

**JOB PROGRESS REPORT
RESEARCH PROJECT SEGMENT**

STATE: Territory of Guam

PROJECT NO.: W-1R-8
SUBPROJECT NO.: W-4
STUDY NO.: 1
JOB NO.: NO.: 3

JOB TITLE: Survey for Island swiftlet nesting caves.

PERIOD COVERED: October 1, 1999 to September 30, 2000

SUMMARY

A census of Guam Island swiftlets (*Aerodramus bartschi*) indicated that the population at Mahlac Cave has increased to between 700-800 birds in FY00. Counts at other colonies found 58 birds at Fachi Cave and 8 birds at Firebreak 3 (Maemong) Cave. Brown treesnake (BTS) trapping at Mahlac Cave continued until December. In October, the U.S. Department of Agriculture-Wildlife Services (USDA-WS) initiated a snake trapping experiment at Firebreak 3 Cave.

BACKGROUND

Predation by BTS is the major factor in the decline of most of Guam's native bird species during the last few decades (Savidge 1987, Conry 1988, Engbring and Fritts 1988). Census data from a variety of sources have documented the extirpations of 8 bird species. In addition, Division of Aquatic and Wildlife Resources (DAWR), reported that 4 others have undergone severe population decreases, both in terms of overall numbers and geographic range (DAWR 1963-1999, Engbring and Ramsey 1984, Wiles et al. 1995).

Historically, Island swiftlets were found in caves throughout Guam (Baker 1951). Currently, they occur primarily in one large colony on Naval Ordnance Annex (NOA). Three much smaller colonies are also known and occur at two locations on NOA and in the Lumuna district of Yigo (DAWR 1987-1999, Wiles et al. 1995). A recovery plan has been written for this species (USFWS 1992).

OBJECTIVES

- 1) To survey Island swiftlets in their remaining range on Guam, primarily at NOA. Emphasis is on finding caves with nesting colonies of them.

- 2) Evaluation of predation by BTS (USFWS 1992).

PROCEDURES

Monthly visits to Mahlac Cave on NOA were made to monitor the Island swiftlet colony. During survey counts, three (3) observers (2 at the north entrance and 1 at the south entrance) sit at both entrances of the cave for a period of 1-2 h before dark. We record the total numbers of birds flying in and out over a ten (10) minute period. The total number of swiftlets inhabiting the cave was determined by subtracting the number of departures from the number of arrivals and by adding the number of birds estimated to be in the cave at the start of the count [(#Depart - #Arrive) + #Cave]. During all visits, observers entered the cave for ~ 1 h (prior to any counts) to record numbers of swiftlet nestlings. Nests were viewed from a slightly elevated position off to the side of the cave rather than by using a mirror to look inside the nests in order to avoid disturbing nesting birds,. The cave floor was searched and cleaned each month of eggshell fragments and whole eggs that had fallen in the guano from nests overhead.

RESULTS

Mahlac Cave

Three Island swiftlet censuses at this colony were attempted in FY00. A swiftlet census was conducted on 16 and 23 November 1999 recording 1,474 and 757 birds. A third census conducted on 11 July 2000 was not a reliable count. We estimate the Island swiftlet population at approximately 700-800.

Reproductive activity in the colony continued to be monitored in FY00. Nesting activity generally agreed with observations from past fiscal years (DAWR 1987-1999).

Snake trapping for BTS continued from FY99-00. A total of 7 BTS were collected from 12 traps placed around the entrance of the cave.

Table 1. Reproductive activity of Island swiftlets for Mahac Cave in FY00. Table headings are symbolized as follows: - = no data collected; Φ = number of swiftlet whole eggs found on cave floor; κ = number of swiftlet egg fragments found on cave floor; θ = number of swiftlet nestlings heard; ω = number of swiftlet eggs seen; ψ = number of swiftlet nestlings seen.

Date	F	k	q	w	sm	y med	lg
5 Oct 99	2	10	4-6	1	4	13	11
1 Nov 99	1	11	4-5	0	4	5	9
16 Nov 99	-	-	2-4	1	2	4	6
22 Nov 99	-	-	-	1	1	4	8
29 Nov 99	2	3	4+	1	2	2	9
6 Dec 99	-	-	2+	1	1	4	4

13 Dec 99	-	-	1	1	0	3	2
21 Dec 99	-	-	1	2	1	0	4
28 Dec 99	2	7	3-4	2	1	0	3
4 Jan 00	-	-	2-3	1	2	2	1
12 Jan 00	-	-	4-5	0	5	3	0
19 Jan 00	-	-	4-5	2	3	3	2
26 Jan 00	-	-	-	1	1	6	2
1 Feb 00	7	22	4-5	4	3	5	4
8 Feb 00	-	-	-	6	4	2-3	6
15 Feb 00	-	-	-	5	6	6	5
22 Feb 00	-	-	-	5	4	10	5
7 Mar 00	9	25	4+	4	8	3	12
14 Mar 00	-	-	-	7	5	7	13
21 Mar 00	-	-	-	9	8	10	8-9
28 Mar 00	13	16	3-4	4	6	9	8
4 Apr 00	-	-	-	5	7	9	9
11 Apr 00	-	-	-	3	1	10	14
18 Apr 00	-	-	-	4	5	7	10
25 Apr 00	-	-	-	4	1	7	13
1 May 00	13-	31	4-6	6-9	7	6	12
18 May 00	-	-	-	11	7	8	10

Fachi Cave

A count of the Island swiftlet colony in Fachi Cave was conducted on 23 December 1999 recording 58 birds. This is an increase of 24 birds from the previous count in January 1998 (DAWR 1998).

Firebreak 3 Cave (a.k.a. Maemong Cave)

Island swiftlets continued to use this cave throughout FY00, 19 months after they were rediscovered at this site. Eight birds roosted in the cave on 10 May 2000; 3 occupied nests and 1 small chick were also recorded. The USDA-WS began a snake trapping experiment inside the cave in October 1999. This experiment is intended to provide data that may eventually lead to a management program to modify the ceiling in order to prevent BTS predation.

Lumuna, Yigo

No visits were made to this area in FY00.

Mt. Sasalaguan, Merizo

No Island swiftlets were sighted during a 70-min observation period from the top of Mt. Sasalaguan on 10 February 2000. It is quite likely that the species no longer lives in this area.

RECOMMENDATIONS

The following recommendations for Island swiftlets were made in FY00:

- 1) Develop and implement methods for controlling predation by BTS in nesting caves.
- 2) Continue monthly cave censuses and efforts to assess population change and reproductive activity.
- 3) Snake-proof Mahlac Cave.
- 4) Study foraging behavior and seasonal variation in foraging ranges.
- 5) Interview farmers in the Talofofu River valley about the use of pesticides on their farms.
- 6) Continue to search for occupied caves.

PROGRAM COST

The estimated cost of the project is \$ 6,000.

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