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NOTES ON THE DISTRIBUTION, HABITAT AND CONSERVATION OF THE CLOUD-FOREST PYGMY-OWL (*GLAUCIDIUM NUBICOLA*) IN ECUADOR

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Notas sobre la distribución, hábitat y conservación del Mochuelo Nuboselvático (*Glaucidium nubicola*) en Ecuador.

Key words: *Glaucidium nubicola*, Cloud-forest Pygmy-Owl, distribution, habitat, conservation, Andean cloud forest, western Ecuador.

INTRODUCTION

The Cloud-forest Pygmy-Owl (*Glaucidium nubicola*), a recently described species from the Andes of western Colombia and northwestern Ecuador, is poorly known because of its secretive habits and the fact that it was long confused with the more widespread Andean Pygmy-Owl (*G. jardinii*) (Robbins & Stiles 1999). It is confined to Andean cloud forests along a limited altitudinal range (1400–2000 m a.s.l.) in the Chocó biogeographic region (Robbins & Stiles 1999).

In Ecuador the Cloud-forest Pygmy-Owl has been reported from a few sites in western Pichincha prov. (Tandayapa, Mindo and Guajalito), and one site in western Carchi prov. (Chical) (Robbins & Stiles 1999, Ridgely & Greenfield 2001, D. F. Cisneros-Heredia & V. Zak pers. com., J. A. Lyons pers. com.). In this note we present new data on its distribution and habitat, and discuss its current conservation status within Ecuador.

METHODS

Surveys were carried out in October–November 2000 and in February 2002, at Otonga Reserve, northwest Cotopaxi prov. (00º25'S, 79º00'W, 1700–2200 m a.s.l.). We surveyed both forested and open areas along ten 1-km long transects, in which we used pre-recorded vocalizations of the Cloud-forest Pygmy-Owl (Moore *et al.* 1999) to elicit responses. Transects were surveyed between 18:00–19:00 h under both dark and moonlight nights, with 5-min variations according to seasonal differences in day length, for a total number of 12 full sampling hours. One person played the pre-recorded vocalizations for 5 min each 200 m along the transect, then waited 5 min for a response before moving.

At the same time, another observer walked 100 m ahead to provide better coverage of the area. We also carried out two short surveys for 45 min before and after dawn (5:30–6:15 h) in February 2002 (after a population was finally located).

Additionally, we include details of an unpublished record obtained by M. B. Robbins (pers. com.; see below).

RESULTS AND DISCUSSION

Range extension. At least four individuals of the Cloud-forest Pygmy-Owl were heard (two were tape-recorded) before and after playback, between 1850 and 1950 m a.s.l. at Otonga Reserve on 22 February 2002, confirming its continued occurrence south of Pichincha prov. We did not find this pygmy-owl during the October–November 2000 surveys, and our first contact with the species was a naturally vocalizing bird during a clear, full moon night at 21:00 h on 22 February 2002. A second bird began calling after playback of the first individual's primary vocalization. A third bird was heard 30 min later from another secondary forest area down slope. Two days latter (24 February), two birds were heard calling before dawn (one also responded to playback at 6:20 h; one of them was probably the third individual heard on 22 February).

A previously unrecognized and unpublished record of a bird tape-recorded at Buenaventura (03°40'S, 79°44'W, 900–1000 m a.s.l.), El Oro prov., southwestern Ecuador, on 30 June 1985 by M. B. Robbins (cut # 42753; Macaulay Library of Natural Sounds, Cornell University) came to light when Robbins recently reviewed his 1985 tapes (Robbins & Ridgely 1990). This record extends southward the known range for this pygmy-owl by c. 330 km, and also establishes a new lower elevation limit, c. 900 m a.s.l., for the species. It is likely that the Buenaventura site is the southern terminus of this species' range, as many Chocó cloud forest-inhabiting birds reach their southern limit in this area (Chapman 1926, Robbins & Ridgely 1990, Ridgely & Greenfield 2001), wherein most of them often occur at lower elevations [e.g., Violet-tailed Sylph (*Aglaiocercus coelestis*), Black-chinned Mountain-Tanager (*Anisognathus notabilis*), see Ridgely & Greenfield 2001)].

Presumably, as with many other cloud forest species, the Cloud-forest Pygmy-Owl is, or at least was (there has been considerable deforestation), found in the intervening area between western Cotopaxi and El Oro provs., but additional field work is needed to confirm this assumption.

Habitat. The four individuals recorded at Otonga inhabited young secondary forest and forest borders with dense understory and a canopy height of c. 15 m. The areas wherein the Cloud-forest Pygmy-Owl was found were converted into pastures more than 10 years ago but were left to regenerate since then (C. Tapia pers. com.).

Along transects with primary and secondary forest, and forest edge, the Cloud-forest Pygmy-Owl was detected only in secondary forest and forest edge. This suggests that this species is not actually restricted to primary forests or that it is at least capable of persisting in altered habitats. Similarly, the bird recorded at Buenaventura was also at forest edge, but in this case, of wet primary forest (M. B. Robbins pers. com.). Furthermore, the Cloud-forest Pygmy-Owl has also been recorded in secondary forest and forest borders at Sacha Tamia (above Mindo), Pichincha prov., northwestern Ecuador (pers. observ.). More data are needed to better understand its habitat preferences.

Conservation. BirdLife International (2000) ranked the Cloud-forest Pygmy-Owl as globally vulnerable, due to habitat loss over all of

its naturally small distributional range. This species is not included in the recently published "Libro rojo de las aves del Ecuador" (Ecuador's red data book) (Granizo et al. 2002), apparently because it was not evaluated. Following IUCN (2000) guidelines, the Cloud-forest Pygmy-Owl should actually be ranked at least as vulnerable (VU) in Ecuador because: 1) its probable distributional range (extent of occurrence) does not exceed 20,000 km² (it seemingly is well below 5,000 km², adequate for ranking it even as endangered), 2) there are less than 10 known localities, 3) its range is fragmented, and 4) a future decline can be inferred in extent of occurrence, area, extension and/or habitat quality, number of localities, or number of mature individuals [criteria B1, subcriteria a,b(i,ii,iii,iv,v)].

Five of the currently known Ecuadorian localities are protected to some extent, covering a total area of c. 21,000 ha. The "Bosque Protector Mindo-Nambillo" (Mindo-Nambillo Protection Forest) likely holds some populations of this species, but it is currently facing immediate threat by the construction of an oil pipeline, as well as by expansion of agricultural and pasture land. Tandayapa (Bellavista), Guajalito, Otonga and Buenaventura are all privately protected, but the land surrounding the last three reserves is heavily deforested. Another private reserve, Reserva Maquipucuna (4500 ha), is also located in the Tandayapa-Mindo area, and apparently also holds some populations (Cisneros-Heredia *et al.* in prep.). Although there are no confirmed records within the "Sistema Nacional de Áreas Protegidas" (Protected Areas National Network), the Cloud-forest Pygmy-Owl probably does occur in Cotacachi-Cayapas Ecological Reserve (204,420 ha) as this reserve is located between the Pichincha and Carchi records (BirdLife International 2000, pers. observ.). We hope to get more thorough information on this species after further research in Otonga Reserve, to better understand its natural history and vulnerability to extinction.

Surveys will continue to be carried out for one more year, and more detailed results will be published afterwards. This study is part of a broader project on densities and habitat use by Chocó endemic birds in Otonga Reserve (Chaves & Freile unpubl.).

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