PUERTO RICAN WHIP-POOR-WILL RECOVERY PLAN

RECOVERY PLAN FOR
THE PUERTO RICAN WHIP-POOR-WILL

(*CAPRIMULGUS NOCTITHERUS*)

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I. INTRODUCTION

Description

The Puerto Rican whip-poor-will, *Caprimulgus noctitherus*, is a robin-sized (24 cm) nocturnal bird with long bristles about the bill. The fluffy plumage is mottled with dark brown, black, and gray. There is a white band across the throat and white spots at the end of the tail feathers (Kepler and Kepler 1973).

Caprimulgus noctitherus belongs to the pantropical family Caprimulgidae. All members of the family are insectivorous and most have nocturnal or crepuscular habits (Van Tyne and Berger 1971).

Though smaller in size, it is much like the U.S. mainland whip-poor-will, *C. vociferus*, but differs in its vocal behavior. The plumage of the male *C. noctitherus* is darker than in *C. vociferus*. The back has more black and chocolate colored feathers and the tail has fewer white spots than its mainland congener.

Distribution

The former distribution and abundance of the species is speculative. Kepler and Kepler (1973) reported that, in the past, the Puerto Rican whip-poor-will probably occurred throughout the limestone forests (fig. 1). According to the Keplers, the bones found by Wetmore (1919) in Morovis, the single skin collected by Streator (Cory 1889) in Bayamon and the sighting from Rio Piedras by Wetmore (1916) suggest a distribution coextensive with the moist

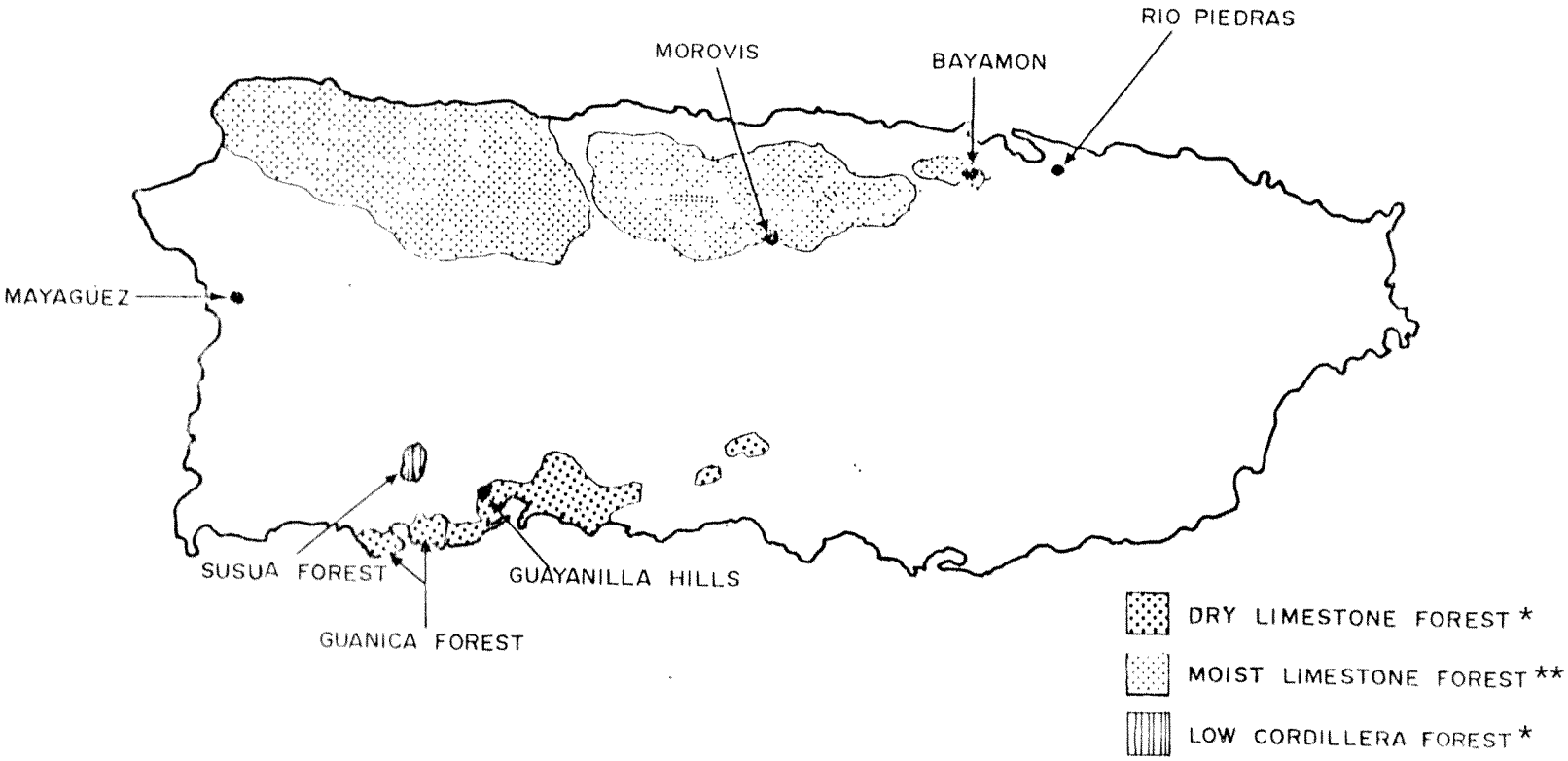

Fig. 1. Puerto Rican whip-poor-will current range(*) and probable former habitat(**) and sightings. (Map from Kepler and Kepler 1973)

limestone forests, possibly ranging south. Information in Reynard (1962) also suggests a record from Mayaguez.

A limited abundance of insects in wet forests and at higher elevations reduces the probability that the whip-poor-will could inhabit these areas as there would not be enough food to sustain a population (Kepler and Kepler 1973). Thus, its distribution was probably restricted to the lower slopes and coastal plains of the island.

The Puerto Rican whip-poor-will is now restricted to three areas in the southwestern limestone and serpentine areas: Guanica forest, the Susua forest, and the Guayanilla Hills. The greatest population density is in the Guanica Forest, where Kepler and Kepler (1973) estimated 400 breeding pairs. They estimated 100 pairs from Susua Forest and 50 pairs from the Guayanilla Hills.

All three centers of present distribution of the species are dry semideciduous forests or woodlands, with a closed tree canopy at about five to seven meters. The Guayanilla Hills, Guanica Forest, and Susua Forest are the only extensive wooded areas within the species' present range. Kepler and Kepler (1973) found that, within these broad areas, the birds nested where canopy was complete, while the related and much more common nighthawk (Chordeiles minor) nested in more open areas or even on unpaved roads.

The vegetation of the Susua Forest has not been described in detail. It is known to be similar in structure to that of Guanica Forest, but species dominance differs because of higher rainfall and a serpentine, rather than limestone, substrate (Department of Natural Resources 1976). The deciduous closed-canopy forest at Guanica has a basal area of 8 m2/ha, a stem density of 1000-2000/ha,

and consists of about 20-30 codominant species (Lugo et al. 1978). Prominent among these are Exostema caribaeum, Pisonia albida, and Bourreria succulenta. Common shrubs include Croton humilis, Eugenia foetida, and Lantana involucrata. All woodland areas have developed in sites with a definite seasonality of rainfall. Soil water deficits during the dry season (January-June) severely limit leafy canopy cover. Maximum plant cover develops at the end of the wet season, in November and December.

The limited present range of the Puerto Rican whip-poor-will, about 3,200 ha, and the expanding human population near or within its range, were important reasons for declaring the species as endangered throughout its range (Federal Register 6/4/73).

Taxonomic Position

There is disagreement as to the distinctness of the whip-poor-will from Puerto Rico. Bond (1961), Peters (1940), Danforth (1936), and Biaggi (1970) consider the Puerto Rican whip-poor-will a race of the mainland species (Caprimulgus vociferus noctitherus). However, significant differences, especially vocalization, suggest that they should be considered as distinct species. Vocalization, rather than size, constitutes a valuable criterion to distinguish between species of nocturnal birds. Songs in Caprimulgids are an important element in courtship and may serve to maintain reproductive isolation between closely related species (Kepler and Kepler 1973). The call of C. noctitherus is a "rip" sound, different from the "ripple" sound of C. vociferus. Thus, Wetmore (1919), Reynard (1962), Kepler and Kepler (1973)

and Chabert, Ortiz and Perez (1983) have considered the whip-poor-will from Puerto Rico an endemic species. This view is still accepted by the Service (Federal Register July 27, 1983) and the AOU (1983).

Breeding Biology

The breeding biology of *C. noctitherus* has not been studied in detail. Based on data from three nests, Kepler and Kepler (1973) suggested that the breeding season probably lasts from May throughout July, with peak activity in May through mid-June. Other caprimulgids have two broods each year, and the Puerto Rican whip-poor-will may also follow this pattern. The Keplers observed that *C. noctitherus* does not build a nest, but lays its eggs (usually two) on leaf litter under a bush. Preferred nest sites were under a four to six meter canopy. Eggs were never laid in open areas or clearings.

Kepler and Kepler (1973) reported that hatching occurs in 19 days asynchronously. Young usually wander from the nest by the third day and are able to fly by the 14th day. Adults do not return to the nest site after chicks have fledged (Kepler and Kepler 1973).

Feeding Biology

Limited information is available on the feeding habits (Chabert et al. 1983). Kepler and Kepler (1973) indicate that *C. noctitherus* captures insects in flight. Whip-poor-wills have regular perches from which they forage by sallying forth after insects. No other information on their feeding ecology is available.

Causes of Decline

The introduction of the mongoose (Herpestes auropunctatus) to Puerto Rico in 1877 may be the main cause of the decline of the species. Presumably, mongoose predation on C. noctitherus caused the bird's extirpation from the lowland moist limestone forest, an area having enough water to support mongooses (Reynard 1962). On other islands (Fiji, St. Croix, St. Thomas) mongooses have decimated many species of reptiles, amphibians and ground nesting birds by preying upon eggs, young and adults (Wolcott 1953; Seaman and Randall 1962; Gorman 1977). In the Virgin Islands mongooses have contributed to the endangerment of the St. Croix ground lizard (Ameiva polops), the probable extinction of the St. Croix ground snake (Alsophis sancticrucis), the near extirpation of an introduced lizard (Iguana iguana) and the bridled quail-dove (Geotrygon mystaceae), and the reduction of the population of the introduced northern bobwhite (Colinus virginianus) and other ground nesting birds (Seaman and Randall 1962). With these antecedents, the mongoose should be regarded as a major threat to the Puerto Rican whip-poor-will.

Another threat to the species could be its present restricted range, which is estimated to be approximately 3% of its former range and only 0.7% of the total land surface of the island (Kepler and Kepler 1973). The expanding human population is threatening the remaining forests available for C. noctitherus. Kepler and Kepler (1973) observed that the bird was absent form disturbed areas where vegetative cover was altered and direct human disturbance was present. Caprimulgus noctitherus was more abundant on the higher slopes of the central hills

in the Guanica Forest where elevations range from sea level to 350 meters.

Conservation Efforts

All of the conservation efforts for the species up to the present have been incidental rather than direct. The current range of *C. noctitherus* includes the Susua and Guanica State Forests. The protection of forest reserves by government laws assures minimum habitat modification in these areas. Recently the Guanica Forest was recognized as part of the international network of Biosphere Reserves by UNESCO, emphasizing its ecological importance and need for conservation.

There have been several attempts to build picnic and camping areas on the Guanica State Forest. However, the xeric condition of the forest and the hazard of fires have prevented their construction.

The species was declared endangered throughout its range in 1973 (*Federal Register* 6/4/73). Law 70 of the Commonwealth of Puerto Rico also protects all native wildlife.

II. RECOVERY

A. Recovery Objective

The natural history of the Puerto Rican whip-poor-will is poorly known. Basic data used in the preparation of most recovery plans are lacking and must be acquired. Until better information is available, the species tentatively should be considered as recovered upon attainment of a population of 600 breeding pairs in Guanica forest, 400 breeding pairs in the Guayanilla-Tallaboa area, and 200 breeding pairs in Susua forest, and assurance of long-term protection of the essential habitat needed to sustain these populations. In this plan, emphasis has been placed in obtaining basic data on the natural history of the species and on habitat protection.

B. Step Down Outline

1. Determine the status of the population

    1.1 Survey the known population for abundance

    1.2 Delineate its range

    1.3 Define possible causes of decline, potential threats, currently limiting factors

2. Determine habitat requirements

3. Protect the population

    3.1 Protect Commonwealth-owned habitat and develop management plans as needed for all areas.

    3.2 Protect essential habitat on nonpublic lands

    3.3 Curtail habitat modification through public education

4. Conduct natural history studies

   4.1. Study its reproductive biology

   4.2. Study feeding habits

5. Monitor recovery of the population

Narrative

1. Recovery of this species will require updating and refining basic knowledge of current population levels, range, and factors that are limiting population expansion.

   1.1. Since 1973 little or no new information concerning population densities of this species has surfaced. No recent survey data are available, thus present population levels are unknown. This information is needed to determine the present status of the species as well as to determine future goals and priorities for recovery.

   1.2. The present range of the species should be determined so these areas can be protected against habitat modification and disturbance.

   1.3. Possible causes of decline should be identified. Predators, competitors, parasites and diseases should be considered. Also, habitat curtailment, modification or destruction should be studied. Any other limiting factors identified under tasks 4.1 and 4.2 should also be considered in determining what is currently limiting population size.

2. The present habitat needs to be characterized in order to determine the essential and critical forest or vegetation types that should be preserved. This information also will serve to help determine additional areas where to search for the species.

3. The most feasible means should be selected to secure essential habitat in private holdings, and all controlled areas (public and private) managed and protected for optimum benefit to the whip-poor-will.

3.1. The current population should be protected, and management plans should be developed as necessary. Habitat destruction or modification within Guanica and Susua State Forests should be prevented. Also, patrolling by conservation officers should be increased or maintained, as needed. Buffer zones around critical nesting or feeding areas should be delineated. New lands around the present habitat should be protected immediately.

3.2. It is anticipated that the FWS will have a role in insuring protection of essential habitat currently in private ownership. Potential habitat protection measures such as easements, conservation agreements, regulation, zoning, land exchange, and acquisition, should all be considered in determining the most appropriate measure(s) to be implemented.

3.3. Private owners of whip-poor-will habitat should be contacted and encouraged to voluntarily protect habitat which they control.

4. To update this plan into an effective working tool, basic information is needed on the species' natural history and general ecology, including competition, territory and range size.

4.1. The reproductive biology of the species should be studied to determine if the population is increasing in numbers or not. Understanding of the breeding season, nesting activities,

clutch size, hatching period and parental care are essential for determining growth rates of the population and critical periods throughout the year when the species is most vuleraable to disturbance.

4.2 Feeding habits should be determined. The availability of food and space preference for foraging could restrict the dispersal of the species to other potential habitats. Basic prey types (e.g. large beetles, small moths, etc.) need to be known to provide for the possibility of management should food sources be a limiting factor.

5. Regular population monitoring is needed for the immediate future to assess general population status and the affects of management actions.

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Puerto Rican Whip-poor-will

Part III Implementation Schedule

General Category	Plan Task	Task Number	Priority	Task Duration	Responsible Agency			Estimated Fiscal Year Costs			Comments/Notes
					FWS						
					Region	Program	Other	FY 1	FY 2	FY 3	
R-1, 6, 9-11	Determine population status	1	2	4	4	Research FA/SE	DNR	80,000	80,000	80,000	Costs for tasks 1 and 4 are combined.
I-3	Determine habitat requirements	2	3	2	4	FA/SE	DNR	30,000	30,000	--	
M-3, O 2	Protect and manage Commonwealth forests	3.1	1	Cont	4	FA/SE	DNR	25,000	25,000	25,000	
A 1-7	Protect non-public habitat	3.2	1	2	4	FA/SE	DNR	--	--	--	
O 1	Conduct public relations program	3.3	2	Cont	4	FA/SE	DNR	20,000	20,000	20,000	
R-14	Conduct natural history studies	4	3	4	4	Research FA/SE	DNR	--	--	--	See Task 1
I/R-1	Monitor recovery	5	3	Cont	4	Research FA/SE	DNR	15,000	15,000	15,000	

KEY TO IMPLEMENTATION SCHEDULE COLUMNS 1 & 4

General Category (Column 1):

Information Gathering - I or R (research)

1. Population status
2. Habitat status
3. Habitat requirements
4. Management techniques
5. Taxonomic studies
6. Demographic studies
7. Propagation
8. Migration
9. Predation
10. Competition
11. Disease
12. Environmental contaminant
13. Reintroduction
14. Other information

Acquisition - A

1. Lease
2. Easement
3. Management agreement
4. Exchange
5. Withdrawal
6. Fee title
7. Other

Other - O

1. Information and education
2. Law enforcement
3. Regulations
4. Administration

Management - M

1. Propagation
2. Reintroduction
3. Habitat maintenance and manipulation
4. Predator and competitor control
5. Depredation control
6. Disease control
7. Other management

Priority (Column 4):

1 - Those actions absolutely necessary to prevent extinction of the species.

2 - Those actions necessary to maintain the species' current population status.

3 - All other actions necessary to provide for full recovery of the species.

IV. APPENDIX

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