Range expansion of Red-breasted Blackbird *Sturnella militaris* in western Ecuador and notes on its contact zone with Peruvian Meadowlark *S. bellicosa*

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El Pastorero Pechirojo *Sturnella militaris* ha sido reportado recientemente en el occidente de Ecuador y su situación y distribución en la región aún no son bien conocidas. Presentamos un recuento de todos los registros del occidente de Ecuador, la mayoría previamente no publicados, y documentamos el avance de la especie hacia las áreas piemontanas occidentales de los Andes. Discutimos la zona de contacto entre la especie mencionada y el Pastorero Peruano *S. bellicosa*, especie cercanamente relacionada, la cual ahora es también conocida del suroccidente de Colombia. A pesar de que estos dos congéneres han entrado en simpatría recientemente, hasta la fecha no hay evidencia de competencia, segregación de recursos, o hibridación. También hacemos hincapié sobre la persistencia de datos desactualizados sobre la distribución de ambas especies en la región.

The ongoing destruction of tropical forests has resulted in the decline of many forest-dwelling species. However, certain adaptable non-forest species can profit from the increase in available habitat. Red-breasted Blackbird *Sturnella militaris* is one such beneficiary of the deforestation process. Formerly restricted to natural savannas, it has adapted to agricultural landscapes such as cattle pastures. Its distribution now extends from Nicaragua throughout northern South America to the Guianas and eastern Brazil, south to northernmost Bolivia[1,6]. The species prefers moist conditions and typically thrives in areas where forest has been recently cleared[6]. In recent decades Red-breasted Blackbird has been rapidly expanding its range[6,10].

Ridgely & Greenfield[11] reported Red-breasted Blackbird to be a local resident in the lowlands of eastern Ecuador (to 400 m), where it was considered a relatively recent arrival, but the species was apparently unknown west of the Andes. The species has since expanded its range in eastern Ecuador, to 1,855 m in prov. Napo[17]. More recently Solano-Ugalde *et al*.[15] published the first record of Red-breasted Blackbird from western Ecuador, at Laguna de la Ciudad, in the coastal lowlands south of San Lorenzo, prov. Esmeraldas. Here we present a summary of all known sightings from western Ecuador, including from the west Andean foothills in prov. Pichincha, and discuss these in relation to the contact zone with the congeneric Peruvian Meadowlark *S. bellicosa* in western Ecuador and western Colombia. All observations were made opportunistically.

Summary of records

DFCH first observed Red-breasted Blackbird in western Ecuador at Hacienda La Joya, prov. Pichincha, at km 109 on the Calacalí–La Independencia highway (00°05'N 78°59'W) at 750–800 m. The first sightings were of single males foraging in cattle pastures in December 1994 and July 1996; on both occasions the birds stayed less than one week. Hacienda La Joya is a mosaic of predominantly anthropogenic wet pastures with natural borders, orchards and small patches of secondary evergreen forest. Subsequently,

Figure 1. Map showing records of Red-breasted Blackbird *Sturnella militaris* in north-west Ecuador reported here. 1: San Lorenzo, Esmeraldas; 2: Mompiche, Esmeraldas; 3: Zapallo, Esmeraldas; 4: Pedro Vicente Maldonado, Pichincha; 5: Hacienda La Joya, Pichincha; 6: Santo Domingo, Santo Domingo de las Tsáchilas; 7: Río Palenque Science Station, Los Ríos; 8: South of San Miguel de los Bancos, Pichincha; and 9: Laguna de la Ciudad, Esmeraldas.

Table 1. Records of Red-breasted Blackbird *Sturnella militaris* in western Ecuador.

Date	Locality	Observer	No. / Sex	Documentation
23–26 December 1994	Hacienda La Joya, Pichincha	DFCH	one male	
10–18 July 1996	Hacienda La Joya, Pichincha	DFCH	one male	
1 January 1999	Hacienda La Joya, Pichincha	DFCH	a pair	
15–17 February 2002	Hacienda La Joya, Pichincha	DFCH	one male + one female	
10 November 2004	Río Palenque Science Station, Los Ríos	DFCH	two males	
22–25 December 2005	Hacienda La Joya, Pichincha	DFCH	one male	
3–5 February 2006	Hacienda La Joya, Pichincha	DFCH	one male + one pair	
18–19 February 2006	San Lorenzo, Esmeraldas	T. Santander *et al.*	one pair	photograph
8 April 2006	Pedro Vicente Maldonado, Pichincha	AS-U	one male	
2–7 May 2006	Mompiche, Esmeraldas	DFCH	two pairs	
10 January 2007	Pedro Vicente Maldonado, Pichincha	AS-U	one male	
31 January 2007	Near Zapallo, Esmeraldas	SO	a pair	
3 February 2007	Near Zapallo, Esmeraldas	SO	one male	
26 March 2007	Near Zapallo, Esmeraldas	R. S. Ridgely	one male	
30 March 2007	Near Pedro Vicente Maldonado, Pichincha	AS-U	one male	
7 April 2007	San Lorenzo, Esmeraldas	R. S. Ridgely	one male	
17 July 2007	Pedro Vicente Maldonado vicinity, Pichincha	SO	one male	
21 January 2009	Pedro Vicente Maldonado vicinity, Pichincha	O. Licuy	a pair	photograph
9 April 2009	Santo Domingo, Santo Domingo de los Tsáchilas	DFCH	one male	
3 August 2009	Near Zapallo, Esmeraldas	D. Brinkhuizen *et al.*	two pairs	photograph
1–2 May 2010	South of San Miguel de los Bancos, Pichincha	DFCH	one pair + one displaying male	

individuals were observed at the same locality on a sporadic basis until February 2006. DFCH's earliest observations predate the publication of *Birds of Ecuador*[11]; consequently the noteworthy nature of these observations was overlooked.

Since 2004 records of Red-breasted Blackbird have become more frequent and have come primarily from three areas in north-west Ecuador: the San Miguel de los Bancos–Pedro Vicente Maldonado region of Pichincha (including Hacienda La Joya), far north-west Esmeraldas near San Lorenzo, and southern Esmeraldas near Zapallo. Other records come from prov. Los Ríos, prov. Santo Domingo, and the southern coast of Esmeraldas. Table 1 summarises all unpublished records of Red-breasted Blackbird in western Ecuador that we are aware of.

Most of these records are from habitats similar to that at Hacienda La Joya: wet pastures mixed with orchards and disturbed secondary forest. Notable exceptions include an observation of a displaying male at an abandoned grassy shrimp pond near San Lorenzo, Esmeraldas (R. S. Ridgely pers. comm.) and a male found by DFCH in a suburban setting in Santo Domingo. Elevations range from sea level in coastal Esmeraldas to c.800 m at Hacienda La Joya. The approximate locations of the records discussed here, in addition to that by Solano-Ugalde *et al*.[15], are plotted in Fig. 1.

Figure 2. Male Red-breasted Blackbird *Sturnella militaris*, near Pedro Vicente Maldonado, prov. Pichincha, Ecuador, 21 January 21 2009 (Olger Licuy)

Discussion

These reports mostly involve single males, and in some cases pairs or small groups of up to four. The small number of individuals involved

and the sporadic nature of the observations may indicate that Red-breasted Blackbird is a local resident, present at relatively low density in western Ecuador. Alternatively, these observations may represent vagrants. Veit[16] demonstrated a positive correlation between vagrancy and breeding abundance and / or population growth in five North American passerines over a period of 22 years. Observations of Red-breasted Blackbirds in western Ecuador could accordingly be the result of exceptional breeding success in another part of the species' range. However, due to the absence of data on breeding success, this hypothesis cannot be verified. We believe the repeated observations over many years at one site (i.e. Hacienda La Joya, Pichincha) support the hypothesis that the species is resident.

Regardless of the status of the species in western Ecuador, we concur with Solano-Ugalde *et al.*[15] and speculate that these observations probably correspond with southward expansion from source populations in western Colombia. Other possible colonisation scenarios, such as a trans-Andean expansion and an escaped cagebird origin are less likely. The northern Andes in southern Colombia and northern Ecuador are mainly higher than 3,500 m and would thus present a significant dispersal barrier. While the species is at least occasionally kept in captivity in eastern Ecuador (M. Andy pers. comm.), we are unable to find any instance of the species being traded or kept in captivity west of the Andes. Furthermore, the widespread records in western Ecuador and adjacent Colombia support the hypothesis of natural expansion.

Hilty & Brown[5] reported Red-breasted Blackbird in western Colombia as far south as dpto. Cauca, but excluded dpto. Nariño from its range. The species was confirmed in Nariño in 1993, with the first published record from near Altaquér, where it is common[3]. This site is just c.30 km from the Ecuadorian border, thus expansion into Esmeraldas, Ecuador, and beyond was expected. It is widely recognised that forest clearance facilitates movements by Red-breasted Blackbird, by eliminating the dispersal barrier in the form of unsuitable habitat[6,8,10]. The large areas of forest that have been cleared in the lowlands and foothills of western Colombia and Ecuador during the last century have mostly been converted to agriculture and savanna-like habitat, providing a corridor for southbound expansion through the coastal lowlands and foothills of the western Andes.

Given the documented expansion in western Colombia, the first sightings from western Ecuador might have been expected from the lowlands of Esmeraldas, adjacent to dpto. Nariño. However, the early observations from Pichincha, Ecuador, are not entirely surprising. We hypothesise that poor observer coverage in Esmeraldas and a sampling artefact (most observers tend to concentrate on extensively forested areas) may have contributed significantly to the lack of sightings pre-2006. Furthermore, the reports summarised here primarily consist of single males, pairs and small groups, which are less likely to be detected.

As Red-breasted Blackbird has advanced south it has come into contact with the similar and closely related Peruvian Meadowlark *Sturnella bellicosa*. Historically, both species were absent from north-west Ecuador and south-west Colombia, separated by extensive lowland evergreen forests. Peruvian Meadowlark was formerly confined to xeric non-forest habitats in the lowlands of western Peru, south-west Ecuador and northernmost Chile[12]. However, the species is expanding its range north, presumably as a result of deforestation in the Chocó lowlands, much like Red-breasted Blackbird. Peruvian Meadowlark has reached south-west Colombia, where it has been documented in Nariño[2,7].

The degree of competition or hybridisation between these two newly sympatric congeners is unknown. *Sturnella* meadowlarks overlap in temperate areas of the Americas, and the two resident species of North America, Eastern Meadowlark *S. magna* and Western Meadowlark *S. neglecta*, are the best studied. Assortative mating and sterile hybrids are two mechanisms that serve to keep these two species separate[9,14]. Pampas Meadowlark *S. defilippii*, Long-tailed Meadowlark *S. loyca* and White-browed Blackbird *S. superciliaris*, which breed together in Argentina, have also been investigated. In both North and South America, interspecific territoriality has been observed[4,9,14].

During field work at Laguna de la Ciudad, Esmeraldas, AS-U found both Red-breasted Blackbird and Peruvian Meadowlark. No evidence of direct competition was noted and no interaction was observed between them. To date this is the only locality at which both species are known. We speculate that they will coexist in the newly deforested Chocó lowlands. Both species occur at very low densities in this region and presumably it will be years before they approach population capacity. The Red-breasted Blackbird's smaller bill and preference for wetter environs, factors which contributed to its former placement in the genus *Leistes*[13], may also serve to reduce overlap in diet and breeding habitat, thereby negating competition.

One issue that bears addressing is field identification. These two species' morphological similarity and over-reliance on old distributional maps[5,11] may have lead some observers to preconceived conclusions as to which *Sturnella* should be found in a given area. This bias can easily contribute to misidentifications and under-

reporting of the 'unexpected' species. For example, the presence of Red-breasted Blackbird in Nariño, Colombia, appears poorly known. When de las Casas *et al*.[2] presented the first confirmed records of Peruvian Meadowlark for Colombia they stated that Red-breasted Blackbird was still present locally only as far south as southern dpto. Cauca in the Western Andes. Given their discovery of Peruvian Meadowlark, they went on to evaluate previous sight records of 'red-breasted' meadowlarks from Nariño, and ascribed these to Peruvian Meadowlark with near certainty; the work of Downing[3], which might have influenced their conclusions, was still unpublished. The deforested Chocó lowlands of north-west Ecuador and south-west Colombia therefore represents a new zone of contact for two closely related species formerly separated by biogeographical barriers. Ornithologists in these areas should study *Sturnella* meadowlarks closely and use diagnostic field marks, as the status of these two species continues to evolve.

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