

## The current status of the Pink-headed Warbler *Ergaticus versicolor* in Chiapas, Mexico

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*Ergaticus versicolor* es un endemismo del bosque nublado del sur de México (norte y sudeste de Chiapas) y oeste de Guatemala. Está clasificada como casi amenazada en el Libro Rojo de ICBP/IUCN<sup>2</sup>. Históricamente, *E. versicolor* parece haber sido común en el sector guatemalteco de su distribución, y los reportes recientes de observadores que visitaran este área sugieren que aún existe allí. Howell y Webb<sup>7</sup> mencionan que *E. versicolor* es “común a bastante común” a lo largo de su distribución, pero mientras ésto es tal vez verdadero para las poblaciones en Guatemala, no es del todo correcto en lo que respecta a Chiapas. Durante un estudio sobre la presencia de *Dendroica chrysoparia* en las alturas de Chiapas, Vidal *et al.*<sup>11</sup> hallaron que las observaciones de *E. versicolor* eran menos numerosas que aquellas de este especie globalmente amenazada.

Hacemos una revisión del estatus y distribución de *E. versicolor* y damos un reporte sobre el trabajo de campo en Chiapas, México, principalmente en Cerro Huitepec y Rancho Nuevo cerca de San Cristóbal de Las Casas, en el Cerro Tzontehuitx cerca de Chamula, y en Volcán Tacaná en la frontera con Guatemala, al noreste de Tapachula. Nuestro trabajo sugiere que *E. versicolor* es de hecho bastante poco común en Chiapas fuera del Volcán Tacaná, tiene una distribución altamente restringida y se encuentra bajo una considerable amenaza de extinción local.

### Introduction

Pink-headed Warbler *Ergaticus versicolor* is endemic to the cloudforests of north and south-east Chiapas, Mexico and western Guatemala, and is classified as near-threatened in Collar *et al.*<sup>2</sup>. Historically, *E. versicolor* appears to have been very common in the Guatemalan part of its range<sup>6,9</sup>, and recent reports from birders visiting this area suggest its continued presence. Howell & Webb<sup>7</sup> describe *E. versicolor* as “common to fairly common” throughout its range, but while this statement is perhaps true for the Guatemalan population, it is somewhat misleading in the context of Chiapas. In a study of Golden-cheeked Warbler *Dendroica chrysoparia* occurrence in the Chiapas highlands, Vidal *et al.*<sup>11</sup> found that sightings of *E. versicolor* were less numerous than those of the globally threatened *Dendroica*.

Here, we review the distributional status of *E. versicolor* and report on field work in Chiapas, Mexico, principally at Cerro Huitepec and Rancho Nuevo near San Cristóbal de Las Casas, at Cerro Tzontehuitx in nearby Chamula, and at Volcán Tacaná on the Guatemalan border north-east of Tapachula. Our work suggests that *E. versicolor* in Chiapas is in fact very uncommon away from Volcán Tacaná, has a highly restricted distribution and is under considerable threat of local extinction.

### Ecology

*Ergaticus versicolor* requires oak or pine-oak cloud forest with a dense understorey, a habitat it shares

with a number of other highland endemics such as Bearded Screech-owl *Otus barbarus*, Blue-throated Motmot *Aspatha gularis*, and Black-throated Jay *Cyanolyca pumilo*. In Chiapas, this habitat occurs along the forest edge where secondary vegetation is allowed to develop over a substantial period of time (e.g. at Cerro Huitepec); it is also found on steep forested slopes where shallow soils and frequent tree-falls produce lower tree densities, a more open canopy and a denser understorey than might otherwise be the case. Examples of open cloudforest with a well-developed understorey (and significant populations of *E. versicolor*) were found on the steep slopes of both Rancho Nuevo and Volcán Tacaná. Pure pine forest appears to be unsuitable for breeding *E. versicolor*, possibly because the often poorer understorey is unsuitable for concealing the species' ground nests<sup>4</sup>.

*E. versicolor* has an altitudinal range of 1,800–3,500 m<sup>7</sup>; according to Curson *et al.*<sup>3</sup>, the species is most abundant at 2,800 m and above. In the Central Highlands of Chiapas, *E. versicolor* occurs above 2,200 m; it is not found at the lower altitude cloudforest sites of northern and eastern Chiapas. This suggests that temperature as well as moisture and habitat structure may be an important determinant of *E. versicolor* occurrence. Skutch<sup>9,10</sup>, for example, mentions winter frosts as a key climatic requirement for the species.

*E. versicolor* makes aerial sallies and gleans insects from vegetation, concentrating its foraging in understorey vegetation between 2–5 m in height



Figure 1. The northern Central American distribution of *Ergaticus versicolor*.

and only occasionally working above 7 m, but we observed males singing and foraging at the tops of 15 m trees on several occasions during March and April. At Huitepec, males with attendant females were easily observed from late February; at this time the birds appeared in second-growth on forest edge, and even foraged and sang conspicuously as much as 80 m from the cloud forest edge in patches of advanced second-growth in open, overgrown fields. By late March, however, the females became very secretive, and males became equally difficult to locate by mid-April. This cryptic behaviour in breeding birds at Huitepec was perhaps due to very low population densities, as it was not apparent in birds observed at Volcán Tacaná during a visit in June 1995 nor during a study in western Guatemala<sup>9,10</sup>.

The authors believe *E. versicolor* to be sedentary, with pairs (or at least males) holding territories throughout the year. Some post-fledging and winter dispersal may occur, and could explain non-breeding reports of *E. versicolor* in apparently uncharacteristic habitat.

There is little evidence to suggest that the decline in *E. versicolor* numbers is part of a short-term fluctuation, similar to those shown in the congeneric Red Warbler *Ergaticus ruber*<sup>3</sup> of Mexico's central highlands. The eruption of Volcán Chichónal in 1982 and the subsequent carpeting of large areas of Chiapas with volcanic ash may have initially reduced the Northern Highlands population of *E. versicolor*, as suggested by some authors<sup>3,7</sup>. However, work carried out by the authors and consultation with researchers living and working

in the area, indicate no sign of a recovery in numbers over recent years. The fall in numbers during the early 1980s (whatever the cause) appears to have been compounded by a rapid acceleration in habitat modification and destruction since then.

### Distribution

*E. versicolor* occurs in two distinct regions (see Figure 1): the highlands of western Guatemala, which harbour the species' core population, and southernmost Chiapas on Volcán Tacaná and its immediate surroundings (see Figure 2); and the Central Highlands (Altos) of Chiapas, with most records from the surroundings of San Cristóbal de Las Casas. This population is probably genetically isolated from the Guatemalan population, due to both the species' highly sedentary nature and the presence of two low-lying, physical barriers: the Central Depression and the Central Plateau. Despite this, no geographical variation has been described in the species<sup>3</sup>.

The dependence of *E. versicolor* on well-preserved pine-oak cloudforest with a dense understorey (or well-developed secondary vegetation adjacent to cloudforest) coupled with its apparent need for altitudes high enough to produce winter frosts results in a restricted potential distribution for the species in the Central Highlands of Chiapas. Within this region, there are two known areas in which *E. versicolor* occurs, both in the vicinity of San Cristóbal (Figure 3): Cerro Huitepec and Rancho Nuevo.

**Cerro Huitepec**, an old volcanic peak ranging in altitude from 2,200–2,720 m, is situated 3 km west of the city. On the eastern flank of the mountain, 135 ha of oak forest are protected by PRONATURA Chiapas as the Estación Biológica Cerro Huitepec. In spring 1995, 6–8 singing *E. versicolor* males defended territories along the forest edge on the north-west border of the reserve, concentrating their activities in well-developed secondary growth immediately adjacent to intact cloudforest. In March–April 1996, only four singing males were present, appearing to defend clusters of small trees and advanced secondary growth in fields and openings 30–80 m from the forest edge. Birds have also been observed near the radio towers at the summit of Huitepec and in the pine-oak woodland near the Instituto de Historia Natural offices south-west of the mountain. It is unclear whether breeding occurs at these last two sites, but the habitat appears suitable.

Forest cutting on Cerro Huitepec, outside the reserve, has been particularly intense in the last few years, as has habitat destruction in the sur-

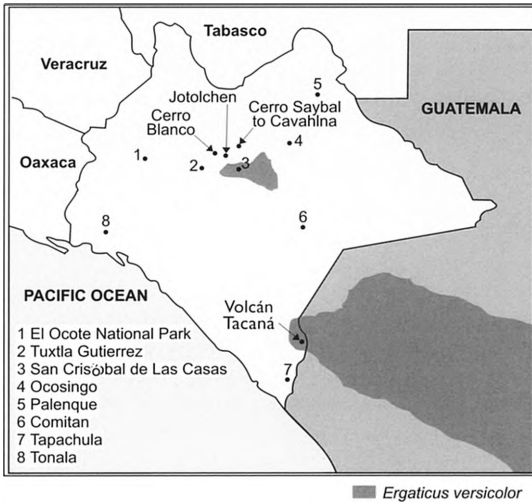


Figure 2. The distribution of *Ergaticus versicolor* in Chiapas, Mexico.

rounding region. For example, none of the original 8,604 ha of the Larrainzar cloudforest remains'. Some areas of seemingly suitable habitat still occur on the hills surrounding Zinacantan, and it is perhaps difficulty of access which explains the lack of recent records from this area.

**Zona de Protección Ecológica Rancho Nuevo**, the second major site for *E. versicolor* in the Altos, has a more extensive area of suitable habitat than Cerro Huitepec and is likely to harbour a larger population. This steep forested ridge to the southwest of San Cristóbal, running from Los Corralitos alongside highway MEX 190 to beyond the settlement of Rancho Nuevo proper, has an altitude similar to that of Huitepec. Here, suitable habitat comprises steep slopes with a relatively open canopy that permits dense understorey development—a configuration very different from the secondary edge habitat found on Cerro Huitepec.

Since the Zapatista guerrilla uprising of January 1994, access to Rancho Nuevo has unfortunately been increasingly difficult due to the Mexican government's heavy military presence in the area, and it is currently impossible to visit either the cloudforest sites or the pine and pine-oak slopes leading to the ridge crest. Thus a thorough census during March–April 1995 was not possible, but on a brief visit in January 1995 we found two pairs of *E. versicolor* along a 3 km track ascending the ridge, and there appeared to be a substantial amount of suitable habitat. Technically, Rancho Nuevo is a protected state park—the public is permitted only in a small developed area surrounding

the entrance to a limestone cave (Las Grutas)—but the continued military presence may have detrimental effects on the area. From the highway, one can see much road construction, and the more heavily forested areas are reportedly used for manoeuvres and artillery practice. It remains to be seen if the restriction of public access will outweigh the heavy military use as an inadvertent conservation strategy. Records of *E. versicolor* from the open, pine-forested slopes and valleys north of the Rancho Nuevo ridge may prove to be of dispersing Rancho Nuevo birds, as there does not appear to be any suitable breeding habitat here.

**Cerro Tzontehuitz**, 6 km north of San Cristóbal in the municipality of Chamula, is the highest peak in the Central Highlands (2,800 m) and has a substantial area of forest supporting a number of cloudforest species like Highland Guan *Penelopina nigra*, Green-throated Mountain-gem *Lampornis viridipallens* and Mountain Robin *Turdus plebejus*. However, there are no records of *E. versicolor* from this area, nor were we able to locate any birds in three widely spaced trips to the mountain. The disappearance of 95% of the original 10,200 ha of forest<sup>1</sup> may be a factor, but since a smaller area on Cerro Huitepec still supports a population of *E. versicolor*, it is more likely that the absence can be attributed to heavy disturbance of the understorey resulting from cutting and local charcoal production.

The area of forest along the ridge north of Teopisca which extends north towards Chanal (Figure 3) would appear to be suitable for *E. versicolor* (P. Bubb pers. comm.) and a census during March would be invaluable in establishing the species'

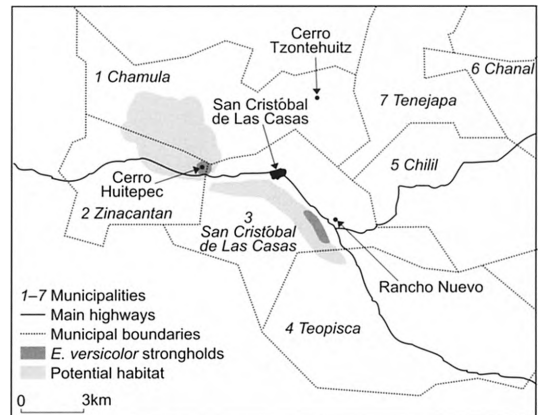


Figure 3. *Ergaticus versicolor* strongholds in the Northern Highlands.



Jared Wilson



Jared Wilson

status there. Of the other cloudforest sites in the Central Highlands identified by Bubb<sup>1</sup>, only Cerro Cavahlna (Figure 2) appears to be a potential site for *E. versicolor*. Cerro Saybal, Cerro Blanco, and Jotolchen (Figure 2), although altitudinally within the range of *E. versicolor*, lack suitable habitat (P. Bubb pers. comm.).

There are no records of *E. versicolor* from the peaks of El Triunfo Biosphere Reserve in the Sierra Madre of Chiapas, no doubt due to habitat differences. The only other area in Chiapas where *E. versicolor* is known to occur is Volcán Tacaná on the Guatemala/Mexico border and the area immediately surrounding it (Figure 2). Here the larger and apparently more resilient Guatemalan population encroaches into Chiapas, but even here it is facing an uncertain future.

During a visit to Volcán Tacaná on 7–9 June 1995, we found an apparently healthy population of *E. versicolor* above 2,400m on the steep forested slopes above the village of Talquian—e.g. we found 15 individuals, including 8 singing males, along a 2-km section of trail. However, the whole of the volcano was heavily cleared for agriculture, and these birds were confined to the more inaccessible gullies and ravines where the forest was still relatively intact. The unprotected status of the volcano, its geographic position on the border between Guatemala and Mexico and the presence of a large and growing human population make the continued survival of the remaining forest and the species it supports (including the highly threatened Horned Guan *Oreophasis derbianus*) uncertain at best.

### Conservation

Bubb<sup>1</sup> suggested that only 39% of the original 102,500 ha of cloudforest in northern Chiapas remains and that 50% of the remaining forest may vanish within the next 20 years. The extant 40,000 ha of cloudforest in northern Chiapas is fragmented into 18 widely scattered areas. Many of these are situated at elevations unsuitable for *E. versicolor*.



Hein Prinsen

Much of the remaining high altitude cloudforest is altered by intense human use—coppicing for charcoal production, timber extraction, farming, flower production, animal grazing and subsistence woodcutting. Although this modified habitat may be utilised by non-breeding or dispersing individuals, it is doubtful that it is of value to a breeding population due to degradation of the understorey vegetation. The majority of the forest surrounding San Cristóbal is utilised by one or more of these activities and prospects for the remaining forest appear poor. Forest conservation is difficult in the Central Highlands because several different land disputes have resulted in the immigration of large numbers of displaced indigenous people to San Cristóbal, the economic centre of the region. This places greater pressure on land in the San Cristóbal area than Chiapas' current 3% growth rate might suggest.

The two situations where habitat suitable for *E. versicolor* occurs (cloudforest-edge and cloudforest on steep slopes) face slightly different threats. Forest edge habitat is under greater threat, because it is the cloudforest edge which bears the effects of encroaching agriculture. This threat is compounded by the fact that *E. versicolor* requires

secondary edge vegetation which has been allowed considerable time to develop—five years at the very least. This level of growth is very unlikely to occur in most situations due to the constant clearing of vegetation for agriculture right up to the forest edge, the continuous advance of forest clearance and grazing of the forest edge by livestock. Steep forested slopes have historically been more secure due to their relative inaccessibility and unsuitability for agriculture or wood extraction. However, the ever greater demand for land is increasing the pressure on these formerly undisturbed areas.

Within Chiapas, only two sites known to support *E. versicolor* benefit from official protection: Rancho Nuevo and Cerro Huitepec. Despite this, the lower slopes of the Zona de Protección Ecológica Rancho Nuevo have been heavily grazed and recently usurped by the military as a training ground. Thus the future of the park's intact cloudforest is uncertain. In comparison, Estación Biológica Cerro Huitepec's survival appears more assured. However, the 115 ha of forest surrounding the reserve is disappearing rapidly and it is unclear whether a viable population of *E. versicolor* can be sustained in a reserve of only 135 ha. Volcán Tacaná and its surroundings, while supporting the largest population of *E. versicolor* in Mexico, has no official protection and is in danger of imminent habitat destruction.

Difficulties in gaining access to many areas of potentially suitable habitat due to land disputes and the understandably cautious nature of the local indigenous people toward outsiders make accurate assessment of the status of *E. versicolor* very difficult. However, it seems clear that *E. versicolor* faces an uncertain future in Chiapas. It is already restricted to a small number of isolated sites in the state, all of which face serious threat of human encroachment. The populations in Guatemala will undoubtedly face similar problems due to a faster rate of cloudforest clearance (less than 3% of the country's original 30,000 km<sup>2</sup> of cloudforest remain<sup>1</sup>). We strongly recommend that *E. versicolor* be classified as threatened by BirdLife International.

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### References

1. Bubb, P. (1991) The current situation of the cloud forest in northern Chiapas, Mexico. Unpublished report to ECOSFERA & PRONATURA Chiapas.
2. Collar, N. J., Gonzaga, L. P., Krabbe, N., Madroño Nieto, A., Naranjo, L. G., Parker, T. A. & Wege, D. C. (1992) *Threatened birds of the Americas: the ICBP/IUCN Red Data Book*. Cambridge, UK: International Council for Bird Preservation.
3. Curson, J., Quinn, D. & Beadle, D. (1994) *New World warblers*. London: A. & C. Black.
4. Dawn, W. (1963) Nesting of the Pink-headed Warbler. *Nat. Hist.* 73: 28–31.
5. Elliot, B. G. (1969) Life history of the Red Warbler. *Wilson Bull.* 81: 184–195.
6. Griscom, L. (1932) *The distribution of bird-life in Guatemala*. *Bull. Amer. Mus. Nat. Hist.* 64: 1–439.
7. Howell, S. N. G. & Webb, S. (1995) *A guide to the birds of Mexico and northern Central America*. Oxford: Oxford University Press.
8. Morse, D. H. (1989) *American warblers: an ecological and behavioral perspective*. Boston: Harvard University Press.
9. Skutch, A. (1954) *Life histories of Central American birds*, 1. Cooper Ornithological Society (Pacific Coast Avifauna 31).
10. Skutch, A. (1957) Resident wood warblers of Central America. In Griscom, L. & Sprunt, A. (eds.) *The warblers of America*. New York: Devin-Adair.
11. Vidal, R. M., Macías, C. & Duncan, C. D. (1994) The occurrence and ecology of the Golden-cheeked Warbler in the highlands of northern Chiapas, Mexico. *Condor* 96: 684–691.
12. Wege, D. C. & Long, A. J. (1995) *Key Areas for threatened birds in the Neotropics*. Cambridge, UK: BirdLife International. (BirdLife Conservation Series 5).

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