ARTIGO

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Birds from Rio Pandeiros, southeastern Brazil: a wetland in an arid ecotone

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RESUMO: Aves do Rio Pandeiros, sudeste do Brasil: uma área alagável em um ecótono árido. O Rio Pandeiros é um afluente da margem esquerda do Rio São Francisco que nasce no norte do estado de Minas Gerais, sudeste do Brasil. Esta região se localiza em um ecótono entre três ecorregiões: Cerrado (o tipo de vegetação predominante), Caatinga e as Florestas Secas do Nordeste, o que proporciona alta diversidade de tipos de habitat. Este artigo apresenta o resultado de observações realizadas na região durante os últimos nove anos. Uma alta riqueza de aves foi registrada, com 315 espécies. A avifauna local é típica do Cerrado, mas abriga espécies encontradas exclusivamente na Caatinga ou nas Florestas Secas do Nordeste. O grande pântano encontrado ao longo do baixo curso do rio abriga muitas aves aquáticas, mas, ao contrário das expectativas iniciais, nenhum ninhal foi encontrado na área. Informações sobre espécies ameaçadas ou pouco conhecidas, tais como *Laterallus exilis, Nyctiprogne vielliardi, Phylloscartes roquettei* e *Knipolegus franciscanus* são apresentadas, bem como comentários sobre a biogeografia e conservação da região.

PALAVRAS-CHAVE: inventário de aves, Cerrado, floresta decídua, afloramento calcário, pântano, Minas Gerais.

ABSTRACT: The Rio Pandeiros is a left bank tributary of the Rio São Francisco, rising in the north of the state of Minas Gerais, in southeastern Brazil. This region lies in an ecotone between three ecoregions: Cerrado (the prevailing vegetation type), Caatinga and Atlantic Dry Forests, ensuring a high diversity of habitat types. Here we report our observations conducted in the region during the last nine years. We recorded 315 bird species. The avifauna is typical of the Cerrado, but several species typical of the Caatinga or deciduous forests also occur in the region. The large marsh along the river's lower course harboured many waterbirds, but contrary to our expectations, no breeding colonies of waterbirds were found in the area. Several threatened or poorly known species were found, such as *Laterallus exilis, Nyctiprogne vielliardi, Phylloscartes roquettei* and *Knipolegus franciscanus.* Comments on biogeography and conservation are also presented.

KEY-WORDS: bird survey, Cerrado, deciduous forest, limestone outcrop, marsh, Minas Gerais.

In northern state of Minas Gerais, in southeastern Brazil, there is a contact zone between three semi-arid ecoregions: the Cerrado (savannas), the Caatinga (mainly dry thickets) and the Atlantic Dry Forests (Olson *et al.* 2001). At this junction, the Rio Pandeiros forms a large marsh in its lower reaches, forming a wetland within an arid ecotone. This region has a huge biological potential because, in addition to the conservation importance of wetlands (Gibbs 2000), ecotones are known to harbor not only a high species diversity, but also a high number of restricted-range species (Kark *et al.* 2007). Consequently, this region is considered of extremely high biological importance in the conservation of Brazilian diversity (MMA 2007), despite the lack of inventories for almost all biological groups (Drummond *et al.* 2005). Here we present the results of bird surveys along the Rio Pandeiros during the last nine years.

MATERIAL AND METHODS

Study Área

The study area included the entire hydrographic basin of the Rio Pandeiros, a left bank tributary of the Rio São Francisco. The Rio Pandeiros is a small river, 145 km long, with a mean flow of 8 m^3/s during the dry season, reaching 24 m^3/s during the wet season (Fonseca *et al.* 2008). The entire Rio Pandeiros basin is encompassed within the Rio Pandeiros Environmental Protection Area

(hereafter APA Pandeiros), created by State Law 11,901 on 11 September 1995. The study area is located in the municipalities of Januária, Bonito de Minas and Cônego Marinho, and covers 393,060 ha (Nunes *et al.* 2009). The river near its mouth forms a wetland that varies in extent from 3,000 ha (during the dry season) to 5,000 ha (in the wet season) (Azevedo *et al.* 2009), and is entirely protected within a reserve of 6,102 ha, the Rio Pandeiros Wildlife Refuge (RVS Pandeiros), created by State Decree 43,910, on 5 November 2004.

The climate is semi-arid with well-marked dry and wet seasons (Nimer 1989). Mean annual rainfall is 1,000 mm, falling mainly from October to March, but large variations are observed between years. The dry period lasts six months, from April to September. Mean annual temperature is 24°C, with little variation. June is the coldest month (minimal mean 14°C) and January is the hottest month (maximal mean 32°C).

Vegetation in the study area is dominated by Cerrado (see Ribeiro and Walter 1998 for a detailed description of this vegetation), with some plant species typical of the Caatinga. Main phytophysiognomies are: *Cerrado ralo* (43% of the study area; open scrubland with few trees), *cerrado típico/cerradão* (23%; woodland with closed scrub and scattered trees, *cerradão* having a closed canopy), *campo limpo* (5%; pure grassland) and deciduous forest, locally known as "mata seca" (3%), with extensive areas converted to eucalyptus plantation (14%) and artificial pasture (5%) (Fonseca *et al.* 2008). *Veredas,* or *Mauritia flexuosa* palm swamps, are found along the course of smaller creeks. Additional information on the local vegetation can be found elsewhere (Azevedo 1966,

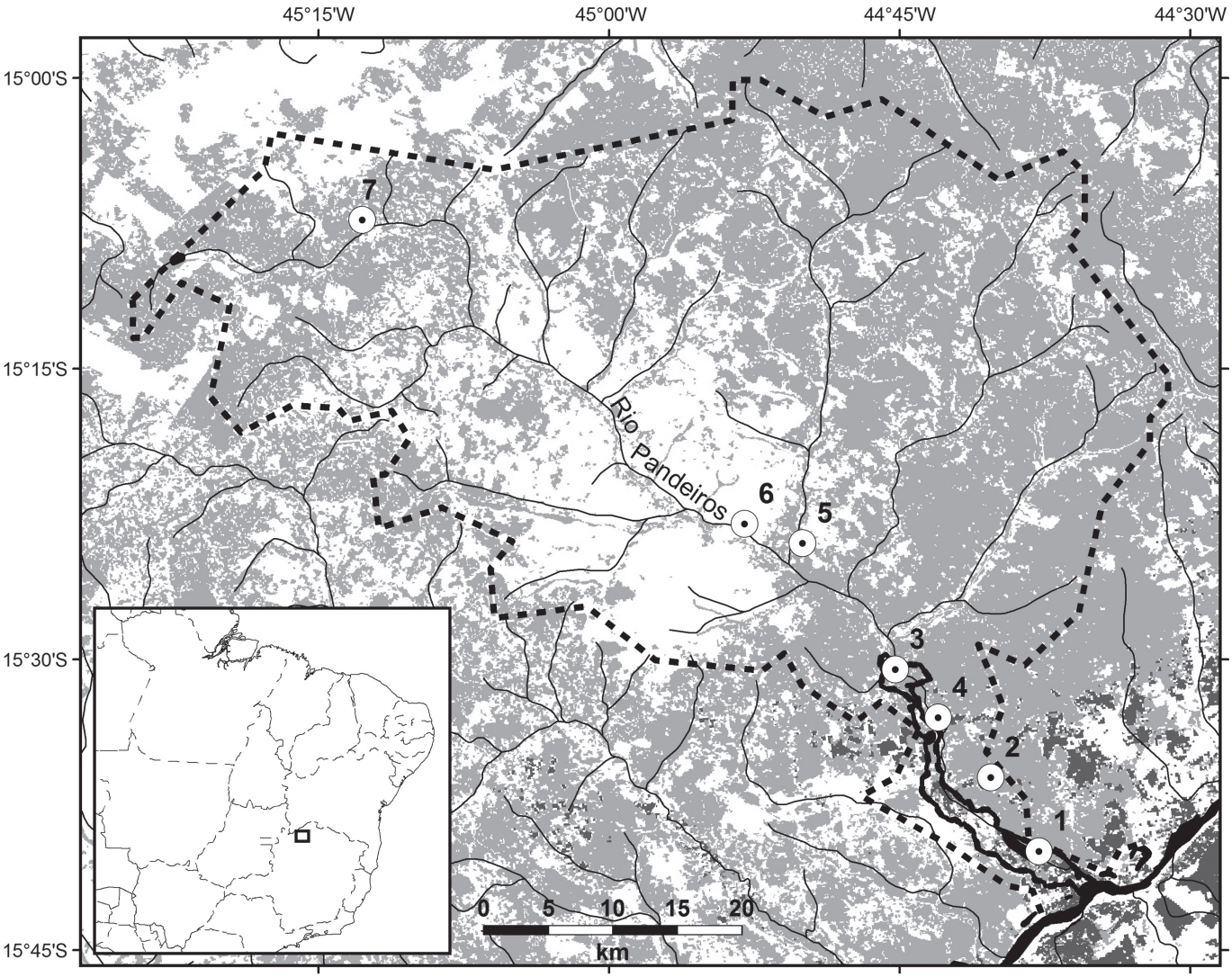

FIGURE 1: Study area. Dashed line indicates the borders of the APA Pandeiros, while the continuous line indicates the borders of the RVS Pandeiros, completely included within the APA Pandeiros. Grayish tones represents fragments of native vegetation, with light gray indicating all phytophysiognomies of the Cerrado, and dark grayish the Atlantic Dry Forests (small patches of semideciduous riparian forests near the Rio Pandeiros mouth were also included here). White areas indicate predominantly cleared land, such as pastures and crops, including also some few patches of other vegetation types, such as stands of macrophytes. Numbers indicates localities sampled: 1 = Fazenda Três Irmãs; 2 = Fazenda Agropop; 3 = Balneário; 4 = Traçadal; 5 = Fazenda Santa Maria da Vereda; 6 = RPPN Almécegas; 7 = Comunidade de Larga.

Ratter *et al.* 1977, Lombardi *et al.* 2005, Bahia *et al.* 2009, Rodrigues *et al.* 2009, Sales *et al.* 2009a,b), as well as color photographs of the study area (Nunes *et al.* 2009). Fieldwork was conducted during a series of visits with different purposes, with the result that avifaunal sampling was non-standardised. The sampled localities (Fig. 1) are briefly described below.

1. Fazenda Três Irmãs (15°39'59"S, 44°37'59"W, 470 m a.s.l.): visited by LEL (19-22 December 2000, 3-6 July 2005, 18-24 February 2007 and 26-29 September 2007), SDN (29 September 2007) and LLM and JMGC (15-17 February 2008 and 4-5 December 2008).
2. Fazenda Agropop (15°36'05"S, 44°40'17"W, 483 m): visited by SDN (31 March and 1 April 2005, 19-23 April 2006, 19 November 2006 and 28-31 March 2007), LLM and JMGC (14 February 2008, 4-5 December 2008 and 4-5 February 2009).
3. Balneário (15°30'30"S, 44°45'13"W, 495 m): visited by SDN (15 April 2003 and 28-30 September 2007), LLM and JMGC (12-13 February 2008, 7 December 2008 and 3 February 2009) and LOL and field assistants (26 February to 5 March, 17-21 May, 5-9 September, October and 22-26 November 2008, when 20 mist-nets were daily set up in this area).
4. Traçadal (15°33'53"S, 44°43'25"W, 580 m): visited by LLM and JMGC (15 February 2008).
5. Fazenda Santa Maria da Vereda (15°24'43"S, 44°50'32"W, 640 m): visited by LLM and JMGC (1-5 July 2008, 8-11 December 2008 and 6-8 February 2009), who set up three mist-nets in this area on 2 and 7 July 2008 and on 10 December 2008.
6. RPPN Almécegas (15°23'24"S, 44°53'10"W, 640 m): a private reserve still being implemented of about 3,400 ha. Visited by LLM and JMGC (8 December 2008 and 7 February 2009).
7. Comunidade de Larga (15°07'18"S, 45°12'44"W, 750 m): briefly visited by JMGC (10 February 2009).

METHODS

The history of scientific exploration of the Rio Pandeiros was reviewed by consulting the literature and museum collections (see Lopes 2008) which revealed the existence of specimens collected in the region and housed in the Museum of Comparative Zoology, Cambridge, USA (MCZ) and in the Museum of Zoology, Universidade de São Paulo, São Paulo, Brazil (MZUSP). Data on specimens housed at MCZ were accessed via the museum's online database (http://www.mcz.harvard.edu/collections/index.html) and at MZUSP via the accession book.

Observations with binoculars were conducted in all expeditions and bird vocalizations were recorded using shotgun microphones Sennheiser ME-66 and ME-67, with Sony TCM-5000 K7 recorder or Sony MZ-NH1 Mini Disc recorder. Copies will be deposited in the Prof. Elias Coelho Pacheco Sound Archive, at the Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil. Mist-nets (12.0 × 2.5 m) were opened in the morning between 06:00-12:00. Specimens were collected with airguns (calibers 4.5 and 5.5 mm) and deposited in the ornithological collection of the Department of Zoology, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil (DZUFMG). Taxonomy follows the Brazilian Ornithological Records Committee (CBRO 2009). Species threatened with extinction at state (Silveira *et al.* 2008), national (Machado *et al.* 2005) and world (BirdLife International 2010) levels are highlighted.

RESULTS

History of Scientific Exploration

The Rio Pandeiros was first explored by José Blaser, who worked at an unspecified locality from 3 December 1931 to 8 February 1932, during which period he collected 100 specimens, 85 deposited at MCZ and 15 at MZSUP, belonging to 47 species. Specimens in MCZ were never studied in detail, but those specimens held at MZUSP were already reported elsewhere (Pinto 1938, 1944). Since then, the area has not been visited by ornithologists, and was mentioned in the literature only in previous communications of this study (*e.g.* Lopes *et al.* 2008b).

Species Composition

We recorded 312 species in the study area. Three other species registered exclusively by Blaser (*Penelope superciliaris, Jabiru mycteria* and *Tringa flavipes*) brings to 315 the number of bird species found in the Rio Pandeiros basin (Appendix). We collected 63 specimens of 29 species that, together with Blaser's skins, increases to 72 those species documented by specimens (Appendix). Eleven species threatened with extinction (Appendix) are associated with habitats under severe human pressure in the state: deciduous forests (*Crypturellus noctivagus zabele, Lepidocolaptes wagleri, Phylloscartes roquettei* and *Knipolegus franciscanus*) and flooded areas, including *veredas* (*Jabiru mycteria, Mycteria americana, Ara ararauna, Ara chloropterus, Primolius maracana, Sporophila collaris* and *S. angolensis*).

Flooded areas provide appropriate habitat for many waterbirds, some of which occur in large numbers at certain seasons, such as *Rostrhamus sociabilis* (see below). Contrary to our expectations, we are unaware of any

breeding colonies of waterbirds in the area. Ciconiiformes were very scarce, and no species of Anatidae, Theskiornithidae and Ardeidae was particularly abundant. Sandy beaches beside the mouth of the Pandeiros provide nest sites for species such as *Sternula superciliaris* (see below), but again none of these species was abundant.

DISCUSSION

The high bird diversity observed may be in part attributable to the transitional nature of the area, as demonstrated by the presence of species endemic to or typical of the Cerrado (*Uropelia campestris, Heliactin bilophus, Melanopareia torquata, Hylocryptus rectirostris, Antilophia galeata, Cyanocorax cristatellus, Neothraupis fasciata* and *Saltatriculla atricollis;* Cavalcanti 1988, Silva and Bates 2002), the Caatinga (*Aratinga cactorum, Sakesphorus cristatus, Thamnophilus capistratus, Myrmorchilus s. strigilatus* and *Paroaria dominicana;* Pacheco 2003, Assis *et al.* 2007) and the deciduous forests (*Lepidocolaptes wagleri, Pseudoseisura cristata, Knipolegus franciscanus* and *Phylloscartes roquettei;* Silva and Oren 1992, Zimmer and Whittaker 2000, Olmos 2005). Some species associated to the interior Atlantic Forest are also present (*Aratinga auricapillus* and *Trogon s. surrucura;* Silveira *et al.* 2005, Vasconcelos and D'Angelo Neto 2007).

Noteworthy Records

Crypturellus undulatus

According to former hunters, this tinamou has always been rare in the region, and was considered locally extinct due to hunting. Nevertheless, following the implementation of the RVS Pandeiros, one or two pairs reappeared in the area in late 2006. Our first record was in September 2007, when we heard its typical song at Fazenda Três Irmãs.

Rostrhamus sociabilis

Migratory in the region, with flocks of > 50 birds observed roosting together at the end of the wet season (February). During July, September and December (dry season and early wet season), only one or two adults were observed during each visit to the study area, suggesting that most of the population, although no all individuals, is migratory.

Laterallus exilis

A male (DZUFMG 5524) collected on 28 September 2007 is the first record of the species in Minas Gerais (Mattos *et al.* 1993). This is a very secretive species, even after playback, which inhabits dense stands of macrophytes in marshes. Nevertheless, once its voice is known, it is easily detected, and about eight birds were recorded in a single day of fieldwork.

Sternula superciliaris

Two nests were found on sand beaches at the mouth of the Rio Pandeiros on 29 September 2007. The eggs were laid directly on the ground, in a shallow depression. One nest had three eggs (measuring 30.6 × 24.1; 31.7 × 24.0 and 31.8 × 22.6 mm) and the other had two eggs (29.6 × 24.7 and 30.1 × 24.4 mm). We suspect that this species, together with *Phaetusa simplex* and *Rhynchops niger,* is in decline in the São Francisco Valley due to changes in hydrological regime caused by hydropower plants and disturbance at nesting colonies.

Ara chloropterus

Critically Endangered in the state, with the few recent records all in the north (Mattos *et al.* 1991) and northwest (Lopes *et al.* 2008a, Faria *et al.* 2009), all of them in Cerrado. In the formerly forested eastern Minas Gerais, into the Atlantic Forest domains, this species is now extinct (Vasconcelos 2007). On 21 and 22 April 2006, SDN observed two pairs flying over a *vereda* at Fazenda Agropop, c. 70 km east of Serra das Araras, one of the few sites in the state where this species breeds (SDN *pers. obs.*).

Crotophaga major

Migratory in the region, with records only during the wet season (February). There are few previous records in Minas Gerais (Pinto 1952, Vasconcelos and D'Angelo Neto 2007), although LEL has unpublished records from Rio Doce State Park (19°49'S, 42°41'W) in February 2003 and from Fazenda Faroeste, in the municipality of Arcos (20°16'S, 45°39'W) on 6 January 2006.

Nyctibius griseus

A nest was found in a *cerrado* on 21 December 2000, in a legume tree (Fabaceae). The single nestling, about two-thirds of adult size, was perched in front of a shallow depression in the top of a bell-shaped horizontal branch (3.5 m above the ground), where the egg was presumably laid.

Nyctibius grandis

A male collected on 27 September 2007 weighed 610 g and had enlarged tests (9 mm). It was collected

beside a marsh, in a patch of *cerradão* degraded by selective logging and severe cattle grazing. The species was also recorded by Mattos *et al.* (1991) in the nearby municipality of Janaúba.

Nyctiprogne vielliardi

One was mist-netted and photographed on 16 February 2008 (M. C. Nascimento and C. G. Pinto, pers. comm.), at the border of the marsh, near Fazenda Três Irmãs. Restricted to the São Francisco Valley, in northern Minas Gerais and Bahia (Whitney *et al.* 2003, Kirwan *et al.* 2004, Vasconcelos *et al.* 2006). SDN tape-recorded this species near Lagoa da Vazante (15°24'43"S, 44°07'34"W, 465 m), Jaíba, on 3 November 2007.

***Picumnus* sp.**

We were unable to certainly identify the *Picumnus* found in the area. Both *P. albosquamatus* and *P. pygmaeus* could occur, but our observations involved birds that looked like neither of these species. We suspect that hybrids between these species or even an undescribed taxon may be involved. An interspecific pair of these species has previously been recorded in the Sítio Recanto, municipality of Grão Mogol, northern state (Vasconcelos and D'Angelo Neto 2007).

Hemitriccus striaticollis

Although its occurrence in northern Minas Gerais is usually not cited in general manuals and field guides (Pinto 1944, Ridgely and Tudor 1994, Sick 1997), it is locally common in flooded riparian forests and *veredas* in the region (Mattos *et al.* 1991, Kirwan *et al.* 2001, 2004, Vasconcelos *et al.* 2006, Lopes *et al.* 2008a, Faria *et al.* 2009).

Poecilotriccus plumbeiceps

A pair observed in a dense thicket at Fazenda Três Irmãs on 19 February 2007 extends the known range northwest to the left bank of the Rio São Francisco. There are several other records of this species in northern Minas Gerais, southeast of the study area (Vasconcelos and D'Angelo Neto 2007).

Phyllomyias reiseri

Endemic to the dry forests of central Brazil and Paraguay (Silva 1996, Pacheco and Olmos 2006), along the "Pleistocenic Arc" (Prado 2000). Tape-recorded on 1 April 2005 in Fazenda Agropop in a large mixed species flock with more than ten species. In this same day and area, three other dry forest specialists were recorded: *Lepidocolaptes wagleri, Cranioleuca semicinerea* and *Phylloscartes roquettei.*

Stigmatura budytoides

Common in thickets and scrubby areas along the river, where several groups were observed in a single morning. The subspecies *S. b. gracilis,* which is restricted to northeastern Brazil, was discovered in Minas Gerais only recently (Kirwan *et al.* 2001), but is locally common in the lowlands of the middle São Francisco Valley, where it is restricted to river's margins.

Phylloscartes roquettei

Very rare and threatened with extinction, a summary of its range and conservation status has been presented elsewhere (Lopes *et al.* 2008b).

Knipolegus franciscanus

Poorly known but common in deciduous forests on limestone outcrops in central-eastern Brazil, with unpublished records for Parque Estadual da Mata Seca, municipality of Manga (14°53'S, 43°58'W, 480 m), Tejuco, municipality of Januária (15°33'41"S, 44°30'52"W, 575 m, DZUFMG 5520-5523), Lagoa das Pedras, municipality of Capitão Enéas (16°18'S, 43°44'W, 530 m, DZUFMG 5607-5610) and Fazenda Corredor, municipality of Bocaiúva (17°23'20"S, 43°53'44"W, 880 m, DZUFMG 4337), all of them in Minas Gerais. A single male was also collected at Fazenda Ribeirão, near FERCAL, municipality of Sobradinho, Distrito Federal (15°30'36"S, 47°57'46"W, 775 m, DZUFMG 6168).

Compsothraupis loricata

Common in the study area, with large flocks of up to 10-15 birds seen daily. Individuals exhibiting the scarlet throat and center of chest, characteristic of adult males (Isler and Isler 1987), are rarely observed in Minas Gerais. Among > 100 individuals we observed, only one (DZUFMG 5538) showed this character. Two other males collected on the same date, 23 February 2007, which had enlarged tests (> 4.5 mm), indicative of sexual maturity, lacked the distinctive scarlet patch.

Sporophila collaris

Four adult males (DZUFMG 5545, 5547-5549) collected in February 2007 exhibited enlarged tests (ranging from 5-9 mm), indicating that the species breeds in the area. All of these birds had the black-and-white plumage described by Kirwan (2007) for birds from the São Francisco Valley.

Conservation

The Rio Pandeiros basin has a long history of human occupation, which has resulted in severe impacts on the native vegetation, none of which is pristine. Prevailing land use consists of extensive cattle ranching, subsistence crops, eucalyptus plantations and production of wood charcoal (Nunes *et al.* 2009). Human population is low (estimated at c. 8,200 inhabitants, Fonseca *et al.* 2008), and the people are generally very poor (Nunes *et al.* 2009) and lack access to agricultural machinery, especially in the marsh area. Consequently, land use methods are still primitive, and large-scale land clearance is generally not observed, but human-set fires are common. As a result, the landscape is a matrix of *cerrado,* sometimes used for extensive cattle ranching, intermingled with abandoned pastures and crops, as well as secondary forests. Such a mosaic of different successional stages results in high environmental heterogeneity, which in part contributes to the high bird diversity. Nevertheless, sensitive species dependent on well-preserved forests, such as *Xiphocolaptes falcirostris,* were not recorded. If such species still occur in the region, they are presumably scarce due to the intensive logging promoted by decades of illegal charcoal production.

Local fauna is also affected by the PCH Pandeiros, a dam, constructed in 1957, which covers 280 ha (Fonseca *et al.* 2008) and affects the river's flood pulse to an unknown extension. This is probably one of the causes of episodes of fish mortality in the basin (Ribeiro 2007), but its impacts on avifauna are unknown.

The creation of a reserve in the Rio Pandeiros wetland was long demanded by environmentalists, because the area is acknowledged as one of the most important sites for migratory fish breeding in the middle Rio São Francisco (Sato and Godinho 2003). Nevertheless, the creation of RVS Pandeiros resulted in a series of human conflicts in the region. Traditionally, people living in the Rio Pandeiros basin have relied on natural resources, especially fishing, plant extraction and charcoal production (Nunes *et al.* 2009). These people subtly were prohibited to explore their sources of food and money, and they were not compensated for loss of access to these resources (Fisher *et al.* 2005), which led to considerable dissatisfaction that resulted in some violence (Furtado and Pinheiro 2006b). This clearly demonstrates that the creation of such reserves can not be done without involving the local communities, especially the poorest constituents (Fisher *et al.* 2005).

Recent projects implemented by the IEF ("State Forestry Institute of Minas Gerais"), such as the "Projeto Pandeiros", are improving the relationship between local people and IEF officers, researchers and environmentalists. This project is promoting new forms of income for traditional people, such as beekeeping, production of charcoal from the "babaçu" palm fruit (*Orbignya phalerata*) and the extraction of local fruits, such as the "pequi" (*Caryocar brasiliense*) (Furtado and Pinheiro 2006a, Guimarães 2008, Nunes *et al.* 2009). This project, still in its early stages, has contributed significantly to the reduction of logging in the region (Guimarães 2008). Nevertheless, much remains to be done, and illegal hunting, fishing and logging still occur. Human-set fires and the drainage of *veredas* to grow crops, are also common and, as a result, 63 small tributaries of the Rio Pandeiros have dried up during recent years (Nunes *et al.* 2009).

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APPENDIX

Bird species recorded in the Rio Pandeiros basin, northern Minas Gerais, southeastern Brazil. Detection: a = heard, c = collected, g = tape-recorded, r = mist-netted, v = observed. Status: conservation status at State (S), National (N) or World (W) levels, with superscripted letters indicating the threaten category: DD = Data Deficient, NT = Near Threatened, VU = Vulnerable, EN = Endangered, CR = Critically Endangered. Localities: X = unspecified locality visited by J. Blaser, 1 = Fazenda Três Irmãs, 2 = Fazenda Agropop, 3 = Balneário, 4 = Traçadal, 5 = Fazenda Santa Maria da Vereda, 6 = RPPN Almécegas, 7 = Comunidade de Larga. Month of record: numbered from 1 (January) to 12 (December). Museums: DZUFMG = Department of Zoology, Universidade Federal de Minas Gerais, MCZ = Museum of Comparative Zoology, MZUSP = Museum of Zoology, Universidade de São Paulo.

Taxa	Detection	Status	Localities	Month of record	Museum
Tinamiformes					
Tinamidae					
Crypturellus undulatus	a,g,v		1	9	
Crypturellus noctivagus	a,g	N^{NT},W^{NT}	1,2	2,9,11,12	
Crypturellus parvirostris	a,v		1,2,3,5,7	2,3,4,9,12	
Crypturellus tataupa	a,v		2,3	2,11	
Nothura boraquira	a,v		1,2,3,4	2,3,4,7,9,12	
Nothura maculosa	a		2	3,4	
Anseriformes					
Anhimidae					
Anhima cornuta	a,g,v		X,1,2	1,2,4,7,9,12	MCZ,MZUSP
Anatidae					
Dendrocygna viduata	a,v		1,2,3,5	2,3,4,7,9,12	
Dendrocygna autumnalis	a,f,v		1,2,3	2,4,12	
Cairina moschata	v		1,2	2,4,9,12	
Amazonetta brasiliensis	a,v		1,2,3	2,3,4,7,9,11	
Galliformes					
Cracidae					
Penelope superciliaris			X	1	MCZ
Podicipediformes					
Podicipedidae					
Tachybaptus dominicus	v		1	2	
Pelecaniformes					
Phalacrocoracidae					
Phalacrocorax brasilianus	c,v		1,2,3	2,4,7,9,12	DZUFMG
Anhingidae					
Anhinga anhinga	f,v		2,6	2,3,4	
Ciconiiformes					
Ardeidae					
Tigrisoma lineatum	a,v		X,1,2,3,5	1,2,7,9,12	MCZ,MZUSP
Ixobrychus exilis	c,v	S^{DD}	1	2,9	DZUFMG
Nycticorax nycticorax	a,v		1,2,3	2,4,7,9,12	
Butorides striata	a,v		X,1,2,3	1,2,7,9,12	MCZ
Bubulcus ibis	v		1,2,3	2,3,4,7,9,11	DZUFMG
Ardea cocoi	v		X,1,2,3,5	1,2,9,11,12	MCZ
Ardea alba	f,v		X,1,2,3,4,5	1,2,4,7,9,12	MCZ
Syrigma sibilatrix	v		1,2,4	2,4,7,9	
Pilherodius pileatus	v		2	2,4	
Egretta thula	v		X,1,2,3,4,5	1,2,7,9,11,12	MCZ
Threskiornithidae					
Mesembrinibis cayennensis	a,v		1,2,3	2,4	
Phimosus infuscatus	f,v		X,1,2,3	1,2,7,9,12	MCZ,MZUSP
Theristicus caudatus	a,v		1,2,5	2,3,4,7,9,12	
Ciconiidae					
Jabiru mycteria		S^{EN}	X	1	MCZ

Taxa	Detection	Status	Localities	Month of record	Museum
Mycteria americana	v	S^{VU}	1	7	
Cathartiformes					
Cathartidae					
Cathartes aura	v		1,2,3	2,3,4,9,11,12	
Cathartes burrovianus	v		1,2,3,5,6	2,3,4,7,9,11,12	
Coragyps atratus	v		1,2,3,5	2,7,9,12	
Sarcoramphus papa	v	S^{DD}	2	4	
Falconiformes					
Pandionidae					
Pandion haliaetus	v		1,2	2,11,12	
Accipitridae					
Gampsonyx swainsonii	v		X,2	1,11	MCZ
Elanus leucurus	v		1,2	4,9,11	
Rostrhamus sociabilis	a,c,f,v		X,1,2,3	2,7,9,12	DZUFMG,MCZ
Ictinia plumbea	v		2	4	
Geranospiza caerulescens	v		1,2,3	2,4,9,	
Heterospizias meridionalis	v		1,2,3,7	2,4,9	
Rupornis magnirostris	a,v		1,2,3,5	2,4,7,9,11,12	
Buteo albicaudatus	v		2,3	2,4	
Buteo nitidus	a,v		2	4	
Buteo brachyurus	v		2	4	
Buteo albonotatus	v		1	9	
Falconidae					
Caracara plancus	a,f,v		1,2,3,5	2,4,9,11,12	
Milvago chimachima	a,v		X,1,2,3,4,5,7	2,3,4,7,9,11,12	MCZ
Herpetotheres cachinnans	a,v		X,1,2,3,5,6,7	1,2,3,4,7,9,12	MCZ
Micrastur semitorquatus	a,g,v		1,2,3	2,11	
Falco sparverius	a,v		1,2,3	2,4,9,12	
Falco rufigularis	v		2	11	
Falco femoralis	v		1,2,5	4,7,9,12	
Gruiformes					
Aramidae					
Aramus guarauna	a,v		1,2,3	2,4,7,9	
Rallidae					
Aramides ypecaha	a,g,v		X,1,2,5	1,2,4,7,9,12	MZUSP
Aramides cajanea	a		2	4	
Laterallus exilis	a,c,g,v		1	9	DZUFMG
Porzana albicollis	a,g,v		1,2	4,7,9	
Pardirallus nigricans	a		1,2	4,9	
Gallinula chloropus	v		1,3	2,12	
Porphyrio martinica	v		1	7	
Cariamidae					
Cariama cristata	a,v		1,2,3,5	2,3,4,7,8,9,11,12	
Charadriiformes					
Charadriidae					
Vanellus cayanus	a,v		1,3	2,9,12	
Vanellus chilensis	a,g,v		1,2,3,6	2,3,4,7,9,11,12	
Charadrius collaris	a,v		1	9	DZUFMG
Recurvirostridae					
Himantopus melanurus	a,v		1	2,7,9	
Scolopacidae					
Gallinago paraguaiae	v		1	9	
Tringa solitaria	f,v		2	2,12	
Tringa flavipes			X	2	MCZ
Jacanidae					
Jacana jacana	a,g,v		X,1,2,3,4	1	MCZ

Taxa	Detection	Status	Localities	Month of record	Museum
Sternidae					
Sternula superciliaris	v		1	1,2,7,9,12	
Phaetusa simplex	a,f,v		1	2,7,9,12	
Rynchopidae					
Rynchops niger	a,v		1	9	
Columbiformes					
Columbidae					
Columbina minuta	a,v		2,6	2,4	
Columbina talpacoti	a,v		1,2,3,4,5	2,3,4,5,7,8,9,11,12	
Columbina squammata	a,g,v		X,1,2,3,4,5,6,7	1,2,4,5,7,8,9,11,12	MCZ,MZUSP
Columbina picui	a,v		1,2,3,5,6,7	2,4,5,7,8,9,11,12	
Claravis pretiosa	r,v		2,3	2,4,12	
Uropelia campestris	c,v		1,2	2,4,7	DZUFMG
Columba livia	v		3	2	
Patagioenas picazuro	a,v		1,2,3,4,5	2,4,7,8,9,11,12	
Patagioenas cayennensis	v		X,1,2	1,2,4	MCZ
Zenaida auriculata	v		X,2,3,5	2,4	MCZ
Leptotila verreauxi	a,g,v		X,1,2,3,4,5,7	1,2,4,7,9,11,12	MCZ
Leptotila rufaxilla	a		2	4	
Psittaciformes					
Psittacidae					
Ara ararauna	a,v	S[VU]	X,1,2,6	1,2,4,11,12	MCZ
Ara chloropterus	a,v	S[CR]	2	4	
Orthopsittaca manilata	a,v		2	4,11,12	
Primolius maracana	a,v	W[NT]	2	4	
Diopsittaca nobilis	a,v		X,2,3	1,2,4	MCZ,MZUSP
Aratinga leucophthalma	a,v		1,2,3,5	2,4,7,9,11	
Aratinga auricapillus	a,v		2	4	
Aratinga aurea	a,v		X,1,2,3,5,6,7	1,2,4,5,7,8,9,12	MCZ,MZUSP
Aratinga cactorum	a,g,v		X,1,2,3,4,5,6	1,2,4,5,7,8,9,11,12	MCZ,MZUSP
Forpus xanthopterygius	a,v		1,2,3,5,6,7	2,3,4,7,9,11,12	
Brotogeris chiriri	a,g,v		X,1,2,3,4,5	1,2,3,4,5,7,8,9,11,12	MCZ,MZUSP
Pionus maximiliani	a,v		2,3	4,9,12	
Amazona aestiva	a,v		1,2,3,4,5,6	2,4,7,9,12	
Cuculiformes					
Cuculidae					
Piaya cayana	a,c,v		X,1,2,3,5,6	1,2,4,7,9,11,12	DZUFMG,MCZ
Coccyzus melacoryphus	r,v		2,3	2,4,12	
Crotophaga major	a,v		1,2,3	2,4	
Crotophaga ani	a,g,v		1,2,3,4,5,6	2,3,4,9,11,12	
Guira guira	a,v		X,1,2,3,5	2,3,4,7,9,11,12	MCZ
Tapera naevia	a,v		1,2,3,5	2,4,7,9,11,12	
Strigiformes					
Tytonidae					
Tyto alba	a,v		1,2,5	2,4,7	
Strigidae					
Megascops choliba	a,v		X,1,2,3,5,6	1,2,4,7,9,12	MCZ
Glaucidium brasilianum	a,r,v		1,2,3	2,4,7,9,12	
Athene cunicularia	a,v		X,1,2,3,5,6	1,2,3,4,7,9,11,12	MCZ
Caprimulgiformes					
Nyctibiidae					
Nyctibius grandis	a,c,v		1	9	DZUFMG
Nyctibius griseus	a,f,g,v		1,3	2,9,12	
Caprimulgidae					
Lurocalis semitorquatus	a,g,v		3	9	
Nyctiprogne vielliardi	f,v	N[DD],W[NT]	1	2	
Podager nacunda	v		3	9	

Taxa	Detection	Status	Localities	Month of record	Museum
Nyctidromus albicollis	a,f,g,v		1,2,3,6	2,4,7,9,11,12	
Caprimulgus parvulus	a		2,3	9,11	
Hydropsalis torquata	v		5	7	
Apodiformes					
Apodidae					
Streptoprocne zonaris	a,v		1	9,12	
Tachornis squamata	a,v		1,2,3,5	2,4,7,12	
Trochilidae					
Phaethornis pretrei	a,r,v		1,2,3,5	2,4,7,9,12	
Eupetomena macroura	a,v		1,2,3,5,6	2,4,7,9	
Colibri serrirostris	a		5	12	
Anthracothorax nigricollis	v		3	9	
Chrysolampis mosquitus	v		2,3	4,9	
Chlorostilbon lucidus	a,r,v		1,2,3	2,4,5,8,9,11	
Thalurania furcata	r,v		2,3	4,9,12	
Polytmus guainumbi	c,v		1	2,9	DZUFMG
Amazilia fimbriata	a,r,v		1,2,3	2,4,9,11,12	
Heliactin bilophus	c,v		1	2,9	DZUFMG
Heliomaster squamosus	a,f,v		2,3,5,7	2,4,7,9	
Trogoniformes					
Trogonidae					
Trogon surrucura	a,g,v		1,2,5	2,4,7,9,12	
Coraciiformes					
Alcedinidae					
Megaceryle torquata	a,v		1,2,3,5	2,4,7,8,9,12	
Chloroceryle amazona	a,v		1,2,3	2,4,7,9,12	
Chloroceryle americana	a,r,v		1,2,3	2,4,7,9,12	
Galbuliformes					
Galbulidae					
Galbula ruficauda	a,r,v		1,2,3,4,5	4,12	
Bucconidae					
Nystalus chacuru	a,v		2,5	4,12	
Nystalus maculatus	a,v		X,1,2,3,5,7	1,2,4,7,8,12	MCZ,MZUSP
Nonnula rubecula	v		1,2	2,4	
Piciformes					
Ramphastidae					
Ramphastos toco	a,v		2,5	4,7	
Picidae					
Picumnus sp.	a,g,v		1,2,3,5,6	2,4,7,9,12	
Melanerpes candidus	a,v		1,2,3,4,5	2,4,5,7,9,12	
Veniliornis passerinus	a,r,v		X,1,2,3,5	1,2,4,5,7,8,9,11,12	MCZ
Piculus chrysochloros	a,r,v		2,3	2,4,9,11,12	
Colaptes melanochloros	a,v		1,2,3,5	2,7,8,9,11,12	
Colaptes campestris	a,v		X,1,2,3,5	2,4,7,9,11,12	MCZ
Celeus flavescens	a,v		1,2,3,5	2,4,12	
Dryocopus lineatus	a,v		1,2,3,5	2,4,7	
Campephilus melanoleucos	a,v		X,1,2	1,2,3,4,9,12	MCZ
Passeriformes					
Melanopareiidae					
Melanopareia torquata	a,v		1	2,9	
Thamnophilidae					
Taraba major	a,g,v		1,2,3,4,5,6	2,4,7,8,9,12	
Sakesphorus cristatus	a,v		2	4	
Thamnophilus capistratus	a,c,g,r,v		1,2,3,5	2,4,5,7,8,9,12	DZUFMG
Thamnophilus torquatus	a,c,g,v		1,5,7	2,7,9,12	DZUFMG
Thamnophilus pelzelni	a,r,v		1,2,3,4,5	2,4,7,9,11,12	
Myrmorchilus strigilatus	a,v		2	4	

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Herpsilochmus sellowi	a,v		2	4,9	
Herpsilochmus atricapillus	a,g,r,v		2,3,5	2,4,5,7,8,9,11	
Formicivora melanogaster	a,c,r,v		1,2,3,5,6	2,4,7,9,12	DZUFMG
Formicivora rufa	a,v		1,3	2,7,9	
Dendrocolaptidae					
Sittasomus griseicapillus	a,g,r,v		1,2,3,5	2,4,7,9,11,12	
Dendrocolaptes platyrostris	a,g,v		1,2,3	4,8,9	
Lepidocolaptes angustirostris	a,r,v		X,1,2,3,5,6	2,4,7,9,11,12	MCZ
Lepidocolaptes wagleri	a,g,v	S^{DD},N^{VU}	2,5	4,7,9	
Campylorhamphus trochilirostris	a,v		1,2	2,12	
Furnariidae					
Furnarius figulus	a,v		1,2	2,4,9	
Furnarius leucopus	a,c,r,v		1,2,3,5,6	2,4,5,7,8,9,11,12	DZUFMG
Furnarius rufus	a,v		1,2,3,4,5,6,7	2,4,5,7,8,9,11,12	
Schoeniophylax phryganophilus	a,v		1,2	2,4	
Synallaxis frontalis	a,g,r,v		1,2,3,4,5,6	2,4,5,7,9,12	
Synallaxis albescens	a,g,v		2,3,4,6	2,4,12	
Synallaxis scutata	a,g,v		2	4	
Cranioleuca vulpina	a,c,r,v		1,2,3	2,4,7,9	DZUFMG
Cranioleuca semicinerea	a,g,v		2	4,11	
Certhiaxis cinnamomeus	a,g,v		1,2,3,4	2,4,7,9,11,12	
Phacellodomus rufifrons	a,g,v		1,2,3,5	2,4,5,7,9,11,12	
Phacellodomus ruber	a,v		1,2,5,6	2,4,7,9,12	
Pseudoseisura cristata	a,c,g,v		1,2,3	2,4,7,9,11,12	DZUFMG
Hylocryptus rectirostris	a,r,v		1,3,5	2	
Xenops rutilans	a,v		2	4	
Tyrannidae					
Leptopogon amaurocephalus	a,r,v		2,3	2,4,9,12	
Hemitriccus striaticollis	a,f,v		X,1,2,5	2,4,7,9	MCZ
Hemitriccus margaritaceiventer	a,f,g,v		1,2,3,5	2,4,7,9,11,12	
Poecilotriccus plumbeiceps	a,v		1	2	
Poecilotriccus latirostris	a,r,v		3	2,9	
Todirostrum cinereum	a,v		1,2,3	2,4,7,9,11,12	
Phyllomyias reiseri	a,g,v	S^{DD}	2	4,11	
Phyllomyias fasciatus	a,g,v		2,3	2,4	
Myiopagis caniceps	a,v		1,2,3	2,4,11	
Myiopagis viridicata	a,g,r,v		1,2,3,4,5	2,4,11,12	
Elaenia flavogaster	a,g,v		1,2,3,5,6	2,4,7,9,12	
Elaenia spectabilis	a,v		2	4	
Elaenia cristata	a,v		1,2	4,9	
Camptostoma obsoletum	a,g,r,v		1,2,3,4,5	2,4,5,7,8,9,12	
Suiriri suiriri	a,g,v		1,2,6	2,4,7,9	DZUFMG
Phaeomyias murina	a,r,v		1,2,3	4,9	
Euscarthmus meloryphus	a		2	4	
Stigmatura budytoides	a,c,g,v		1	2,7,9,12	DZUFMG
Phylloscartes roquettei	a,g,v	S^{EN},N^{CR},W^{EN}	2	4	
Sublegatus modestus	a,v		1,2	4,9	
Tolmomyias sulphurescens	a,g,r,v		2,3	2,4,9,11,12	
Tolmomyias flaviventris	a,r,v		1,2,3	2,4,7,9,11,12	
Myiophobus fasciatus	a,v		1,2,3	4,9,11	
Myiobius atricaudus	r,v		2,3	4,12	
Hirundinea ferruginea	a,v		2	4,9	
Lathrotriccus euleri	a,v		1,2,3,4,5	2,4,7,9,11,12	
Cnemotriccus fuscatus	a,r,v		1,2,3	4,7,9	
Contopus cinereus	a,g,v		2	4	
Pyrocephalus rubinus	v		1	7	
Knipolegus franciscanus	a,v	N^{NT},W^{NT}	2	4,9	

Taxa	Detection	Status	Localities	Month of record	Museum
Satrapa icterophrys	v		1,2,3	2,7,12	
Xolmis cinereus	v		2	4,12	
Xolmis irupero	c,v		1,2	2,4,7,9,12	DZUFMG
Fluvicola albiventer	v		1	9	
Fluvicola nengeta	a,v		1,2,3	2,4,7,9,11,12	
Arundinicola leucocephala	v		1,2,3,4	2,7,9,12	
Colonia colonus	v		2	4	
Machetornis rixosa	a,v		X,1,2,3	1,2,4,9,11,12	MCZ
Legatus leucophaius	a,r,v		1,3,4	2,12	
Myiozetetes cayanensis	a,v		X,2,3,5	1,2,12	MCZ
Myiozetetes similis	a,r,v		1,2,3,4,5	2,4,7,9,11,12	
Pitangus sulphuratus	a,g,v		X,1,2,3,4,5,6	1,2,4,5,7,8,9,11,12	MCZ,MZUSP
Philohydor lictor	a,v		1	2,9,12	
Myiodynastes maculatus	a,r,v		1,2,3,5,6	2,9,11,12	
Megarynchus pitangua	a,r,v		1,2,3,5	2,7,8,9,12	
Empidonomus varius	a,v		2	11	
Griseotyrannus aurantioatrocristatus	a,v		1,2,3	9,11,12	
Tyrannus albogularis	a,g,v		X,1,3	7,9,12	MCZ
Tyrannus melancholicus	a,r,v		1,2,3,5,6	2,4,7,8,9,11,12	
Tyrannus savana	a,v		1,2,3,4	2,9,11,12	
Sirystes sibilator	a,g,v		2	4,9	
Casiornis fuscus	v		1	7	
Myiarchus swainsoni	a,v		1,2,3,5	2,7,12	
Myiarchus ferox	a,v		1,2,3,4,5	2,4,7,9,12	
Myiarchus tyrannulus	a,g,r,v		1,2,3,5	2,4,7,9,11,12	
Pipridae					
Neopelma pallescens	a,r,v		3	2,9	
Antilophia galeata	a,v		1,5	2,7,12	
Tityridae					
Tityra inquisitor	a,v		2	11	
Tityra cayana	a,r,v		1,2,3,5	2,4,7,12	
Pachyramphus viridis	a,r,v		1,2,3	2,4,7,9,11	
Pachyramphus polychopterus	a,r,v		1,2,3	2,4,9,11,12	
Pachyramphus validus	a,v		2	11	
Vireonidae					
Cyclarhis gujanensis	a,g,r,v		1,2,3,4,5,6	2,4,5,7,8,9,11,12	
Vireo olivaceus	a,v		2,3	2,11	
Hylophilus amaurocephalus	a,v		1,2	4,7,11	
Corvidae					
Cyanocorax cristatellus	a,v		X,1,2,3	1,4,5,7	MCZ
Cyanocorax cyanopogon	a,g,r,v		1,2,3,4,5,6	2,4,7,8,9,11,12	
Hirundinidae					
Pygochelidon cyanoleuca	a,v		2,3	4,9,11	
Stelgidopteryx ruficollis	a,v		1,2,3,5	2,4,7,9,11,12	
Progne tapera	a,v		1,3,4,5	2,7,9,12	
Tachycineta albiventer	v		1,3	2,12	
Tachycineta leucorrhoa	v		3	2,5,8,9,12	
Hirundo rustica	v		1	9	
Troglodytidae					
Cantorchilus leucotis	a,c,g,r,v		1,2,3,5	2,4,7,9,12	DZUFMG
Troglodytes musculus	a,g,r,v		1,2,3,5	2,4,7,9,11,12	
Donacobiidae					
Donacobius atricapilla	a,g,v		1,2,3,5	2,4,7,9,12	
Polioptilidae					
Polioptila plumbea	a,g,r,v		1,2,3,5	2,4,9,11,12	
Turdidae					
Turdus rufiventris	a,g,v		1,2,3,5,6	2,4,7,8,9,12	

Taxa	Detection	Status	Localities	Month of record	Museum
Turdus leucomelas	a,r,v		1,2,3,5,6,7	2,4,7,9,11,12	
Turdus amaurochalinus	a,g,r,v		1,2,3,5	2,8,9,11,12	
Turdus albicollis	a,v		2	4	
Mimidae					
Mimus saturninus	a,v		X,1,2,3,5	2,4,5,8,9,11,12	MCZ
Motacillidae					
Anthus lutescens	a,v		1,2,4,5	2,7,9,11	
Coerebidae					
Coereba flaveola	a,r,v		2,3	2,12	
Thraupidae					
Saltator coerulescens	a,v		1	2,7,9,12	
Saltator similis	a,v		2,3,5,6	2,4,7,9,11,12	
Saltatricula atricollis	a,c,g,v		1,2,3,5		DZUFMG
Schistochlamys ruficapillus	a,c,v		1	2,7	DZUFMG
Neothraupis fasciata	a,v		1	2,7	
Compsothraupis loricata	a,c,g,v		X,1,2,3	2,4,7,9,11,12	DZUFMG,MCZ
Nemosia pileata	a,r,v		X,1,2,3,4,5	2,4,7,9,11,12	MCZ
Thlypopsis sordida	a,v		1,2,3	4,9	
Tachyphonus rufus	a,v		1,2,3	4,9	
Ramphocelus carbo	a,v		5	7,12	
Thraupis sayaca	a,g,r,v		X,1,2,3,4,5,6,7	1,2,4,7,9,11,12	MCZ,MZUSP
Thraupis palmarum	a,v		1,2,3,4,5,6	2,4,7,8,9,11,12	
Tangara cayana	a,c,r,v		1,2,3,5	2,4,7,9,11,12	DZUFMG
Dacnis cayana	r,v		3,5	2,4,8,12	
Hemithraupis guira	a,r,v		1,2,3,5	2,4,7,9,11,12	
Conirostrum speciosum	a,g,r,v		1,2,3,4,5	2,4,7,9,11,12	
Emberizidae					
Zonotrichia capensis	a,g,v		1,2,3,5,6,7	2,4,7,9,11,12	
Ammodramus humeralis	a,v		1,2,3,4,5,6	2,4,9,11,12	
Sicalis columbiana	v		1,3	2,5,12	
Sicalis flaveola	v		2	4	
Sicalis luteola	a,v		2,3	9,11	
Volatinia jacarina	a,r,v		1,2,3	4,9,11,12	
Sporophila plumbea	v		X,1	1,2	MCZ
Sporophila collaris	c,v	S^{DD},N^{NT}	1	2,7	DZUFMG
Sporophila lineola	v		1,2	2,12	
Sporophila nigricollis	a,r,v		1,2,3,5	2,4,7,9,11,12	
Sporophila caerulescens	v		1,2,5	2,7	
Sporophila leucoptera	v		1	2	
Sporophila bouvreuil	v		1,2	2,12	
Sporophila angolensis	a,v	S^{CR}	1,2,5	2,4,7,12	
Coryphospingus pileatus	a,r,v		1,2,3,4,5	2,4,7,9,11,12	
Paroaria dominicana	a,f,v		X,1,2,3,4,5	1,2,4,7,9,12	DZUFMG,MCZ
Cardinalidae					
Piranga flava	v		6	2	
Cyanoloxia brissonii	a,v		2,3	4,9	
Parulidae					
Parula pitiayumi	a,g,v		2,3	2,4,9,11,12	
Geothlypis aequinoctialis	a,v		1,6	2	
Basileuterus culicivorus	a,g,r,v		2,3	4,9	
Basileuterus hypoleucus	a,r,v		1,2,3,7	2,4,9,12	
Basileuterus flaveolus	a,r,v		1,2,3,4,5	2,4,7,9,12	
Icteridae					
Psarocolius decumanus	a,v		2,3,5	2,4,7,12	
Procacicus solitarius	a,v		1,2	2,4,9	
Icterus cayanensis	a,v		2,3,5	2,4,7	
Icterus jamacaii	a,f,g,v		X,1,2,3,5,7	1,2,4,5,7,8,9,11,12	MCZ,MZUSP

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Gnorimopsar chopi	a,c,g,v		1,2,3,4,5,6,7	2,4,5,7,8,9,11,12	DZUFMG
Agelasticus cyanopus	a,c,v		1	2,9	DZUFMG
Chrysomus ruficapillus	a,v		1,2,3	2,4,9,11,12	
Agelaioides fringillarius	a,v		1,2	2,4,11	
Molothrus rufoaxillaris	a,v		2	4	
Molothrus oryzivorus	v		1	9	
Molothrus bonariensis	a,r,v		1,2,3,5	2,4,9,11,12	
Sturnella superciliaris	a,v		2	4,11	
Fringillidae					
Euphonia chlorotica	a,v		1,2,3,4,5,6	2,4,5,7,8,9,11,12	
Passeridae					
Passer domesticus	a,v		2	4,11	