Ornitología Colombiana

Nota Breve

Four elevational range extensions of birds of the Western Andes of Colombia and northwestern Ecuador

Cuatro extensiones de las distribuciones elevacionales de aves de la Cordillera Occidental de Colombia y el noroccidente de Ecuador

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Abstract

Research suggests that bird elevational ranges may be shifting upslope because of deforestation, habitat fragmentation or climate change. I present observations of four bird species that were encountered at a private reserve in Ecuador more than 300 meters above their known maximum altitudes in Colombia and Ecuador, including two that were recorded at altitudes higher than globally recorded maximums.

Key words: birds, Ecuador, Colombia, Western Andes, elevation, range

Resumen

Investigaciones sobre las distribuciones de aves indican que sus ámbitos elevacionales pueden estar moviéndose hacia partes más altas por deforestación, fragmentación de hábitats o cambio climático. Aquí, presento observaciones de cuatro especies de aves que registré en una reserva privada en Ecuador a más de 300 metros por encima de sus elevaciones máximas registradas para Colombia y Ecuador, incluyendo dos especies observadas a elevaciones mayores que las registradas globalmente para ellas.

Palabras clave: aves, Andes Occidentales, Ecuador, elevación, distribución

The limits of the elevational ranges of Andean birds are not completely understood, with temperature-related factors, competition and vegetation ecotones perhaps being important depending on the species (Terborgh 1971, 1975, 1985; Terborgh & Weske 1975).Warming climate has been proposed as a likely driver for recent upslope shifts (Forero-Medina *et al.* 2011) but other factors, such as lowland deforestation and/or habitat fragmentation may play a role as well (Thiollay 1996, O'Dea & Whittaker 2006). Gaps in knowledge of current bird elevational ranges and the relative scarcity of Andean bird data are an impediment to our understanding of the extent and causes of shifts in elevational ranges. Here I present notes on four species found above their published elevational ranges in northwestern Ecuador (Ridgley & Greenfield, 2001) and compare these records with their known distribution in the Western Andes of Colombia (Hilty & Brown, 1986). I searched primary literature and the Xeno-canto and eBird web databases to provide additional context for the elevational range extensions where relevant data were available.

All observations were made at La Hesperia Biological Station (LHBS), a 200-hectare private reserve that sits 1140 to 2040 m on the western slope of the Andes in Pichincha, Ecuador, approximately 160 km southwest of the Colombian border (approximate center: 0°22'S,78°51'W). The reserve habitat consists of a mixture of primary and secondary premontane and montane cloud forest, with minor areas of cattle pastures (both active and abandoned and reforesting) and orchards and gardens concentrated around resi-

Figure 1. Pallid Dove *Leptotila pallida,* La Hesperia Biological Station at 1370 m,15 February 2010 (A) 1 June 2010 (B) Photographs R. Scott Winton

dences and outbuildings on a plateau at 1370 m. A roadbed runs nearly the entire elevational breadth of the Reserve, as does the Tupi River, which supplies water to the reserve. LHBS is included in the Río Toachi-Chiriboga Important Bird Area and the Chocó-Darien-Western Ecuador Hotspot (Myers *et al.* 2000).

I collected the bird data as part of an informal inventory of the site's birdlife from January to June 2010. During these surveys, I used established trails and followed the unique transect method, described by Bibby *et al.* (2000) as being very useful for rapid inventories. Most effort was focused in the vicinity of the reserve's permanent facilities at 1370 m, but I covered the highest and lowest elevations of the reserve once every 1-2 weeks. I observed a total of 213 species, which combined with observations by Xavier Silva, Roger Littlewood and others have generated a site list of 278 confirmed species; publication of a list of the species of the reserve is planned. For elevations and locality points I used a Garmin Etrex 12-Channel GPS. Points were plotted using Google Earth map to verify elevations.

Species accounts

Pallid Dove (Leptotila pallida): I photographed individuals by the side of a dirt road on 15 Feb and 1 June 2010 (Fig. 1) at approximately 1370 m. Although superficially similar to the White-tipped Dove *L. verreauxi*, a relatively common breeding species at LHBS, these two birds showed paler heads and underparts and richer brown upperparts as well as white irises and reddish orbital skin. This species had been previously recorded by multiple observers at LHBS. The maximum recorded elevation worldwide is 800m (Hilty & Brown 1986; Ridgley & Greenfield 2001, Birdlife International 2013), therefore this observation constitutes an elevation range extension of approximately 570 m. This extension is supported by three Xeno-canto records listing this species at 1200 m in nearby Mindo and one at 1100 m in Milpe, Ecuador.

Violet-bellied Hummingbird (Damophila juliae): I observed this species three times from March through May, the highest of a male foraging at a flowering tree at the edge of a pasture at approximately 1480 m with David Kilner. The small size, blue (not purple) underparts extending up to the throat, and non-forked tail collectively ruled out the more common and superficially similar Green-crowned Woodnymph *Thalurania colombica fannyi*. The highest previous record for Ecuador is 1100 m (Ridgley & Greenfield, 2001) and for Colombia outside of the Magdalena Valley, it is 600 m (Hilty & Brown, 1986), though *D. juliae* known to range as high as 1800 m in other parts of its range (Birdlife International, 2013). This observation therefore constitutes an elevation range extension of approximately 380 m for northwestern South America.

Purple-bibbed Whitetip (Urosticte benjamini): I observed a lone female at the edge of a small clearing at approximately 2000 m on 5 May. The following field marks excluded the locally common and superficially similar female of Booted Racket-Tail *Ocreatus underwoodii:* extensive green spangling below, large white postocular spot and bold white tail-tips. Roger Littlewood previously recorded a male at a comparable elevation on 22 April 2004. The similar *U. ruficrissa* is not known to occur on the western slope of the Ecuadorean Andes (Ridgley & Greenfield 2001, Stiles *et al.* 2006). The elevation range in both Ecuador and Colombia is *ca.* 900 to 1600 m (Ridgley & Greenfield, 2001, Stiles *et al.* 2006), and the maximum globally is also 1600 m (Birdlife International 2013). Therefore this observation constitutes an elevational range extension of approximately 400 m. The extension is supported by several Xeno-canto records listing this species at 1700 and 1750 m from nearby areas of Pichincha. One record from 1900 m may be accurate, but the location is confusingly mislabeled as "Distrito Metropolitano de Quito, Pichincha".

White-whiskered Puffbird (*Malacoptila panamensis):* I observed an individual in forest understory three times within the same week in the same area (presumably the same individual each time) at approximately 1350 m and obtained a diagnostic photograph on 28 February. I ruled out the very similar Moustached Puffbird *Malacoptila mysticalis*, which is known to occur at this elevation, by the extensive bold streaking on underparts with cinnamon confined to the upper chest. The maximum elevation for *M. panamensis* in Ecuador and Colombia is 900 m (Hilty & Brown, 1986; Ridgley & Greenfield, 2001), though it is known to range as high as 1400 m in other parts of its range (Birdlife International 2013). Therefore this observation constitutes a upwards range extension of 450 m for northwestern South America.

The reasons behind these records of upward maximum elevations of these species may reflect various factors. The record of a sedentary lowland forest bird such as *M. panamensis* perhaps could be ascribed to climate change; that of *L. pallida* might also reflect climate warming, although this species also inhabits secondary forest and forest edge (Hilty & Brown 1986, Ridgely & Greenfield 2001), such that forest fragmentation at lower elevations could also have facilitated movements upslope. Of the hummingbirds, *U. benjamini* is a forest bird, whereas *D. juliae* is common at forest edge and in second growth habitats (Hilty & Brown 1986, Ridgely & Greenfield 2001). Forest clearing lower in the mountains could have facilitated the upslope movement of *D. Juliae* in particular. However, altitudinal movements of forest hummingbirds in response to changes in flower availability are well documented in the mountains of Middle America (*e. g.,* Stiles & Skutch 1989), but as yet have not been studied in detail in the Andes, such that more or less regular seasonal upward movements by *U. benjamini* cannot be ruled out at present.

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Literature Cited

BIBBY, C. J., N. D. BURGESS, D. A. HILL & S. H. MUSTOE. 2000. Bird Census Techniques, 2nd edition. Elsevier, London.

Birdlife INTERNATIONAL (2013). IUCN Red List for birds. Downloaded from http://www.birdlife.org on 16 December 2013.

FORERO-MEDINA, G., J. TERBORGH, S. J. SOCOLAR & S. L. PIMM. 2011. Elevational ranges of birds on a tropical montane gradient lag behind warming temperatures. PloS One 6: p.e28535.

HILTY, S. L. & W. L. BROWN. 1986. A Guide to the Birds of Colombia. Princeton University Press, Princeton, New Jersey, USA.

MYERS, N., R. A. MITTERMIER, C. G. MITTERMIER, G. A. DA FONSECA & J. KENT. 2000. Biodiversity hotspots for conservation priorities. Nature 403:853-858.

O'DEA, N. & R. J. WHITTAKER. 2006. How resilient are Andean montane forest bird communities to habitat degradation? Biodiversity and Conservation 16:1131–1159.

RIDGELY, R. S. & P. J. GREENFIELD. 2001. The Birds of Ecuador. Cornell University Press, Ithaca, New York, USA.

STILES, F. G. & A. F. SKUTCH. 1989. A guide to the birds of Costa Rica. Cornell University Press, Ithaca, New York, USA.

STILES, F. G., N. K. KRABBE & T. S. SCHULENBERG. 2006. Species limits in the genus *Urosticte* (Trochilidae). Ornitología Colombiana 4:59-63.

TERBORGH, J. 1971. Distribution on Environmental gradients: theory and a preliminary interpretation of distributional patterns in the avifauna of the Cordillera Vilcabamba, Peru. Ecology 52:23-40.

TERBORGH, J. 1985. The Role of ecotones in the distribution of Andean birds. Ecology 66:1237-1246.

TERBORGH, J. & J. S. WESKE. 1975. The role of competition in the distribution of Andean birds. Ecology 56:562-576.

THIOLLAY, J. 1996. Distributional patterns of raptors along altitudinal gradients in the northern Andes and effects of forest fragmentation. Journal of Tropical Ecology 12:535–560.

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