

**JOB PROGRESS REPORT
RESEARCH PROJECT SEGMENT**

STATE: Territory of Guam

PROJECT NO.: W-1R-8
SUBPROJECT NO.: W-4
STUDY NO.: 1
JOB NO.: 2

JOB TITLE: Surveys for Mariana Crows and Their Nest Sites on Guam and Rota
(1460, 1470)

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

SUMMARY

Only seven Mariana crows, *Corvus kubaryi*, remain in the Guam population, based on locations of known individuals. This number includes two Rota female crows released on Guam in FY97. No nests were recorded this breeding season on Guam. In contrast, 25 nests were found on Rota.

BACKGROUND

The Mariana crow is found only on Guam and Rota and is the only species of crow in Micronesia. Though once found throughout Guam, surveys in 1981 estimated 380 crows (Engbring and Ramsey 1984) were present in northern Guam. This number was much lower than the estimate of 1,300 crows on Rota in 1982 (Engbring et al. 1986). By 1986, Michael (1987) reported that only 100 crows remained on Guam. By then, most of Guam's native forest birds had disappeared as a result of brown treesnake (BTS) predation (Savidge 1987, Conry 1988, Engbring and Fritts 1988). In 1990, the Division of Aquatic and Wildlife Resources (DAWR) began annual surveys using tape-playback of crow calls to monitor the species' status. The initial survey found approximately 100 crows present in northern Guam. Though crow numbers had decreased since 1981, distribution remained the same (DAWR 1990).

Efforts to reverse the decline of the Mariana crow began in 1986 with attempts to protect active nest sites from BTS predation. Sheet metal sleeves and Tanglefoot[®], an adhesive resin, were placed around trunks of active nest trees to act as a snake barrier and snake trapping was begun. During the early 1990s, increased nest protection was achieved with the development of electrical barriers and effective snake trapping (DAWR 1991).

In 1996, a select committee appointed by the National Research Council (NRC) completed a review of the Mariana crow recovery program (NRC 1997). Their report compliments and reiterates conservation recommendations for crows found in the recovery plan (Beck and Savidge 1990). Included in their recommendations were that all birds being held in the National Zoo and Houston Zoological Garden be released on

Guam. In 1997, the crow population on Guam was augmented by the release of eight captive crows (6 from the zoos and 2 from the DAWR breeding facility) into the wild in northern Guam. Currently, four of the released birds are doing well, while the remaining six are known or believed to be dead.

OBJECTIVES

- 1) To inventory Mariana crows and their nest sites.
- 2) To implement Mariana crow recovery efforts, including predator control and other reproductive enhancement efforts (Beck and Savidge 1990).

PROCEDURES

- 1) Field search in areas where Mariana crows, are known to occur.
- 2) Areas in the northern Guam were searched during the breeding season (from October through May) for crows. Active crow nests were closely monitored and appropriate measures to protect them were taken. Locations of active crow nests were mapped.
- 3) Search for active Mariana crow nests
- 4) Young Mariana crows, if found, were monitored.

RESULTS

Active Nests on Guam and Rota

No active nests were located during the FY99-00 breeding season.

In Rota, an intensive effort was expended in locating breeding Mariana crows during the FY00 breeding season. Over 936 hours were spent searching, identifying breeding pairs, and following up on nests. Twenty-five nests built by 18 breeding crow pairs were found primarily in the NE, SE, and SW portions of Rota (Table 1 and Figure 1).

Table 1. Crow nest records found during the 1999-2000 breeding season on Rota.

No.	Nest #	Pair ID	Locale Taken	Tree Species	Height of Nest	Date Found	Date Taken	Y
1	99-01	Pekngasu	Pekngasu Rota	Psychotria	16'		9/26/99	1c
2	99-02	Tatgua	Tatgua	Neisosperma	20'	9/26/99	NA	NA
3	99-03	I Batko	I Batko	Intsia	20'	10/22/99	12/9/99	1c
4	99-04	Lookout	Sanctuary Lookout	Pisonia	25'	10/26/99	10/28/99	1c
5	99-05	Pona Pt	Pona Pt.	Cyanometra	8'	10/28/99	NA	NA
6	99-06	As Dudo South	As Dudo	Intsia	25'	10/30/99	NA	NA

7	99/07	Resort	Resort area	Neisosperma	45'	10/31/99	NA	1C
8	99-08	Tatgua	Tatgua	Macaranga	25'	11/1/99	NA	NA
9	99-09	Mochong	Mochong	Neisosperma	10'	11/10/99	12/9/99	3e
10	99-10	West Duge	West Duge	Guertarda	15'	11/11/99	12/20/99	2e
11	99-11	kaan	Kaan Area-Teneto	Neisosperma	35'	11/12/99	Na	
12	99-12	Gayauyan	Gayaugan	Guertarda	35'	11/17/99	NA	1c
13	99-13	Gampapa	Gampapa	Intsia	15'	11/20/99	12/20/99	3e
14	99-14	Okgok	Okgok	Cyanometra	25'	11/22/99	12/10/99	2c
15	99-15	Swimming Hole	Swimming Hole	Intsia	23'	11/26/99	NA	
16	99-16	Taksunok	Taksunok	Pisonia	20'	11/28/99	12/20/99	3e
17	99-17	Takta	Sagua	Hernandia	25'	12/6/99	Na	
18	99-18	Kiln	Saguagaga Area	Pisonia	23'	12/9/99	12/20/99	1c
19	99-19	Pona Pt	Pona Pt.	Cyanometra	8'	12/13/99	Na	2c
20	99-20	I Batko	I Batko	Intsia	18'	1/30/00	n/a	0
21	99-21	Okgok	Okgok	Cyanometra	19'	2/1/00	n/a	0
22	99-22	Taksunok	Taksunok	Premna	24'	2/2/00	n/a	?
23	99-23	West Mochong	West Mochong	Neisosperma	8'	2/2/00	n/a	2c
24	99-24	West Duge	West Duge	Premna	16'	2/4/00	2/21/00	1c
25	99-25	Pekngasu	Pekngasu Rota	Psychotria	10'	2/10/00	n/a	?

Y = Number of eggs or chicks

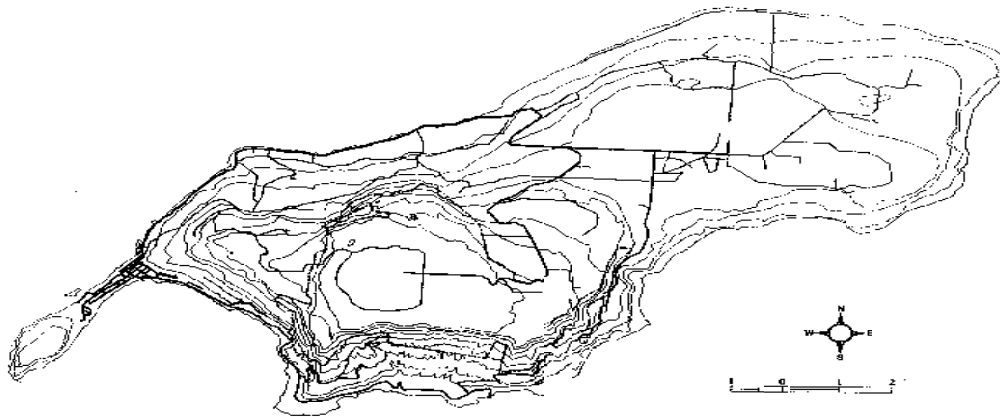


Figure 1. The location of crow nests found on Rota from Oct-Dec 1999 and Jan-Feb 2000.

Nests located on Rota included: 10 (40%), which eggs and chicks were harvested for translocation to Guam; 4 (16%) were preyed upon; 7 (28%) were abandoned; 1 (4%) accidentally died after it fell from the nest; and 3 (12%), which were not harvested, managed to fledge at least 1 chick. Of the nests that fledged young, 2 nests fledged 2 chicks and 1, a single chick.

Guam Surveys

With only a few remaining crows, playback surveys were discontinued. Information on numbers and distribution were better obtained from following the known individuals and conducting systematic and intensive searches where crows were last known to exist. Only 7 birds remain in the wild. The location of another pair remains unknown and believed to be dead. Recently, 7 crows were released into the wild in the Munitions Storage Area (MSA), Andersen Air Force Base (AAFB). Five remain alive increasing the total wild population to 12 crows (Figure 2).

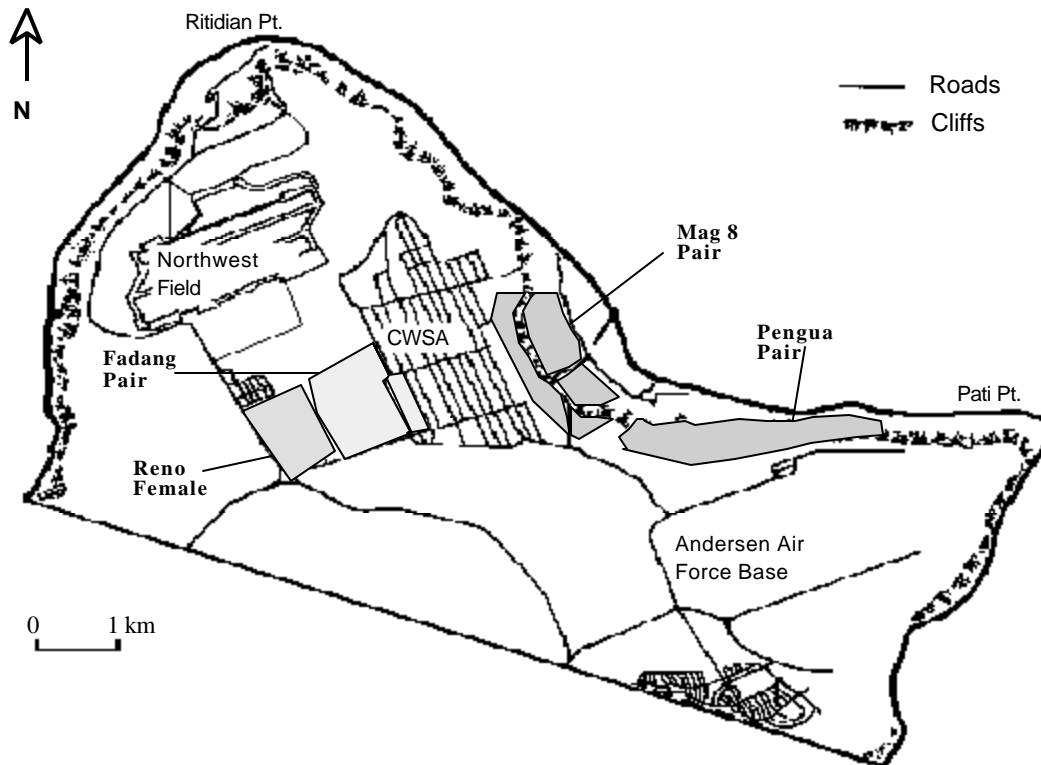


Figure 2. Locations of known crows in Northwest Field, Munitions Storage Area (CWSA), and Pati Point areas, as of September 2000. The hatched and dotted areas indicate the approximate home ranges of the crows.

RECOMMENDATIONS

- 1) Discontinue annual crow surveys.
- 2) Continue searches for active crow nests and take appropriate measures to protect these nests from snake predation.
- 3) Collect pertinent information on the locations of crow nests.
- 4) Augment the Guam crow population with birds from Rota.

PROGRAM COST

The estimated cost of the project is \$100,000.

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