

## **JOB PROGRESS REPORT RESEARCH PROJECT SEGMENT**

**STATE:** Territory of Guam

**PROJECT NO.:** W-1R-5  
**SUB-PROJECT NO.:** W-2  
**STUDY NO.:** 1  
**JOB NO.:** 2

**JOB TITLE:** Population Numbers and Distribution of Philippine Turtle-Doves (1460)

**PERIOD COVERED:** October 1, 1996 to September 30, 1997

### **SUMMARY**

Counts of Philippine turtle-doves (*Streptopelia bitorquata*) during this year's spring bird surveys were significantly different ( $p < 0.05$ ) from last year's counts. Eighteen routes recorded decreases, four recorded increases, and one recorded no changes in numbers of doves. A mean of one or more birds per station was recorded on the Northwest Field, Cross Island Road, and Cocos Island routes.

### **BACKGROUND**

The Philippine turtle-dove was introduced to Guam by the Spanish during their early colonization of the region, circa 1771 (Baker 1951) and has been regulated as a game bird since approximately 1903 (Conry 1987). Up through the early 1960s, the turtle-dove was very common and found in large numbers in both northern and southern Guam. By the late 1960s, dove populations in southern and central Guam began to decline and have since stabilized at low levels. Populations in northern Guam declined in the late 1970s and early 1980s. Turtle-doves are now found in appreciable numbers in prime dove habitat on Northwest Field, Conventional Weapons Storage Area (CWSA) and elsewhere on Andersen Air Force Base and at moderate numbers in selected areas of central and southern Guam. A large population still remains on snake-free Cocos Island. Predation by the brown tree snake (*Boiga irregularis*) is the major cause of nest loss (Conry 1988) and this introduced pest is thought to be responsible for the population decline. Because of the decline in numbers and the extremely poor nesting success, the Department of Agriculture officially closed the turtle-dove hunting season as of March 28, 1987. The season will be reopened if nesting success improves and numbers recover to a level that can support recreational hunting.

### **OBJECTIVES**

1. To determine present population levels and distribution, and monitor population trends.
2. To investigate nesting success and causes of nest failures.

## **PROCEDURES**

1. Philippine turtle-doves are surveyed once or twice monthly during roadside-counts of all birds conducted by DAWR staff in three areas of northern Guam. The results of these surveys are reported in Job W-4-1-1.
2. Philippine turtle-doves were additionally surveyed during spring bird counts conducted on 23 routes throughout the island in May. These surveys consisted of 5-minute station counts at up to 10 stations per route, with the number of birds seen or heard recorded at each station. Results are summarized as the average number of birds observed per station.

## **RESULTS**

### Spring Bird Surveys

Turtle-doves were recorded on 17 of 23 (74%) spring bird surveys conducted in 1997 (Table 1). Snake-free Cocos Island continues to have the highest count with an average of 2.70 birds detected per station. Northwest Field and Cocos Island are the only other routes averaging 1.0 bird per station. Of the 23 routes surveyed, 18 (78%) recorded decreases, 4 (17%) recorded increases, and 1 (4%) recorded no change in the numbers of birds recorded. There was a significant change in the pattern from last year's survey (Wilcoxon Signed-rank Test,  $T_S = 67.0$ ,  $Z = -1.936$ ,  $p < 0.01$ ).

## **RECOMMENDATIONS**

1. Continue spring bird surveys across Guam to monitor distribution, relative abundance and population trends of the Philippine turtle-dove.
2. Keep Philippine turtle-dove hunting season closed until nesting success improves and the population recovers.

## **PROGRAM COST**

The estimated cost of the Philippine turtle-dove project under W-1R-5 is \$15,000.

## **LITERATURE CITED**

- Baker, R.H. 1951. The avifauna of Micronesia, its origin, evolution, and distribution. University of Kansas Pub. 3(1):1-359.
- Conry, P.J. 1987. Ecology of the Philippine turtle-dove on Guam. Tech. Report No. 6. Div. Aquatic and Wildl. Res., Dep. Ag., Mangilao.
- Conry, P.J. 1988. High nest predation by brown tree snakes on Guam. Condor 90:478-482.

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Table 1. Numbers of Philippine turtle-doves recorded per count and average numbers of birds per station, as detected in spring bird surveys at various locations on Guam during May 1997. Values in the trend column are the difference between the average station count between years.

<b>Survey Location</b>	<b>No. Stations</b>	<b>No. Doves Observed</b>	<b>1997 Ave./ Station</b>	<b>1996 Ave./ Station</b>	<b>Trend in Ave. 97-96</b>
<b>NORTH SURVEYS</b>					
Tarague	10	0	0.00	0.20	-0.20
CWSA	10	9	0.90	0.50	0.40
NWF	10	12	1.20	1.0	0.20
NCTAMS	10	3	0.30	0.40	-0.10
Capitol Improvement Road	10	3	0.30	0.00	0.30
MT. Santa Rosa	10	9	0.30	0.50	-0.20
Y-Sengsong Road	10	3	0.30	0.90	-0.60
Two Lover's Point	10	2	0.20	0.30	-0.10
Andersen South	10	2	0.20	0.30	-0.10
Navy Golf Course Barrigada	10	1	0.10	0.40	-0.30
Barrigada Hill	10	0	0.0	0.40	-0.40
Toto Pipeline	8	0	0.0	0.50	-0.50
<b>SOUTH SURVEYS</b>					
Nimitz Hill	10	1	0.10	0.20	-0.10
Reserve Craft Beach Road	4	2	0.50	0.50	0.0
Orote Point	6	2	0.33	0.67	-0.37
Pulantat	10	4	0.40	0.60	-0.20
Cross Island Road	10	0	0.0	1.00	-1.00
Naval Magazine	10	1	0.10	0.40	-0.30
Umatac	10	0	0.0	0.60	-0.60
Dandan	10	1	0.10	0.00	0.10
Ija	8	2	0.25	0.88	-0.63
Merizo	8	4	0.50	0.38	-0.12
Cocos Island	10	27	2.70	1.40	-1.30