

Discovery of a population stronghold of Gorgeted Wood-quail *Odontophorus strophium*, a critically endangered Colombian endemic, with notes on ecology and vocalisations

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Se presentan algunas notas sobre la perdiz santandereana *Odontophorus strophium*. Esta perdiz se encuentra entre las especies de aves más amenazadas del mundo, es endémica de la Cordillera Oriental de Colombia, y solamente ha sido reportada en dos fragmentos de bosque durante las décadas recientes. Durante la Expedición EBA Colombia en el año 2002, fue encontrada esta perdiz en la Serranía de los Yariquíes o Cobardes, Santander, un brazo aislado de la Cordillera Oriental colombiana que hasta muy recientemente no había sido estudiado. La perdiz santandereana es común en los Yariquíes desde 1.700 hasta 2.000 m de elevación. Su vocalización es un coro ruidoso basado en repeticiones de tres chiflidos, los dos primeros más altos que el último *tí-ti-u*. Se requieren acciones inmediatas de conservación en la Serranía de los Yariquíes, pues esta podría considerarse un baluarte mundial de la perdiz santandereana al albergar hasta más de 250 individuos de esta.

Gorgeted Wood-quail *Odontophorus strophium* is one of the world's rarest and most poorly known birds, being restricted to the western slope of Colombia's Eastern Andean Cordillera⁶ between c.04°30' and 06°50'N. It is considered Critically Endangered, both globally and nationally^{1,11}, and of high priority for conservation action⁵. Small populations have been observed around just two localities in the past 20 years: Reserva Biológica Cachalú and alto río Fonce, both in dpto. Santander. Almost all (92%) of the species' historical range has been deforested. A principal conservation priority for the species was considered field work in Serranía de los Yariquíes (=Cobardes) to determine its status there^{2,11}.

The Serranía de los Yariquíes study area

We undertook a rapid biodiversity assessment at elevationally distinct sites in the Serranía de los Yariquíes, within the municipalities of San Vicente de Chucurí and Zapatoca, dpto. Santander, during January 2003 and January 2004, using methods described in Salaman *et al.*⁹. Serranía de los Yariquíes is an isolated spur of the Eastern Cordillera, rising from the Magdalena Valley to c.3,300 m and occupying 500,000 ha, of which 38% is forested⁴. The serranía has never been the subject of a comprehensive ornithological study, but a male Gorgeted Wood-quail was taken near Zapatoca (06°48'N 73°16'W)⁸ in 1970, and another specimen, taken in oak forest near Betulia in 1972⁷, was considered possibly to be a Gorgeted Wood-quail⁶. Despite these records, both within 30 km of our study site, the Serranía de los Yariquíes was very little explored prior our surveys, largely due to political instability which has deterred field work.

An ancient stone trail, the 'Camino de Lenguerke', traverses the Serranía de los Yariquíes from Montebello, through San Vicente de Chucurí

to Zapatoca. Above a small farm known as Siberia (1,380 m), the trail ascends rapidly, and at c.1,650 m enters forest. We selected a study site and transect at 1,900–2,000 m, near Finca El Talisman (06°50'N 73°21'W).

Distribution and ecology

We found Gorgeted Wood-quail in premontane cloud forest, characterised by frequent but not constant ground-level cloud, very steep slopes, a mean canopy height of c.12 m, with emergents rising to c.15 m, and fairly high levels of epiphytism. We heard at least two calling males at lower elevations (mostly at 1,800–1,950 m), below our transects, and none was heard calling above 1,950 m. During observations along the Camino de Lenguerke, we heard at least two further males above c.1,700 m in habitats including mature secondary forest. At two lower elevation study sites (Cerro de la Paz, Zapatoca, dpto. Santander; 06°59'N 73°27'W, 1,000 m, and 06°59'N 73°26'W, 1,300 m), Gorgeted Wood-quail was replaced by Marbled Wood-quail *O. gujanensis* (see sonogram 2). At a higher elevation study site (06°49'N 73°22'W, 2,450 m), no *Odontophorus* were encountered. Further south in its range, Gorgeted Wood-quail has been recorded at 1,800–2,050 m¹¹.

Gorgeted Wood-quail doubtless occurs further south in the Serranía de los Yariquíes to Cerro de las Armas. It may well be present in mountains above the nature reserve recently created by Fundación ProAves in the Serranía de las Quinchas, within the río Minero watershed, which have not yet been investigated ornithologically, although only Marbled Wood-quail and perhaps Rufous-fronted Wood-quail *O. erythrops* have been recorded in adjacent lower elevation sites to date¹². Based on its density and the extent of forest cover at suitable elevations, we hypothesise that this

population of Gorgeted Wood-quail in the Serranía de los Yariquíes may comprise >250 individuals, making the Yariquíes range the species' global population stronghold.

Vocalisations

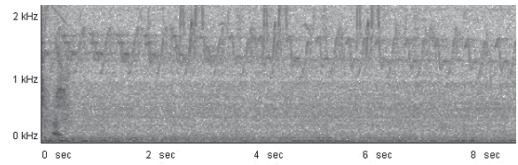
We heard Gorgeted Wood-quail daily at El Talisman (most frequently around 06h30–07h30) and made sound-recordings. Recordings of the species from the río Cachalú have been previously deposited in the Instituto Alexander von Humboldt's sound archive¹¹. The song is similar in structure and tone to that of other *Odontophorus*, being a rollicking long chorus consisting of a repeated refrain, but differs from congeners in that the repeated refrain consists of three notes falling in pitch (*ti-ti-oo*), with the first two notes audibly higher than the last (sonograms 1 and 3). The song is pitched at 1.2–1.8 kHz, refrains repeated at a rate of c.3 refrains per second (although often slowing to c.2 refrains per second), and a song phrase can be prolonged for up to 30 seconds. A recording is available free at the Fundación ProAves' website: www.proaves.org/ostrophium.wav.

The song structure is distinct from that of other *Odontophorus* present in this region of Colombia. Marbled Wood-quail (sonogram 2) is discussed below. Chestnut Wood-quail *O. hyperythrus*, which replaces Gorgeted Wood-quail in the south-east of the Eastern Cordillera^{9,10} has a more complex four-note refrain, *orrit-killyit*⁶. The lowland specialist Rufous-fronted Wood-quail has a trisyllabic *cho-wi-ta* with the middle syllable highest⁶.

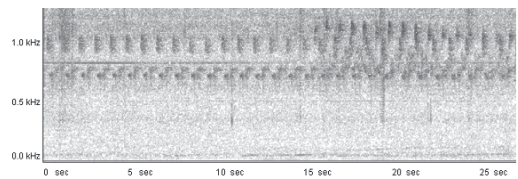
Conservation

The presence of populations of Gorgeted Wood-quail warrant conservation action in the Serranía de los Yariquíes as the species' global population stronghold. The small clearing around El Talisman is subject to a reforestation plan by the local mayoralty, and very steep slopes deter further deforestation in the vicinity. However, since the recent re-opening of the historic trail on which our transect was located, hunting is now an increasing threat, as it is in other parts of the species' range^{3,11}. According to local people, some of this hunting directly targets Gorgeted Wood-quail⁴.

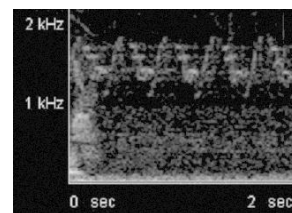
A flight over the Serranía de los Yariquíes in July 2004 by the authors revealed the western slope, at suitable elevations for Gorgeted Wood-quail, to harbour primary forest almost throughout. However, the massif's drier eastern slope and sites at which Gorgeted Wood-quail has been historically reported, e.g. Zapatoca, Betulia and the Cuchilla del Ramo, have been over 90% deforested. Our study area at El Talisman forms the northernmost spur of forested habitat in the Yariquíes range and is an important buffer zone protecting other remaining forested areas.



Sonogram 1. Gorgeted Wood-quail *Odontophorus strophium* song recorded in the Serranía de los Yariquíes. The lower left corner of the sonogram shows background noise; calls above 1.8 kHz are of Moustached Wren *Thyrothorus genibarbis*. Note also the very thin (almost inaudible) rising cadence between each main phrase, and the distinct slowing of the song over time.



Sonogram 2. Marbled Wood-quail *Odontophorus gujanensis* song recorded in the Serranía de los Yariquíes (Cerro de la Paz), at 1,300 m. The structure is distinct, with the male's call consisting of repeated phrases of four notes, the first two high notes being very close together and merging in the sonogram; the second two being lower, the last slightly higher than the penultimate (*coro-co-ro*). After c.15 seconds, the female joins in the song with a disyllabic *va-do* (the first note high note, the second lower). Note the lower pitch of both male and female elements compared to *O. strophium* (0.7–1.3 kHz vs. 1.2–1.8 kHz).



Sonogram 3. Amplification of Gorgeted Wood-quail *Odontophorus strophium* song showing trisyllabic refrain and rising cadence more clearly. All sonograms were generated using Gram 8 (Vizualization Software LLC) by TMD.

To raise awareness of conservation issues in the region, we have distributed c.200 posters specifically drawing attention to the conservation of Gorgeted Wood-quail. The Serranía de los Yariquíes deserves national park and Important Bird Area status to protect this and the many other



Figure 1. Gorgeted Wood-quail *Odontophorus strophium* habitat: the Camino de Lenguerke and Serranía de los Yariguíes (Thomas Donegan & Blanca Huertas / Colombian EBA Project / Fundación ProAves)



Figure 2. The El Talisman study locality (Thomas Donegan & Blanca Huertas / Colombian EBA Project / Fundación ProAves)



Figures 3–4. Aerial photographs of the western flank of the Serranía de los Yariguíes, at suitable elevations for Gorgeted Wood-quail *Odontophorus strophium*; note the extent of unbroken primary forest (Thomas Donegan & Blanca Huertas / Colombian EBA Project / Fundación ProAves)

threatened species present there⁴, objectives which the authors, together with Fundación ProAves, Corporación Autónoma Regional de Santander, Corporación Autónoma Regional para la Defensa de la Meseta de Bucaramanga, Fundación Natura, Conservation International, the Colombian Ministry for the Environment and others are vigorously pursuing.

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