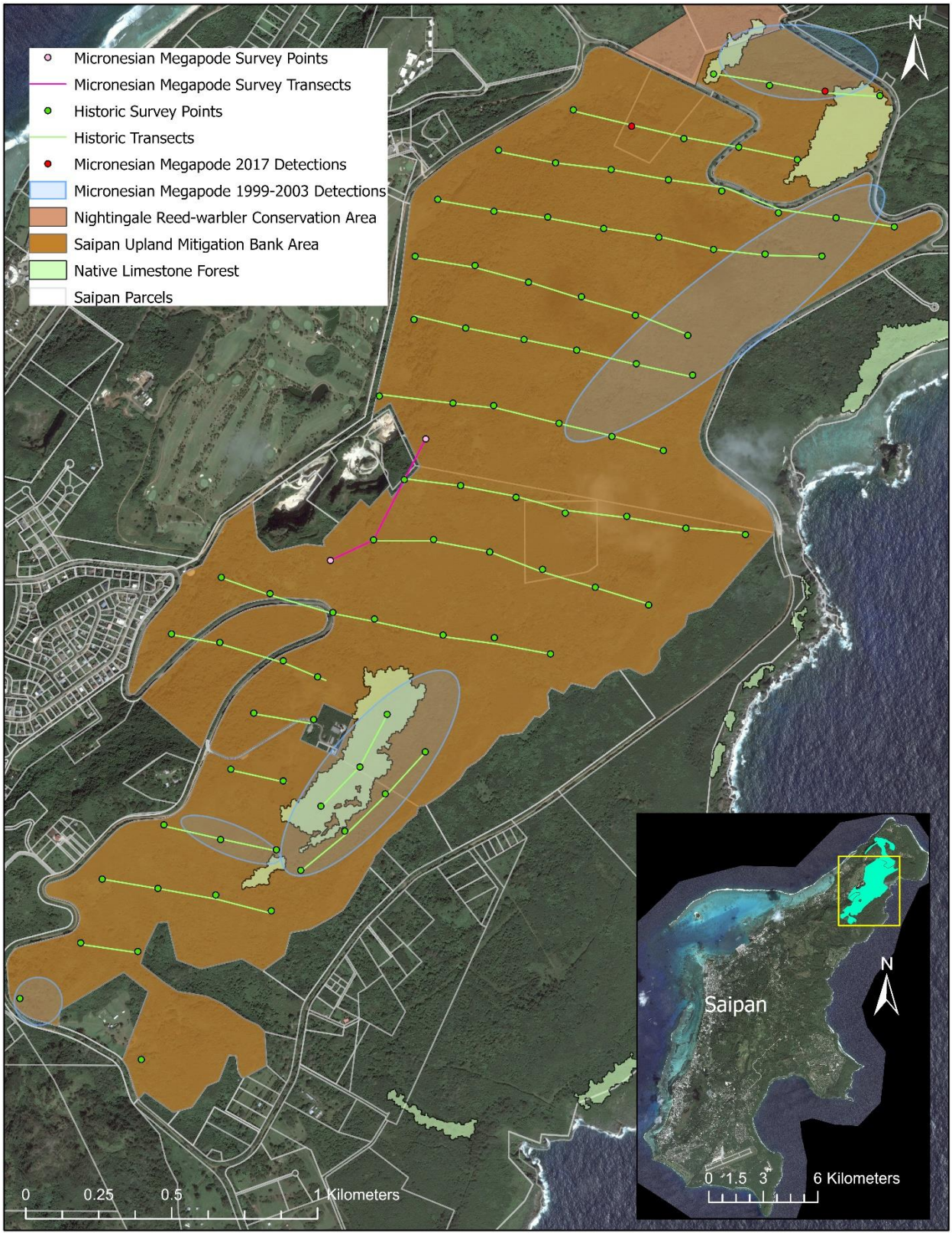

Figure 1. Avian VCP and vegetation survey points in the Marpi conservation areas

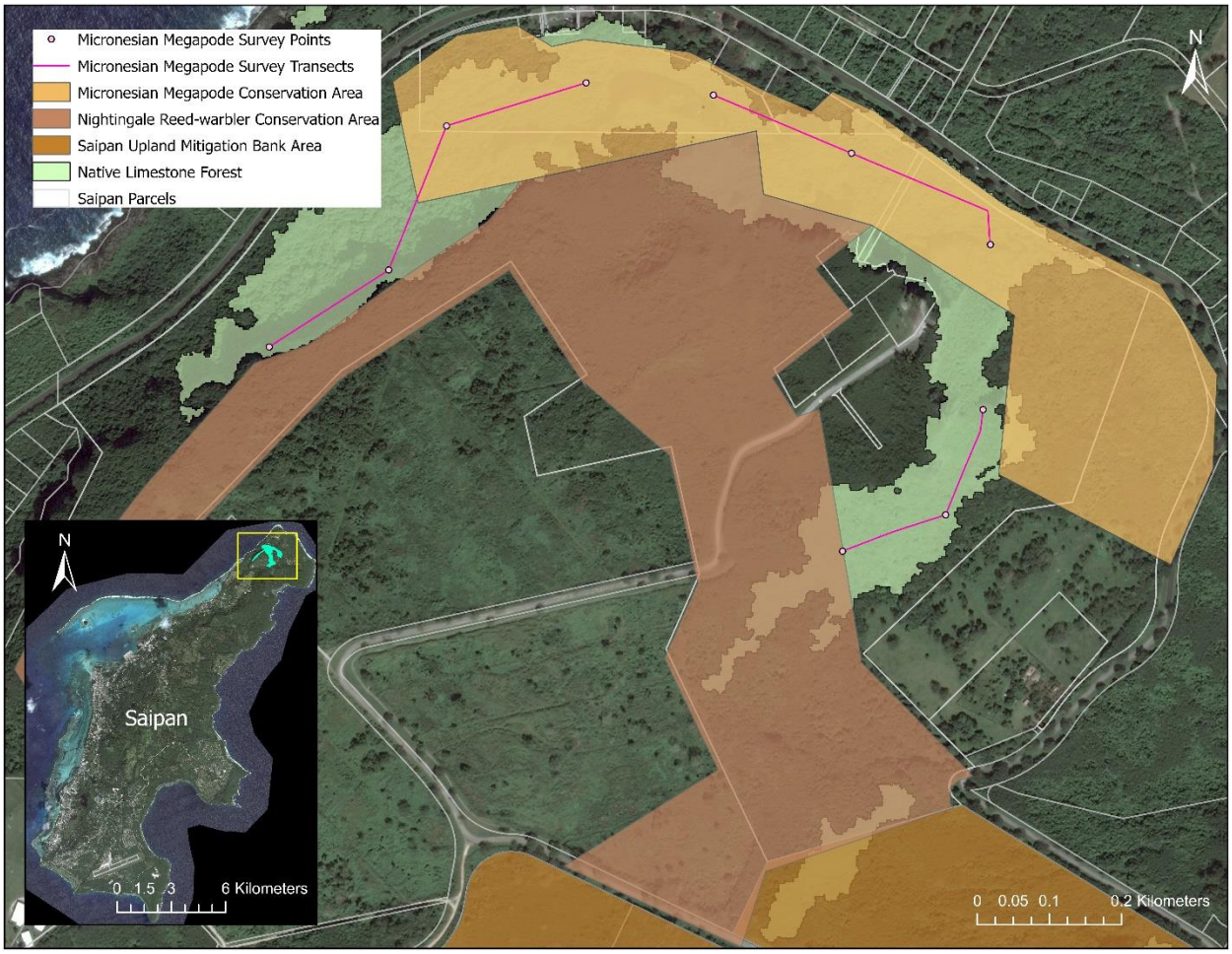

Figure 2. Camera trap and vegetation survey points in the Marpi conservation areas

Objective 2: Conduct 1 investigation in three Marpi conservation areas by September 30, 2022.

Delays to camera equipment procurement and hiring temporary staff to clear trails prevented camera surveys from taking place in March 2022 as originally proposed. Cameras were received in April, however, expeditions to the Northern Islands in May delayed the beginning of the project. Camera trapping sites must be cleared of vegetation obstructing the camera's field of view and/or that would trigger the camera. For this reason, vegetation surveys need to be completed at a site before the cameras can be deployed. Camera traps were deployed at randomly selected avian survey stations starting in July 2022. The camera's location within the plot was selected based on the open field of view. Locations that appeared to be along a path used by animals were preferred. One camera per site was secured at megapode height, 25-cm off the ground to the bases of a tree and programmed to operate 24 hours per day (Pangua-Ada and Brodie 2019). Cameras were checked two weeks later to ensure they were functioning properly. Cameras will continue to be checked regularly at 8-12 week intervals until they are retrieved in March 2023. A preliminary photo review of ~25,000 photos at six stations have resulted in two Micronesian Megapode detections at one station (Figure 3). Other species detected by the cameras include monitor lizards (*Varanus indicus*), hermit

crabs (*Coenobita spp*.), and coconut crabs (*Birgus latro*). Non-native species detected include Philippine deer (*Rusa marianna*), Philippine Collared-Dove (*Streptopelia dusumieri*), rats (*Rattus sp*.), shrews (*Suncus murinus*), and humans. Many feral animals including cows, pigs (*Sus scrofa*), dogs, cats, and red jungle fowl were also detected (Figure 4).

Figure 3. Micronesian Megapode detection on a camera trap in the Saipan Upland Mitigation Bank area.

Figure 4. Four feral cows detected on a camera trap in the Saipan Upland Mitigation Bank area.

Objective 3: Conduct 1 investigation in three Marpi conservation areas by September 30, 2022.

Delays to hiring temporary staff to clear trails prevented vegetation surveys from taking place in April 2022 as originally proposed. Vegetation surveys began in June 2022 and 44 stations were completed by the end of FY 2022. Vegetation surveys will continue into early FY 2023 until they are completed at each station.

Literature Cited

Amar, A., Amidon, F., Arroyo, B., Esselstyn, J. A., & Marshall, A. P. 2008. Population trends of the forest bird community on the Pacific island of Rota, Mariana Islands. The Condor, 110(3), 421-427.

Pangau-Adam, M. Z., & Brodie, J. F. 2019. Threats to the populations of two endemic brushturkey species in Indonesian New Guinea. Journal of Asia-Pacific Biodiversity, 12(4), 488-492.

Reynolds, R. T.; Scott, J. M.; Nussbaum, R. A. 1980. A variable circular-plot method for estimating bird numbers. The Condor. 82(3): 309-313.

8. Project outputs and outcomes:

Only preliminary data was available at the time of this interim report.

9. Evaluation of project implementation:

Preliminary detections of megapodes indicates camera traps may be an effective long-term remote monitoring tool. Battery life of the cameras appears to be the limiting factor rather than card storage space. Preliminary camera checks indicate NiMH batteries may be suitable for powering the cameras up to 6 months.

The project has deviated from the planned timeline and will need to be amended/extended to be able to include a third avian sampling period in September 2023. Once the temporary staff began cutting trails, the project timeline progressed according to plan.

10. Project Staff: Emilie Kohler, Amanda Santos, Ellie Roark, Lee Roy Sablan, Chicko Arurang

11. Name, title, phone number, and e-mail address of person compiling this report:

Emilie Kohler, Wildlife Biologist
CNMI Division of Fish and Wildlife
Dept. of Lands and Natural Resources
670-664-6032
kohler.dfw@gmail.com