

DISTRIBUTIONS OF THREATENED GRASSLAND PASSERINES OF PARAGUAY, ARGENTINA AND URUGUAY, WITH NEW LOCALITY RECORDS AND NOTES ON THEIR NATURAL HISTORY AND HABITAT

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Resumen. – Distribuciones de passeriformes amenazados de pastizal de Paraguay, Argentina y Uruguay, con registros de nuevas localidades y notas de su historia natural y hábitat. – Se reportan nuevas localidades para ocho especies de pastizal globalmente amenazadas y dos casi amenazadas de Paraguay, Argentina y Uruguay, con notas de su historia natural y hábitat. Los muestreos se llevaron a cabo entre Agosto de 2001 hasta Marzo de 2004. Las especies estudiadas fueron el Yetapá Chico (*Alectrurus tricolor*), el Yetapá de Collar (*A. risora*), la Monjita Dominicana (*Xolmis dominicanus*), el Tachurí Canela (*Polystictus pectoralis*), el Tachurí Coludo (*Culicivora caudacuta*), la Cachirla Dorada (*Anthus nattereri*), el Capuchino Garganta Café (*Sporophila ruficollis*), el Capuchino Pecho Blanco (*S. palustris*), el Capuchino Corona Gris (*S. cinammomea*) y el Tordo Amarillo (*Xanthopsar flavus*). Para alguna especie se confirma una distribución restringida y fragmentada. La mayoría de nuestros registros se obtuvieron en pasturas naturales ligera o moderadamente pastoreadas por ganado. Este hábitat seminatural está volviéndose escaso en toda la región.

Abstract. – We studied the distribution of eight species of globally threatened and two near-threatened grassland passerines from Paraguay, northeastern Argentina, and Uruguay and gathered data on their natural history and habitat requirements. The records were obtained during surveys conducted between August 2001 and March 2004. The target species were Cock- and Strange-tailed Tyrants (*Alectrurus tricolor*, *A. risora*), Black-and-white Monjita (*Xolmis dominicanus*), Bearded Tachuri (*Polystictus pectoralis*), Sharp-tailed Tyrant (*Culicivora caudacuta*), Ochre-breasted Pipit (*Anthus nattereri*), Dark-throated Seedeater (*Sporophila ruficollis*), Marsh Seedeater (*S. palustris*), Chestnut Seedeater (*S. cinammomea*), and Saffron-cowled Blackbird (*Xanthopsar flavus*). We confirm the previously supposed restricted and fragmented distribution of several species. Most target species occur in natural pastures with light to moderate grazing by livestock, a habitat increasingly scarce in the region. *Accepted 20 October 2009.*

Key words: Threatened passerines, native grasslands, Argentina, Paraguay, Uruguay.

INTRODUCTION

Natural grasslands throughout the Americas have been drastically altered for agricultural

and livestock raising (Stotz *et al.* 1996, Nernberg & Ingstrup 2005, Askins *et al.* 2007). As a consequence, many of the native bird species confined to natural grasslands have suf-

ferred population declines or range reduction. These birds are now either regarded as globally threatened (BirdLife International 2008), or considered of high conservation priority (Stotz *et al.* 1996). Habitat loss and degradation are widely believed to be the main causes of avian extinction and declines (Stotz *et al.* 1996, BirdLife International 2008). This also applies to the native avifauna of the extensive natural grasslands of South America (Bucher & Nores 1988, Vickery *et al.* 1999, Di Giacomo & Krapovickas 2005). For this continent, however, we often lack important life history and ecological information about how habitat modifications are negatively affecting the populations of grassland birds.

In the southern grasslands of South America, populations of 11 passerines are classified as globally threatened and another five as near-threatened (BirdLife International 2008) because of reduced population sizes or restricted distributions (Mace *et al.* 1992). Since reliable population estimates are not available for most South American birds, many distributional ranges can be estimated only from locality records. A comparison of past and present distributions has shown range declines of 50–80 % for grassland species, such as the Strange-tailed Tyrant (*Alectrurus risora*), the Saffron-cowled Blackbird (*Xanthopsar flavus*), and the Pampas Meadowlark (*Sturnella defilippii*) (Fraga *et al.* 1998, Tubaro & Gabelli 1999, Di Giacomo & Di Giacomo 2004). Thus, locality records become an important tool for assessing the conservation status of declining species (Mace *et al.* 1992).

Our first objective was to obtain new information on the current distributions of Cock-tailed Tyrant (*Alectrurus tricolor*), Strange-tailed Tyrant, Black-and-white Monjita (*Xolmis dominicanus*), Bearded Tachuri (*Polystictus pectoralis*), Sharp-tailed Tyrant (*Culicivora caudacuta*), Ochre-breasted Pipit (*Anthus nattereri*), Dark-throated Seedeater (*Sporophila ruficollis*),

Marsh Seedeater (*S. palustris*), Chestnut Seedeater (*S. cinnamomea*), and Saffron-cowled Blackbird in Paraguay, Argentina, and Uruguay. BirdLife International (2008) considers all ten species to be globally threatened or near threatened. Whenever possible, we compared our distributional data with historical records of the species obtained from the literature (Collar *et al.* 1992) and museum specimens. Our second objective was to obtain data on habitats used by the target species, because precise information on the subject is often lacking. As a third objective, we evaluated the potential effects of recent changes in land use, particularly due to intensive agriculture and forestry on this species, and collected natural history information relevant to their conservation.

METHODS

The survey area is located within the region named “Mesopotamian grasslands” by Stattersfield *et al.* (1998). This region covers about 160,000 km² in eastern South America and is surrounded by important rivers like the Paraná, Paraguay and Uruguay. It includes mostly lowlands, bordering hilly country only at its northern edge in Paraguay and Argentina. The climate ranges from warm temperate to subtropical with abundant rainfall, mostly during the Austral spring and summer. Within Argentina, the region has been subdivided by Burkart *et al.* (1999) as including the eco-regions of the Pampas, Campos y Malezales, and Esteros del Iberá. Similar vegetation zones occur in southern Paraguay, such as at the Campos de las Misiones and the Esteros del Ñeembucú (Cabrera 1970, Hayes 1995).

The main natural vegetation types of the Mesopotamian region are grasslands and marshes (Burkart *et al.* 1999). In Paraguay and northeastern Argentina, the extension of grasslands is limited by the subtropical Atlantic Forest (Esquivel *et al.* 2007). Within the

area mapped by Stattersfield *et al.* (1998), extensive areas of thorny woodland of *Prosopis* spp., *Scutia buxifolia*, *Schinus longifolius*, *Celtis tala*, and *Acacia* spp. occur in northern Entre Ríos and southern Corrientes provinces and extend into nearby Uruguay (Cabrera 1976, Carnevali 1994, Burkart *et al.* 1999). For reason of this different vegetation type we did not conduct grassland bird surveys in this area (Fig. 1). The Mesopotamian grasslands were devoted mostly to cattle grazing soon after the European colonization (Di Pace 1992) and agriculture started to expand after the 1950s.

Earlier records cited in this paper were obtained during the authors' residence in Paraguay (2001–2002). Our most extensive surveys with 63 days of field work were conducted between April 2003 and March 2004. Surveys were conducted during April, July, August, November, December, and March covering the four seasons (details of dates and itineraries are available from the authors). We located birds mostly by slowly driving along rural dirt roads of a total length of 5000 km but also by visiting estancias (ranches) along our routes.

We conducted surveys within the following political subdivisions: in Paraguay, departamentos Guairá, Paraguari, Ñeembucú, Misiones, Itapúa and Caazapá; in Argentina, the provinces of Misiones (departamento Posadas), Corrientes (departamentos Ituzingó, Santo Tomé, Alvear, San Martín and Paso de los Libres) and Entre Ríos (departamentos Colón, Gualaguay, Tala, Concepción del Uruguay, Gualaguaychú, and Islas del Ibicuy), and in Uruguay departamentos Soriano, Río Negro, and Paysandú (Fig. 1). Details on localities and dates can be found in the Appendix.

Both authors had previous experience with the areas surveyed and knowledge of their avifauna (e.g., Fraga *et al.* 2003). Other than the pipit, the target species are strikingly

colored and/or conspicuous in open habitats (Ridgely & Tudor 1989, 1994). Visual records were obtained with binoculars and cameras and bird vocalizations were recorded with Sony Walkman Pro or Marantz cassette recorders using a shotgun microphone (AKG C568 EB). Many bird vocalizations obtained during the surveys are available in López-Lanús (2008). Coordinates were obtained with a GPS unit. Localities were considered different if they were separated by a minimum of 10 km (Fraga *et al.* 1998). Historical records from museum specimens were mostly obtained from the Museo Argentino de Ciencias Naturales in Buenos Aires (MACN). Whenever possible, museum specimens were checked to avoid perpetuating misidentifications (e.g., Fraga 2008). Scientific and English nomenclature follow Remsen *et al.* (2009).

RESULTS

Of the ten target species, eight are globally threatened and two are near-threatened (BirdLife International 2008). Of the first, one species is classified as endangered and seven are considered vulnerable.

Cock-tailed Tyrant (Vulnerable). This flycatcher was only observed in Paraguay, although we surveyed its historical range in Argentina. It is considered "rare" in Paraguay (Guyra Paraguay 2004), and we saw it at two localities without previous records. The first new locality was Estancia La Yegreña (departamento Itapúa). Here, in October 2002 we detected a minimum of 12 males perched or displaying in 20 ha of native grassland. This grassland patch was up to 1.60 m tall, lush, and lightly grazed by a few cattle. About three females were glimpsed perched low in the dense vegetation; because of the season, they were possibly nesting. At the second new locality, Estancia Isla Alta (departamento Misiones), the grasslands were drier and heavily grazed.

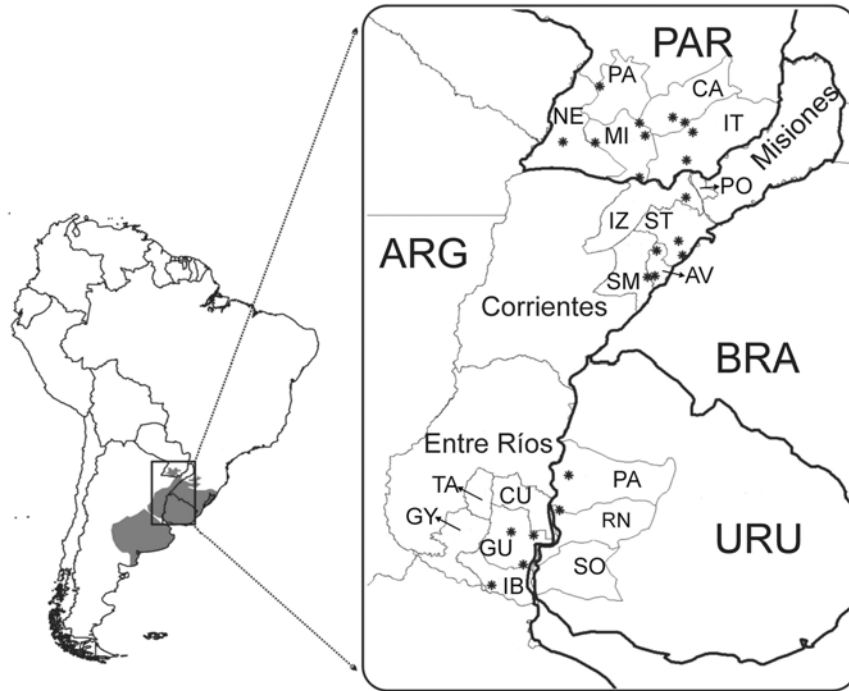


FIG. 1. Distribution of natural grasslands in gray (mostly after Burkart *et al.* 1999) and survey localities in Paraguay, Argentina, and Uruguay. The detailed map shows the new localities (*) and the departamentos in each country covered by our surveys. Initials correspond to departamentos: NE: Ñeembucú; PR: Paraguari, MI: Misiones; CA: Caazapá; IT: Itapúa, Paraguay; PO: Posadas; IZ: Ituzaingó; ST: Santo Tomé; AV: Alvear; SM: San Martín; GU: Gualeduaychú; GY: Gualeduay; TA: Tala; CU: Concepción del Uruguay; IB: Ibicuí, Argentina, and PA: Paysandú; RN: Río Negro; SO: Soriano, Uruguay.

In August 2003, one displaying male and two females were observed. In March 2004, one single immature male was seen in a second visit. The difference in numbers between the two localities probably reflects grazing conditions, because the first site was surveyed for 6 h just one day whereas the second site was visited on two different days with more than 10 h of observations. Esquivel *et al.* (2007), describe other current Paraguayan localities for this tyrant.

Strange-tailed Tyrant (Vulnerable). We only observed this species in Corrientes (Argentina) and Paraguay. Our localities for Corrientes

were previously reported (Di Giácomo & Di Giácomo 2004), but less information was available for Paraguay. Strange-tailed Tyrants were particularly common along the dirt road connecting San Juan Bautista and the arroyo Aguaray, (departamento Ñeembucú), Paraguay. A minimum of 17 males and females were detected along 20 km of road. This locality was already reported by Ridgely & Tudor (1994) and retains good grassland habitat. We recorded single individuals at two other sites, a female at Estancia La Graciela (departamento Misiones) and a young male in grasslands adjoining rice fields at the property of the Oest family (departamento Caazapá).

Black-and-white Monjita (Vulnerable). This species is considered “hypothetical” in Paraguay (Hayes 1995, Guyrá Paraguay 2004). Hence a priority of our surveys was to uncover its distributional status for Paraguay. Although we searched in habitats similar to those used by the species in Argentina (Fraga 2003) we failed to detect the species even at sites separated 15–30 km (the Parana river valley) from known Argentinean populations. In Paraguay, we surveyed Lago Ypoá, Isla Yaciretá and Carmen del Paraná (see Appendix).

In Corrientes province, Argentina, we found Black-and-white Monjitas at two localities not reported in Fraga (2003). These records extend its known distribution south along the Aguapey River to Bañado Santa Rosa (departamento Alvear) and Estancia San Jorge (departamento San Martín). In Entre Ríos province we found the species at just one locality not reported in Fraga (2003), at Estancia La Calera, where two territorial pairs were simultaneously observed. In western Uruguay we found monjitas at one locality, an unnamed estancia near Quebrachos, departamento Paysandú. The Uruguayan site of Quebrachos was recorded as a monjita locality in November 1966 (Gore & Gepp 1978).

Bearded Tachuri (Near Threatened). The species was only observed in Entre Ríos province, Argentina. We found at least five males performing aerial displays in pastures along rural roads near Estancia El Potrero, departamento Gualeguaychú, in November 2003. The habitat comprised natural pastures in dry soil invaded by native woody shrubs like *Dodonea* spp. (Sapindaceae) and *Baccharis* spp. (Asteraceae).

Sharp-tailed Tyrant (Vulnerable). This small flycatcher was detected in Paraguay at three localities. In August and September 2001, single pairs were seen at Isla Yaciretá and Car-

men del Paraná (departamento Itapúa). In March 2003, we saw three pairs at Estancia Roa Cué (departamento Caazapá). The habitat in the three sites was flooded grassland. In Argentina, in July 2003, we observed a pair in tall *Andropogon lateralis* grassland near Monte Mberity (departamento Santo Tomé, Corrientes).

Ochre-breasted Pipit (Vulnerable). This pipit was located mostly by its distinctive songs, which were tape-recorded. Ochre-breasted Pipits commonly sing during aerial displays in late winter and spring (Fraga 2001) but may be silent in late summer and fall. Our records for eastern Paraguay extend its known distribution to the west and south within the country, with two new localities, Estancia Lago Ypoa (departamento Paraguari) and Estancia Guazú Cuá (departamento Ñeembucú). In Argentina, it was only observed in Corrientes province where we found three new localities: near Monte Mberity, Estancia El Triunfo (departamento Santo Tomé), and Estancia Santa Isabel (departamento Alvear). These records extend the southern distributional limit in Argentina to 28°34'S. In all localities, we found this pipit relatively abundant in natural pastures in dry soil. The pastures were grazed, less than 20 cm high, and subject to seasonal fires to encourage fresh growth of grass.

Dark-throated Seedeater (Near Threatened). We found a mixed flock of 100+ individual seedeaters in March 2004 near Arroyo Aguay (departamento Ñeembucú). Adult males comprised about 20% of the flock and included those of Dark-throated Seedeaters. Other adult males in the flock were of Rusty-collared, Double-collared, Tawny-bellied, Marsh, Chestnut and Capped Seedeaters (*S. collaris*, *S. caerulescens*, *S. hypoxantha*, *S. palustris*, *S. cinnamomea* and *S. bouvreuil*, respectively). We think that this flock was migrating north at the end of the Austral summer. The habitat was native

grasslands growing on roadside ditches. Mixed flocks of seedeaters have been reported by other authors and depicted in field guides (Narosky & Yzurieta 1987).

We saw a minimum of three pairs in pastures along the edges of rural roads, near Estancia El Potrero, departamento Gualeguaychú, Entre Ríos province, Argentina, during the Austral spring, in November 2003. The habitat was the same as for the Bearded Tachuri. Three singing males were observed at Reserva Privada Malabrigo, in the same departamento, in December 2003. The habitat was a small grassy clearing in a regenerating *Acacia* spp. woodland. In Uruguay, we detected several singing males of this seedeater, including a male in immature plumage, in an estancia near Quebrachos, Paysandú, in November 2003. The habitat was a rural roadside with a mixture of grassland and weeds growing on dry soil.

Marsh Seedeater (Endangered). The only individuals observed in Paraguay were three males in the previously described mixed flock near the Arroyo Aguaray (departamento Ñeembucú). We saw two singing males of this species in marshy *Panicum* spp. grassland at Estero Santa Rosa (departamento Alvear), in Corrientes province, Argentina, during the Austral spring in December 2003.

Chestnut seedeater (Vulnerable). In Paraguay, we only observed males in the previously described mixed flock near the Arroyo Aguaray (departamento Ñeembucú). We found one male near the Arroyo Bellaco (departamento Río Negro) in western Uruguay in November 2003. The habitat was a roadside humid grassland with *Lolium* spp. and *Eryngium* spp.

Saffron-cowled Blackbird (Vulnerable). We explored the departamentos in the southeastern eco-region of Ñeembucú, in Paraguay

(Hayes 1995, Guyra Paraguay 2004) where the species had not been reported, without finding blackbirds. However, we found new localities for this icterid in the middle and upper basin of the Río Tebicuary, a main eastern tributary of the Río Paraguay. The westernmost locality along this river was Estancia La Graciela (departamento Misiones) where we repeatedly found blackbirds in small flocks ≤ 40 individuals. We obtained several new localities in the middle basin in the vast depression drained by the Arroyo Guajhó north of Yuty (departamento Caazapá). This depression contains marshes, wet natural pastures, and rice-fields and extends west to the Río Pirapó, another tributary of the Tebicuary. We found five *Xanthopsar* flocks or groups on the property of the Oest family (Caazapá), with a total of about 60 individuals. This locality had blackbirds when surveyed in a previous Paraguay trip in April 2002, indicating that it is important to the species. About 300 Saffron-cowled blackbirds were seen at Estancia Roa Cué in Caazapá during a survey in April 2002, the second largest flock reported for the species in Paraguay (MC pers. observ.). The Estancia subsequently changed administrators, and on a later trip in March 2004 most natural pastures had been replaced by soybean and corn crops. We found 60 blackbirds at a woodland edge near the soybean fields.

We found this blackbird at three new localities in Corrientes province, Argentina. We found a wintering roost of about 240 blackbirds on shrubs along a rural road near Estancia La Guayna in July 2003, the highest number we have ever recorded in Argentina. Two localities along the provincial route 39 were new, Estancia Santa Isabel and Bañado Santa Rosa, with a total of about 30 individuals. The new sites were in marshy natural pastures along the lower Río Aguapey, a main tributary of the Río Uruguay. We found three new localities for the species in Entre Ríos. We

observed a breeding group of 32 individuals in a marsh at Estancia La Calera (departamento Gualaguaychú). Another important site was Ibicuy (departamento Islas de Ibicuy), which is somewhat isolated from the remaining distributional range. Saffron-cowled Blackbirds were observed in all three trips to this site, with a maximum of 76 individuals. The habitat was mostly cattle pasture of native grass species. Ibicuy is important because its proximity to Buenos Aires province, where the blackbirds have not been seen since 1932 (Fraga *et al.* 1998). We observed a single pair at Reserva Privada Malabrigo (departamento Gualaguaychú), but the observation was not repeated in many subsequent visits to this place. We were unable to find Saffron-cowled Blackbirds in western Uruguay, although our surveys there were as extensive and careful as those in Entre Ríos province, Argentina.

DISCUSSION

We present 16 new localities for ten threatened grassland passerines from Argentina, Uruguay, and Paraguay. The lack of records for the Cock-tailed Tyrant from Argentina, where it was known from a few historical localities in Corrientes and Misiones provinces (chiefly specimens from the 1960's at the MACN), suggests its probable extinction in that country. Our findings revealed that the distribution of Ochre-breasted Pipits was underestimated. This relatively cryptic species has a larger range than previously suggested and has been recently reported for northern Uruguay (Azpiroz & Menéndez 2008). Currently it is considered vulnerable, mostly because of its rarity in Brazil (BirdLife International 2008). We added a few new localities for the remaining passerines, but the slightly enlarged distributions do not substantially differ from the recent ranges reported by Collar *et al.* (1992) or BirdLife International (2008). Our findings confirm the fragmented

distributions for Black-and-white Monjita (Fraga 2003) and Saffron-cowled Blackbirds (Fraga *et al.* 1998) in Argentina. We think that the extensive thorn woodlands in northern Entre Ríos and southern Corrientes do not provide a suitable natural habitat for these two open country species.

Most species surveyed were seen only in natural pastures, lightly to moderately grazed by livestock. This was particularly true for the two *Alectrurus* tyrants. Ochre-breasted Pipits apparently tolerate higher grazing pressures than the tyrants. Some tolerance of grazing by our target species was expected on historical grounds. Cattle and horses were introduced in the region by the first Spanish settlers in the 16th century. Over time, large semi-feral populations of cattle and horses formed (Soriano 1991, Carnevali 1994). The Jesuitic missions of eastern Paraguay and Corrientes had accumulated 744,000 heads of cattle and oxen, 167,000 horses, and 226,000 sheep by 1768 (Carnevali 1994). The threatened grassland passerines of today have survived a period of extensive, moderate grazing by livestock on large tracts of land (estancias, vaquerías) as practiced throughout the Spanish colonial period and up to the last century. The current agricultural impact on the Rio de la Plata grasslands started with a wave of European colonization in the 1870's (Bucher & Nores 1988). By the 1920's a negative effect of agriculture was reported for the Strange-tailed Tyrant in Argentina (Wilson 1926).

Most of our records were obtained in natural grassland. Comparisons of our observations with historical records suggest that well preserved natural grasslands have been supporting many of our target species for prolonged periods. Black-and-white Monjita have persisted at Quebrachos, Uruguay, for at least 36 years. Saffron-cowled Blackbirds may show a similar pattern. One locality, Estancia Mora Cué in Corrientes, has at least 11 years of blackbird breeding records (from 1995 to

2006; Fraga *et al.* 1998). However, some of the target species also use agricultural land or other man-made habitats. Saffron-cowled Blackbirds foraged and nested in wheat fields in Entre Ríos province (Fraga *et al.* 1998) and also in nearby Uruguay (Gore & Gepp 1978). The blackbirds commonly foraged and nested in abandoned rice-fields in Paraguay and Corrientes. Abandoned rice-fields also provided habitat for Black-and-white Monjita and several species of breeding and migrating seed-eaters. Chestnut and Marsh seedeaters also occupied small man-made patches of native grasses, particularly with *Erianthus* spp. and *Paspalum* spp. growing along drainage ditches or marshy roadsides.

Recently, natural pastures have also been replaced with intensive agriculture, particularly with soybean crops, and with the extensive plantations of exotic *Pinus* and *Eucalyptus* trees. Soybean agriculture has occupied the most fertile upland soils in Argentina and Uruguay (Paruelo *et al.* 2006) and is steadily advancing in central Paraguay. Forestry has been developed particularly in Corrientes and in Uruguay. Argentinean government sources have reported 330,000 ha of plantations in Corrientes province with pines covering about 60% of this area (Secretaría de Ambiente y Desarrollo Sustentable 2004). These plantations occupy former natural pastures with acid soils, particularly in the northeast along the Río Uruguay (pers. observ.). For instance, Saffron-cowled Blackbird populations may be now extinct in this zone, at Estancia Rincón de las Mercedes (28°19'S, 55°46'W) blackbirds were collected in 1962 (specimens at MACN). The senior author observed a small blackbird flock at this locality in 1997 in a pasture patch partially surrounded by pine plantations. Since then, there have been no reports by us or by other researchers. In Uruguay, pine and eucalypt plantations now cover 35% of the combined area of the departamentos Paysandú and Río

Negro (Paruelo *et al.* 2006) where several of the target species had historical records (Azpiroz 2003).

Few national parks or provincial reserves protect large tracts of natural grasslands in our study area. Unless this situation is reversed, most of the target species will only survive in remote and isolated areas devoted to traditional cattle raising, but those areas are becoming fewer and smaller (Paruelo *et al.* 2006) and the remaining populations might therefore face extinction.

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APPENDIX. New locations and months of records for the target species during the surveys. ¹At: *Alectrurus tricolor*; Ar: *Alectrurus risora*; Xd: *Xolmis dominicanus*; Pp: *Polystictus pectoralis*; Cc: *Culicivora caudacuta*; An: *Anthus nattereri*; Sr: *Sporophila ruficollis*; Sp: *Sporophila palustris*; Sc: *Sporophila cinnamomea*, Xf: *Xanthocephalus flavus*.

Country - locality	Department	Latitude	Longitude	Species ¹									
				At	Ar	Xd	Pp	Cc	An	Sr	Sp	Sc	Xf
PARAGUAY													
Estancia Lago Ypoa	Paraguari	25°59'57"S	57°24'44"W						Aug		Mar	Mar	
Arroyo Aguaray	Ñeembucú	26°52'49"S	57°30'23"W							Mar			
Estancia Guazú Cuá	Ñeembucú	26°52'20"S	57°59'28"W						Mar				
Estancia Isla Alta	Misiones	26°45'45"S	56°43'17"W	Mar, Aug									
Estancia La Graciela	Misiones	26°34'54"S	56°49'19"W		Mar							Mar, Aug	
Isla Yaciretá	Itapúa	27°25'S	56°43'W					Aug					
Estancia La Yegreña	Itapúa	26°43'08"S	56°00'12"W	Oct									
Carmen del Paraná	Itapúa	27°15'S	56°08'W					Sep					
Estancia Roa Cué	Caazapá	26°33'23"S	56°06'56"W					Mar				Mar, Aug	
Arrozal Oest	Caazapá	26°29'33"S	56°18'00"W		Mar							Mar, Aug	
ARGENTINA													
Corrientes Province													
Estancia La Guayna	Ituzaingó	27°45'44"S	56°04'07"W					Jul	Nov				Jul
Near Monte Mberity	Santo Tomé	28°25'24"S	56°15'00"W						Jul				
Estancia El Triunfo	Santo Tomé	28°37'49"S	56°08'15"W		Dec				Dec		Dec		
Estancia Santa Isabel	Alvear	28°34'35"S	56°32'49"W			Dec							Dec
Bañado Santa Rosa	Alvear	28°57'04"S	56°34'13"W			Jul, Dec							Dec
Estancia San Jorge	San Martin	28°58'27"S	56°40'57"W			Jul							
Entre Ríos Province													
Estancia El Potrero	Gualedguaychú	32°57'42"S	58°25'36"W				Nov			Nov			
Estancia La Calera	Gualedguaychú	33°24'30"S	58°36'25"W			Nov	Nov						
Reserva Malabrigo	Gualedguaychú	32°54'06"S	58°45'50"W							Nov			
Ibicuy	Islas de Ibicuy	33°43'45"S	59°06'01"W										
URUGUAY													
Quebrachos	Paysandú	32°01'55"S	57°51'15"W			Apr				Nov			
Arroyo Bellaco	Río Negro	32°35'10"S	58°04'22"W									Nov	

