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Source: Bulletin of the British Ornithologists' Club, 143(2) : 172-195

Published By: British Ornithologists' Club

URL: <https://doi.org/10.25226/bboc.v143i2.2023.a4>

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Results of ornithological inventories in north-west Minas Gerais state, Brazil, with notes on distribution and conservation

by Eduardo França Alteff

Received 16 July 2022; revised 24 February 2023; published 7 June 2023

<http://zoobank.org/urn:lsid:zoobank.org:pu:pub:6B5428B0-BBD8-46A4-A53F-42C14F7A03A0>

SUMMARY.—Based on 30 days of field surveys in the north-west of the state of Minas Gerais, Brazil, in 2014, I report notable records of 40 bird species. In total, 293 species were recorded at three sites, including 15 species at risk of extinction (at state, national or global levels) and another four species whose status is insufficiently known to be placed in any threat of extinction category in Minas Gerais or Brazil. Records of three species are new for the São Francisco basin, and 13 are new for north-west Minas Gerais. Among the rarest species reported are Dwarf Tinamou *Taoniscus nanus*, Jabiru *Jabiru mycteria*, Black Hawk-Eagle *Spizaetus tyrannus*, Ocellated Crake *Micropygia schomburgkii*, Uniform Crake *Amaurolimnas concolor*, Russet-mantled Foliage-gleaner *Syndactyla dimidiata*, Minas Gerais Tyrannulet *Phylloscartes roquettei*, Chapada Flycatcher *Guayramemua affine*, Reiser's Tyrannulet *Phyllomyias reiseri*, Rufous-tailed Attila *Attila phoenicurus*, Black-collared Swallow *Pygochelidon melanoleuca* and Blackish-blue Seedeater *Amaurospiza moesta*.

Brazil has one of the richest avifaunas in the world with 1,971 species (Pacheco *et al.* 2021). The state of Minas Gerais is situated at the intersection of the Cerrado, Atlantic Forest and Caatinga biomes (Olson *et al.* 2001) and, consequently, harbours at least 787 of those species (Mattos *et al.* 1993, Ribon *et al.* 2006). Therein, the municipality of João Pinheiro, in north-west Minas Gerais, was defined as a priority area for bird conservation, regarded as 'very high' in biological importance, whilst the municipality of Vazante was identified as of 'extreme' importance (Drummond *et al.* 2005). The birds of the north-west of the state have been researched since the 19th century, starting with the Danish naturalist Peter Wilhelm Lund, who stayed in the municipality of Paracatu during 3–15 September 1834 (Pinto 1938). In the last three decades, the avifauna of this region has received greater attention (Mattos *et al.* 1991, Lopes *et al.* 2008a, Faria *et al.* 2009, Mazzoni *et al.* 2015).

However, due to the large area of north-west Minas Gerais, the number and coverage of bird surveys is still small. With the loss of native vegetation over time, many areas are cleared without their biodiversity being known. Faunal inventories assume an important role in decision-making for the management and conservation of natural resources. Given this scenario, my aim is to present the results of avifaunal inventories and noteworthy records from two field surveys in north-west Minas Gerais. Furthermore, comments are made on the natural history of some species, geographic distribution and on actions that may contribute to bird conservation in the studied region.

Material and Methods

Study area.—The municipalities of João Pinheiro, Vazante and Paracatu are all in north-west Minas Gerais (Fig. 1), in the Cerrado biome (Olson *et al.* 2001). All study sites are in the Paracatu River sub-basin, which covers 4,137,171 ha. The Paracatu itself is 465 km long

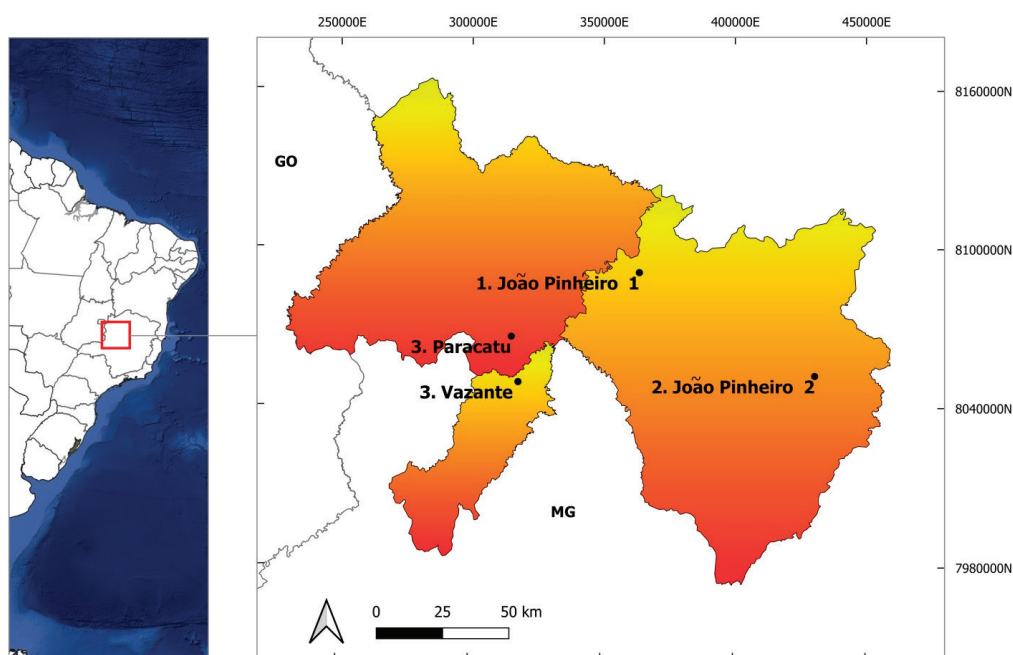


Figure 1. Location of the study sites in the municipalities of João Pinheiro, Vazante and Paracatu, in north-west Minas Gerais state, Brazil. States: MG = Minas Gerais, GO = Goiás.

and is a left-bank tributary of the middle São Francisco River. According to the Köppen classification, the region's climate is Aw with a dry winter (Alvares *et al.* 2013), and in the study region there are two well-defined seasons: dry (May–September) and wet (October–April). Phytophysiognomies cited herein were characterised *sensu* Oliveira-Filho & Ratter (2002). The study localities are described below.

1. *João Pinheiro municipality 1*. In the north-west of the municipality around Mutuca stream ($17^{\circ}15'45''\text{S}$, $46^{\circ}17'02''\text{W}$; 535 m), the Verde River and its tributary, Feio stream ($17^{\circ}17'34''\text{S}$, $46^{\circ}10'55''\text{W}$; 513 m), there are c.20,000 ha of diverse habitats including gallery forest, *cerradão*, *cerrado sensu stricto*, *campo cerrado*, *campo sujo*, *campo limpo*, *veredas*, forestry and other anthropogenic areas.

2. *João Pinheiro municipality 2*. In the east of the municipality, the main rivers are the Santo Antônio ($17^{\circ}37'05''\text{S}$, $45^{\circ}39'14''\text{W}$; 626 m) and its tributary, the Contenda ($17^{\circ}38'40''\text{S}$, $45^{\circ}35'09''\text{W}$; 758 m). The site covers c.8,000 ha, with gallery forest, *cerradão*, *cerrado sensu stricto*, *campo cerrado*, *campo sujo*, *campo limpo*, *veredas*, silviculture and disturbed areas.

3. *Vazante and Paracatu municipalities*. In Vazante, study sites were on the Paracatu River ($17^{\circ}35'36''\text{S}$, $46^{\circ}35'49''\text{W}$; 534 m), and on the right bank of its tributary, the Escuro River ($17^{\circ}33'41''\text{S}$, $46^{\circ}39'57''\text{W}$; 521 m). Remnants of natural vegetation (nearly 1,500 ha) included gallery forest, *veredas*, *cerradão*, *cerrado sensu stricto*, *campo cerrado* and *campo sujo*. Forestry predominates in the region, with cattle ranching in several places. In Paracatu, sites were on the left bank of the Escuro River, at the border between the municipalities of Paracatu and Vazante, where the largest forest remnant in the region, >1,000 ha ($17^{\circ}35'57''\text{S}$, $46^{\circ}42'35''\text{W}$; 532 m), is found. There is also a tributary of the Escuro, Escurinho stream ($17^{\circ}28'29''\text{S}$, $46^{\circ}44'45''\text{W}$; 534 m). Habitats include gallery forest, *cerradão* and *cerrado sensu stricto*. Silviculture is the principal economic activity, with land earmarked for agriculture and livestock, sometimes integrated (agroforestry).

Avifaunal surveys.—The first survey occurred on 26 April–12 May 2014 (late wet season), with the second on 22 July–6 August 2014 (dry season). Field work was undertaken at three locations, with a sampling effort of 210 hours over 30 days (ten days at each site, five per season). Observations were made with binoculars, between 05.00 h and 22.00 h, mostly in early morning and late afternoon, using a sound-recorder plus directional microphone and a digital camera to document interesting records. Some sound-recordings and photographs have been deposited in the WikiAves database (www.wikiaves.com.br) and are indicated by the reference number that corresponds to the file on the website (e.g., WA 5218872 = www.wikiaves.com.br/5218872).

Systematics and taxonomy follow Pacheco *et al.* (2021). Conservation status (threatened, Near Threatened or Data Deficient) is based on the most recent listings at state (Fundação Biodiversitas 2007, Copam 2010), national (ICMBio 2014, MMA 2022) and global levels (BirdLife International 2023). Distribution maps were consulted on the BirdLife International website (www.birdlife.org). Distances reported for range extensions were measured using Google Earth.

The list of species in north-west Minas Gerais was compiled from the literature (Lopes *et al.* 2008a, Faria *et al.* 2009, Mazzoni *et al.* 2015). To prepare a list of species recorded in the São Francisco basin, the synthesis of the avifauna of the São Francisco River in Minas Gerais, which lists 614 species (Diniz *et al.* 2012), and an inventory of the lower and middle São Francisco River in Bahia, during which 315 species were recorded (Schunck *et al.* 2012), were compared. These studies totalled 620 species, with six exclusive to the Bahia portion of the river, Indigo Macaw *Anodorhynchus leari*, Common Ground Dove *Columbina passerina*, Straight-billed Woodcreeper *Dendroplex picus*, Lesser Wagtail-Tyrant *Stigmatura napensis*, Rufous-crowned Greenlet *Hylophilus poicilotis* and Yellow-faced Siskin *Sporagra yarrellii* (Diniz *et al.* 2012, Schunck *et al.* 2012), although one (Rufous-crowned Greenlet), is plainly out of range (BirdLife International 2023) and was considered incorrect, thus 619 species in total.

To define records as the first for north-west Minas Gerais and/or the basin, the previous literature was searched (e.g., Lopes *et al.* 2008a, Faria *et al.* 2009, Diniz *et al.* 2012, Schunck *et al.* 2012, Mazzoni *et al.* 2015), as well as the online database WikiAves (2023).

Results and Discussion

A total of 293 bird species was recorded at the three sites over 30 days (Appendix), or 37% of the avifauna of Minas Gerais (Mattos *et al.* 1993, Ribon *et al.* 2006) and 47% of the avifauna of the basin; 252 species were recorded in April/May 2014 and 267 species in July/August 2014. Species richness was considerable, especially as the study did not include the early wet season, when most species breed and activity is greatest (pers. obs.).

After ten days at each study site, 239 species were recorded in Vazante and Paracatu municipalities (194 in the wet season and 212 in the dry season). At 'João Pinheiro 1', 234 species were found (191 in the wet and 211 in the dry), whilst at 'João Pinheiro 2', 182 species were identified (147 in the wet and 156 in the dry). The smallest number of species was at the site where the vegetation was mainly grassland, with little forest and usually small fragments. The number of species recorded was consistently higher in the dry season, which was contrary to expectations (pers. obs.).

Some 140 species were recorded at all sites (47%), 82 at two locations (28%) and 71 were exclusive to one locality (25%). Mention must be made of the 15 species at risk of extinction (Appendix), of which 14 are threatened at state level, three nationally and three globally, including one Critically Endangered at state level. Records of all threatened species are detailed under Noteworthy records. Four species are Data Deficient at state or national

level (Appendix), a category used for species too poorly known to assign an IUCN Red List category. Three species are so classified at state level—Sungrebe *Heliornis fulica*, Suiriri Flycatcher *Suiriri suiriri suiriri* and Reiser's Tyrannulet *Phyllomyias reiseri*—and one in Brazil, Chapada Flycatcher *Guayramemua affine*.

Despite the São Francisco River being relatively well sampled from an ornithological standpoint, records of three species were new for the basin, Uniform Crake *Amaurolimnas concolor*, Swallow-winged Puffbird *Chelidoptera tenebrosa* and Rufous-tailed Attila *Attila phoenicurus*. Another three were added to the list of species in the basin in Minas Gerais, namely Buff-fronted Owl *Aegolius harrisii*, Black-collared Swallow *Pygochelidon melanoleuca* and Sungrebe *Heliornis fulica* (Ubaid *et al.* 2012, Silva *et al.* 2017, Souza *et al.* 2018), thus 620 species are now known from the São Francisco basin in Minas Gerais and 625 species across the entire basin.

The survey produced records of 13 species new for north-west Minas Gerais: Gilded Hummingbird *Hylocharis chrysura*, Grey-breasted Crake *Laterallus exilis*, *Amaurolimnas concolor*, Pavonine Cuckoo *Dromococcyx pavoninus*, Buff-fronted Owl *Aegolius harrisii*, *Chelidoptera tenebrosa*, Barred Forest Falcon *Micrastur ruficollis*, Cinereous-breasted Spinetail *Synallaxis hypospodia*, Eared Pygmy Tyrant *Myiornis auricularis*, Chilean Elaenia *Elaenia chilensis*, Reiser's Tyrannulet *Phyllomyias reiseri*, *Attila phoenicurus* and Orange-fronted Yellow Finch *Sicalis columbiana*.

In the municipalities of Unaí and Cabeceira Grande, 316 species were recorded by Lopes *et al.* (2008a), with 24 subsequently added to the list, increasing it to 340 species (Mazzoni *et al.* 2015). Elsewhere, in north-west Minas Gerais, at Fazenda Brejão, Brasilândia de Minas municipality, 273 species were found, including 14 not recorded by other studies (Faria *et al.* 2009): Tataupa Tinamou *Crypturelus tataupa*, Giant Wood Rail *Aramides ypecaha*, Limpkin *Aramus guarauna*, Pied Lapwing *Vanellus cayanus*, Large-billed Tern *Phaetusa simplex*, Blue Ground Dove *Claravis pretiosa*, Stripe-breasted Starthroat *Heliomaster squamosus*, Black-and-white Hawk-Eagle *Spizastur melanoleucus*, Blond-crested Woodpecker *Celeus flavescens*, White-throated Woodcreeper *Xiphocolaptes albicollis*, Rusty-backed Spinetail *Cranioleuca vulpina*, Greenish Elaenia *Myiopagis viridicata*, Small-billed Elaenia *Elaenia parvirostris* and Yellowish Pipit *Anthus chii*. The sum of previous avifaunal studies in north-west Minas Gerais (354 species) and the data presented here (an additional 13 species), is 367.

Interesting records made during the surveys, including range extensions and natural history observations, together with remarks on conservation, are reported below.

Noteworthy records

DWARF TINAMOU *Taoniscus nanus*

Endangered at state, national and global levels. On 5 May 2014, one was sound-recorded at João Pinheiro in *campo sujo* with nearby *vereda*, in the headwaters of the Santo Antônio River. Endemic to the Cerrado (Silva & Bates 2002), typical of grasslands, rare and difficult to detect due to its secretive behaviour (Silveira & Silveira 1998, BirdLife International 2023). In north-west Minas Gerais, there are records in the municipalities of Bonfinópolis de Minas (Silveira & Silveira 1998), as well as at Patrocínio, in the Triângulo Mineiro (Machado *et al.* 1998), and Serra da Canastra National Park and environs (São Francisco basin), in the west of the state (Silveira 1998, Silveira & Silveira 1998, WikiAves 2023). Silveira & Silveira (1998) listed records at six localities, which subsequent work has approximately doubled (Kirwan *et al.* 2015, WikiAves 2023). During 16 years of sporadic field work in the Cerrado biome, principally in Minas Gerais, Goiás and Distrito Federal, with knowledge of its principal vocalisation since 2007, this is my only record of the species, providing some measure of its rarity.

BARE-FACED CURASSOW *Crax fasciolata*

Endangered in Minas Gerais and Vulnerable globally. In João Pinheiro, one on 29 July 2014 along Feio stream, and a male on 3 August 2014 at the Santo Antônio River. In Paracatu, a male was seen on 8 May 2014 at the Escuro River. Occurs mainly in riparian and gallery forests, but will use *cerrado sensu stricto* and even approach houses in rural landscapes, searching for food (pers. obs.). Most records are in forests on banks of rivers and streams (Bagno & Marinho-Filho 2001). Hunting, together with habitat loss, are responsible for its reduced numbers (BirdLife International 2023).

LONG-TAILED GROUND DOVE *Uropelia campestris*

Seen on both surveys, at all sites, with c.12 in total. One was sound-recorded in *campo sujo* on 29 April 2014, and another was seen beside highway BR-040, feeding on grain spilt from passing trucks (corn and soybeans). Uncommon, generally in grassland (Stotz *et al.* 1996). In Minas Gerais, its range encompasses the north, north-west, a small part of the Triângulo Mineiro, and the centre of the state (BirdLife International 2023, WikiAves 2023).

SCALED PIGEON *Patagioenas speciosa*

Three heard on 25 July 2014 in Vazante, in *cerradão*, of which one was sound-recorded. Uncommon (Stotz *et al.* 1996), often in forest, but also in nearby open areas (pers. obs.). Has probably declined due to habitat loss (BirdLife International 2023), but was first seen in north-west Minas Gerais in 2013, in Paracatu (WikiAves 2023). There are also records in the Triângulo Mineiro and the north-east of the state (WikiAves 2023). Listed for the São Francisco basin in Minas Gerais (Diniz *et al.* 2012), and the only records in the north-west of the state are from this watershed (WikiAves 2023).

JABIRU *Jabiru mycteria*

Endangered in Minas Gerais. One photographed on 27 April 2014, flying over Feio stream near its confluence with the Verde River, João Pinheiro (WA 1589749). In Vazante, one flew over the Escuro River on 8 May 2014. Occasionally recorded in north-west Minas Gerais (WikiAves 2023), where also reported at Fazenda Brejão (Faria *et al.* 2009), the municipality of Arinos (Machado *et al.* 1998) and around Unaí and Cabeceira Grande (Lopes *et al.* 2008a).

WOOD STORK *Mycteria americana*

Vulnerable in Minas Gerais. On 10 May 2014, one photographed on the Escuro River, at the border between Vazante and Paracatu (WA 5218874). On 24 July 2014, three in flight along Escurinho stream. Also mentioned for Arinos, Formoso, Brasilândia de Minas and João Pinheiro (Machado *et al.* 1998).

ROSEATE SPOONBILL *Platalea ajaja*

Vulnerable in Minas Gerais. Three on 24 July 2014 flying over the Escuro River, municipalities of Vazante and Paracatu; one was photographed (WA5218872). Rare in central Brazil, usually seen alone or in small groups (pers. obs.). Also recorded in Arinos, Brasilândia de Minas and Vazante (Machado *et al.* 1998).

BLACK HAWK-EAGLE *Spizaetus tyrannus*

Endangered in Minas Gerais. One sound-recorded on 8 May 2014, in flight over riparian forest at the Escuro River, at the border of Paracatu and Vazante. In the north-west of the state, listed previously only for Fazenda Brejão (Faria *et al.* 2009, WikiAves 2023).

SOUTH AMERICAN SNIPE *Gallinago paraguariae*

One sound-recorded at night on 3 August 2014, at a *vereda* in the headwaters of the Santo Antônio River in João Pinheiro. Apparently unusual in north-west Minas Gerais (WikiAves 2023), with records in Unaí and Cabeceira Grande (Lopes *et al.* 2008a). Remains hidden in tall grasses, vocalising only occasionally, including at night, making it difficult to observe and perhaps explaining the small number of records in the region (pers. obs.).

GILDED HUMMINGBIRD *Hylocharis chrysura*

One seen and sound-recorded on 26 July 2014 in *campo sujo* near the Paracatu River (WA 1687375). Apparently migratory in the region, being recorded only sporadically in July–August in Minas Gerais (WikiAves 2023). This record is the first for the north-west of the state.

OCELLATED CRAKE *Micropygia schomburgkii*

Endangered in Minas Gerais and Near Threatened in Brazil. On 29 April 2014, sound-recorded in João Pinheiro, with three present in *campo sujo*. Can be common in tall grassland (Lopes *et al.* 2010b, Mazzoni *et al.* 2012, Alteff & Marçal-Júnior 2019). In Minas Gerais, recent records available only for Serra da Canastra National Park (Vasconcelos *et al.* 2006), the Triângulo Mineiro (Lopes *et al.* 2010b, Alteff & Marçal-Júnior 2019), the centre-east (Mazzoni *et al.* 2012) and in the north-west at São Gonçalo do Abaeté (WikiAves 2023).

GREY-BREASTED CRAKE *Laterallus exilis*

One sound-recorded on 24 July 2014 in a *vereda* with a few buriti palms *Mauritia flexuosa*, near the Escuro River, Vazante. The first record for north-west Minas Gerais, in which state the species was recorded for the first time only recently (Lopes *et al.* 2010a). Other records in João Pinheiro in 2018 and Paracatu in 2019 (WikiAves 2023).

UNIFORM CRAKE *Amaurolimnas concolor*

A pair sound-recorded on 26 April 2014 in João Pinheiro, along Mutuca stream, in gallery forest with associated *vereda*. On 28 April 2014, one was heard at a separate locality with the same habitat, again along Mutuca stream. A rare species, these are the first records for north-west Minas Gerais and the São Francisco basin. Recorded in Distrito Federal (Bagno & Marinho-Filho 2001, Lopes *et al.* 2012), the municipality of Uberlândia, Triângulo Mineiro region (Alteff & Marçal-Júnior 2019), and around Emas National Park, Goiás, all in the Paranaíba basin, usually in similar habitats (pers. obs.).

SUNGREBE *Heliornis fulica*

Data Deficient in Minas Gerais. A female photographed on 24 July 2014 on the Escuro River, at the border between Vazante and Paracatu (WA1580754). Usually on rivers and dams flanked by forests, as in the Triângulo Mineiro and southern Goiás (pers. obs.). Not previously recorded in the São Francisco basin (Diniz *et al.* 2012), but subsequently reported at Pompéu, in central Minas Gerais (Souza *et al.* 2018).

PAVONINE CUCKOO *Dromococcyx pavoninus*

Sound-recorded on 1 August 2014, when three were heard in *cerradão* in João Pinheiro. Previously reported for the São Francisco watershed, but my record is the first for north-west Minas Gerais. The species is rare in Minas Gerais, and most records are in the Atlantic Forest, in the east and south (Mazzoni *et al.* 2018, WikiAves 2023). The closest recent record was in 2017 in Campo Alegre de Goiás (WikiAves 2023), south-east Goiás.

BUFF-FRONTED OWL *Aegolius harrisii*

Two at Mutuca stream in João Pinheiro, in gallery forest with associated *vereda*, using open areas in the surrounds, on 28 July–1 August 2014, being sound-recorded on 31 July 2014 (WA 1687324). Uncommon (Stotz *et al.* 1996) with no previous records in north-west Minas Gerais. Not mentioned for the São Francisco basin in Minas Gerais by Diniz *et al.* (2012), but recorded around Januária since 2004 (by A. Whittaker; Ubaid *et al.* 2012). Records in central Brazil are outside the generally known distribution (BirdLife International 2023), despite recent records in several states, e.g., Minas Gerais, São Paulo (Ubaid *et al.* 2012, Santos *et al.* 2014), Goiás, Distrito Federal and Tocantins (WikiAves 2023), with other extensions to its range reported in south, south-east and north-east Brazil (Santos 2009, Ubaid *et al.* 2012, Ruiz-Esparza *et al.* 2017).

SWALLOW-WINGED PUFFBIRD *Chelidoptera tenebrosa tenebrosa*

One photographed in riparian forest on the Escuro River on 24 July 2014, at the border of Paracatu and Vazante. In João Pinheiro, an adult in riparian forest along Feio stream on 29 July 2014. Its range also encompasses the Triângulo Mineiro and north-east of the state (BirdLife International 2023). My records extend its distribution c.200 km east, are the first for the São Francisco basin and for the north-west of the state. Further records in João Pinheiro were made in November 2015 (WikiAves 2023).

CHESTNUT-EARED ARACARI *Pteroglossus castanotis*

Endangered in Minas Gerais. One photographed in *cerradão* in Paracatu on 8 May 2014 (WA 1601921), eating fruits of *Schefflera macrocarpa* (Araliaceae). Usually in gallery forest, with or without *vereda*, and also anthropogenic sites nearby (pers. obs.). Occasionally, in orchards in rural, even urban areas, as in the Triângulo Mineiro, where observed visiting *Roystonea oleracea* (Arecaceae), an exotic palm (pers. obs.). In Minas Gerais restricted to the north-west and Triângulo Mineiro (BirdLife International 2023). In the north-west recorded in the municipalities of Arinos, Uruana de Minas, Natalândia (WikiAves 2023), Unaí and Cabeceira Grande (Mazzoni *et al.* 2015).

GOLDEN-GREEN WOODPECKER *Piculus chrysochloros*

A male seen and heard on 5 August 2014 in riparian forest along the Santo Antônio River in João Pinheiro. Previously mentioned for Fazenda Brejão (Faria *et al.* 2009) and Fazenda Três Rios in Unaí (Lopes *et al.* 2008a). The record at Fazenda Três Rios in 2003 (Lopes *et al.* 2008a) extended its geographic range (BirdLife International 2023). Subsequently, my record expanded its distribution c.150 km to the south. One of the southernmost records is in the municipality of Divinópolis, central Minas Gerais (Del-Rio *et al.* 2013).

BARRED FOREST FALCON *Micrastur ruficollis*

One sound-recorded on 8 May 2014 and found again on 24 July 2014, in riparian forest along the Escuro River in Paracatu, in the region's largest forest fragment. These are the first records for the north-west of the state, and one of the few for the São Francisco basin (Kirwan *et al.* 2001).

CACTUS PARAKEET *Eupsittula cactorum*

Found in diverse habitats, such as forest edge, *cerrado sensu stricto*, *vereda* and anthropogenic sites; two were photographed on 26 April 2014 (WA 1606856). Sporadically recorded in João Pinheiro, Paracatu and Vazante, generally alone or in flocks, max. 7 individuals. Endemic to Brazil (Sick 1997), and previously considered endemic to the Caatinga (Pacheco 2003).

First reported in north-west Minas Gerais, in the municipality of Lagoa Grande, in 2001 (WikiAves 2023), extending its distribution c.100 km to the west (vs. BirdLife International 2023). There are records in several municipalities of the north-west (WikiAves 2023), including in Unaí, Cabeceira Grande and Brasilândia de Minas (Faria *et al.* 2009, Mazzoni *et al.* 2015).

BLUE-AND-YELLOW MACAW *Ara ararauna*

Vulnerable in Minas Gerais. Observed in diverse habitats, with a total of 32 individuals in the wet season (over 15 days), and 41 in the dry season (in 15 days). Makes long daily movements between foraging areas and roosts. Observed alone or in flocks of variable size, with a group of four photographed on 3 May 2014 in João Pinheiro (WA 5269172). Uncommon (Stotz *et al.* 1996) and loss of habitat, together with trapping of adults, and poaching of eggs and nestlings, have reduced its populations.

POINT-TAILED PALMCREEPER *Berlepschia rikeri*

Near Threatened in Minas Gerais. Seen on 25 July 2014 at a *vereda* in the headwaters of the Paracatu River in Vazante. Tied to palms, often in *veredas*, but can use other habitats (Lopes & Faria 2014). Recorded in the region since June 1993, in the municipality of Vazante (Vasconcelos *et al.* 2006), and also reported for Unaí and Cabeceira Grande (Lopes *et al.* 2008a).

RUSSET-MANTLED FOLIAGE-GLANER *Syndactyla dimidiata*

Endangered in Minas Gerais. An adult at Mutuca stream on 28 July 2014, in gallery forest with associated *vereda*. On 2 August 2014, one in the headwaters of the Santo Antônio River, in the same habitat, documented with photographs and a sound-recording. Endemic to forested habitats in the Cerrado (Silva & Bates 2002, Lopes & Gonzaga 2014), uncommon and little known (Stotz *et al.* 1996, Lopes & Gonzaga 2014). Previously recorded around Unaí and Cabeceira Grande (Lopes *et al.* 2008a).

CHOTOY SPINETAIL *Schoeniophylax phryganophilus petersi*

One photographed and sound-recorded on 23 July 2014 in *cerrado sensu stricto* in Paracatu (WA1580765). There is also a record from Fazenda Brejão (Faria *et al.* 2009). *S. p. petersi* was described from the São Francisco basin (Vasconcelos *et al.* 2006, Lopes *et al.* 2008a) but has since been recorded in the Paranaíba basin, in the Altiplano Leste, Paranoá, south-east Distrito Federal. In northern Goiás, recorded in Posse, Flores de Goiás and Alto Paraíso de Goiás, in the Tocantins watershed (WikiAves 2023). Further afield, also found in Piauí, north-east Brazil (Santos *et al.* 2010).

CINEREOUS-BREASTED SPINETAIL *Synallaxis hypospodia*

Two sound-recorded on 11 May 2014 near the Escuro River, in *campo sujo* with swampy environments nearby. On 25 July 2014, it was found again at the same site. The first records for north-west Minas Gerais, where recorded since in Uruana de Minas in 2015–16 and Vazante in 2017 (WikiAves 2023).

BLACK-TAILED FLYCATCHER *Myiobius atricaudus snethlagei*

In João Pinheiro one sound-recorded in *cerradão* on 5 August 2014. Rare with few records in north-west Minas Gerais: in Uruana de Minas in 2012 and Arinos in 2014 (WikiAves 2023).

MINAS GERAIS TYRANNULET *Phylloscartes roquettei*

Endangered at state, national and global levels. In total, six individuals at two sites. In João Pinheiro, photographed on 26 April 2014 (WA 1569691) on the edge of *cerradão*, with many ground bromeliads. On 28 July 2014, recorded again at the same locality, with Reiser's Tyrannulet *Phyllomyias reiseri*, apparently in a mixed-species flock. Also recorded on 30 April 2014 in *cerradão* with bamboo in the understory, where Blackish-blue Seedeater *Amaurospiza moesta* was seen nearby. In Paracatu, seen and sound-recorded in *cerradão* on 8 May 2014 (WA 1687382). Observed foraging in a *Eucalyptus* plantation with some native vegetation (WA 4782324). Uses diverse forest habitats, but my records in *cerradão* enlarge its occupancy (Lopes *et al.* 2008b), from dry forests (Silva & Oren 1992, Olmos 2005, Lopes *et al.* 2010a), riparian, gallery and mesophytic semi-deciduous forests (Raposo *et al.* 2002, Kirwan *et al.* 2004, Lopes *et al.* 2008b, Santos *et al.* 2009). Also recorded at Fazenda Brejão, in riparian forest along the Paracatu River (Faria *et al.* 2009), and around Unaí and Cabeceira Grande (Mazzoni *et al.* 2015). In the municipality of Paracatu, also reported at Morro Bom Sucesso (Lopes *et al.* 2008b). Endemic to Brazil and, until recently, thought to be restricted to the São Francisco and Jequitinhonha basins (BirdLife International 2023), but there are recent records in the Paranaíba and Tocantins basins (Alteff & Albuquerque 2020).

EARED PYGMY TYRANT *Myiornis auricularis*

In Paracatu, four on 24 July 2014 in riparian forest along the Escuro River and in *cerradão*, of which one was sound-recorded. Endemic to the Atlantic Forest (Vale *et al.* 2018), but in January 2012 it was found outside the biome in the municipality of São Gotardo, Triângulo Mineiro (pers. obs.). My record is the first for north-west Minas Gerais, c.200 km north of São Gotardo.

CHILEAN ELAENIA *Elaenia chilensis*

Migratory species which moves north from southern South America post-breeding, with records in Amazonas, Acre and in almost every state in north-east Brazil (Pacheco *et al.* 2021, WikiAves 2023). Some of a flock of c.10 were photographed and sound-recorded in João Pinheiro on 6 May 2014 in *cerradão* and nearby silviculture with some native plants, as well as a *Eucalyptus* plantation. Mostly seen in Brazil during February–April (Sick 1997), but with records in September–December in Minas Gerais, where it was considered rare until recently (WikiAves 2023). My record is the first for north-west Minas Gerais. Other records in June and August 2019 in northern Goiás and Distrito Federal, respectively (pers. obs.).

SUIRIRI FLYCATCHER *Suiriri suiriri suiriri*

S. s. suiriri is Data Deficient in Minas Gerais. Four in João Pinheiro on 30 July 2014 in *cerrado sensu stricto*. Some were sound-recorded and photographed, showing the white belly, and were seen alongside yellow-bellied individuals (the usual subspecies in the region *S. s. burmeisteri*) as also described by Faria *et al.* (2009), who collected two specimens of the nominate at Fazenda Brejão.

CHAPADA FLYCATCHER *Guyramemua affine*

Vulnerable in Minas Gerais, Data Deficient in Brazil, and Near Threatened globally. Two pairs in *campo sujo* in the headwaters of the Santo Antônio River, João Pinheiro, on 5–6 May 2014, documented with photographs and sound-recordings (WA 4783718). There was a *vereda* nearby, as in the municipality of Patrocínio, Triângulo Mineiro, where I found a nest with two chicks ready to fledge on 30 April 2012 (pers. obs.). Endemic to the Cerrado (Silva & Bates 2002), common in grassland but can also use habitats with a higher density

of woody plants, as in *cerrado sensu stricto* (pers. obs.). In north-west Minas Gerais, records in São Gonçalo do Abaeté and Brasilândia de Minas (WikiAves 2023), including at Fazenda Brejão (Faria *et al.* 2009).

REISER'S TYRANNULET *Phyllomyias reiseri*

Data Deficient in Minas Gerais and Endangered in Brazil. In total, seven found at three sites: in João Pinheiro, on 26 April 2014 at the edge of *cerradão* with many ground bromeliads, and photographed on 5 August 2014 (WA 1569652) on a *Pterodon pubescens* (Fabaceae) in *cerradão* near a silviculture with an understorey of native plants; in Paracatu, one sound-recorded on 24 July 2014 (WA 1573499), in the region's largest forest remnant, in *cerradão* with bamboo, as well as in riparian forest along the Escuro River. Often in seasonal deciduous forest with limestone outcrops (Silva & Oren 1992, Sick 1997, Kirwan *et al.* 2001, Pacheco & Olmos 2006, Lopes *et al.* 2010a, Dornelas *et al.* 2012), but also occurs in gallery forest (Clay *et al.* 1998), as in the municipality of Estrela do Sul, Triângulo Mineiro (pers. obs.). Not seen in deciduous forest with limestone outcrops during this study, but the only area with such formations, in the municipality of Paracatu c.12 km from the study area, is being mined. All of my records in Minas Gerais were close to silviculture, even at the edge of *Eucalyptus* plantations. Endemic to the Cerrado (Silva & Bates 2002), rare and poorly known. Not listed for the north-west of the state, my records extend its range c.250 km to the east (BirdLife International 2023), with a record in the municipality of Estrela do Sul, c.150 km south-east. There is a record in the Atlantic Forest biome, in Poções, Bahia, where a nest was discovered on 10 December 2016 (WikiAves 2023).

RUFOUS-TAILED ATTLA *Attila phoenicurus*

One heard in João Pinheiro on 2 August 2014, in the headwaters of the Santo Antônio River in gallery forest with associated *vereda*. Uncommon (Stotz *et al.* 1996) and typically recorded in Atlantic Forest, but considered migratory, visiting the Cerrado and Amazonia between March and November (Lopes & Schunk 2022). A new species for the São Francisco basin, extending its geographic range c.260 km to the east (Lopes & Schunk 2022). In Minas Gerais, most of the recent records are in the south (Lopes & Schunk 2022, WikiAves 2023).

BLACK-COLLARED SWALLOW *Pygochelidon melanoleuca*

Critically Endangered in Minas Gerais and Near Threatened at national level. Typical of river rapids formed by rocky outcrops. Six at the Santo Antônio River, João Pinheiro, on 3 August 2014; one was photographed (WA 1588784). In the dry season, often seen alone or in small groups (2–6 individuals), probably searching for appropriate nest sites along the river, as they were observed entering crevices in rocks, where the species is known to breed (Silva *et al.* 2017). Elsewhere, in Catalão, Goiás, a pair was seen collecting nest material on 15 July 2010, on a tributary of the São Marcos River, Paranaíba watershed (pers. obs.). Not mentioned for the São Francisco basin in Minas Gerais by Diniz *et al.* (2012), but had been seen in 2011 on the Abaeté River, São Gonçalo do Abaeté (Silva *et al.* 2017).

SOLITARY BLACK CACIQUE *Cacicus solitarius*

On 29 July 2014, an adult photographed and sound-recorded in João Pinheiro in riparian forest along Feio stream (WA 1580757). Generally found in riparian forests or swampy areas nearby (pers. obs.). Rare in north-west Minas Gerais, but also found at Fazenda Brejão (Faria *et al.* 2009) and the municipality of Uruana de Minas (WikiAves 2023).

GREYISH SALTATOR *Saltator coerulescens*

One photographed in riparian forest near the mouth of Feio stream, João Pinheiro, on 29 July 2014 (WA1580756). Another at the ecotone between *vereda* and *cerrado sensu stricto*, in the headwaters of the Paracatu River. Recorded at Fazenda Brejão (Faria *et al.* 2009) and in several municipalities in north-west Minas Gerais (WikiAves 2023) including Unaí and Cabeceira Grande (Mazzoni *et al.* 2015).

SCARLET-THROATED TANAGER *Compsothraupis loricata*

Observed in João Pinheiro, Vazante and Paracatu, in riparian and gallery forests and open areas around watercourses, generally in flocks of up to 15. Sound-recorded and photographed. Endemic to Brazil (Sick 1997); with increased field work its distribution has been extended over time. The species was not found in north-west Minas Gerais around Unaí and Cabeceira Grande by Mattos *et al.* (1991) and Lopes *et al.* (2008a), but it was discovered in this region in 2012 (Mazzoni *et al.* 2015). In south-east Goiás (municipalities of Catalão, Davinópolis and Campo Alegre de Goiás) I failed to find the species during almost two years of intensive fieldwork (2009–10; pers. obs.), but in 2013 it was recorded in Catalão and Davinópolis (WikiAves 2023).

ORANGE-FRONTED YELLOW FINCH *Sicalis columbiana*

A pair in *campo sujo* at João Pinheiro on 29 April 2014 and 5 May 2014 was the first record for north-west Minas Gerais. Previously recorded in the north of the state, mainly in the São Francisco basin, but has since been found at other localities in the north-west of the state and in the Distrito Federal (WikiAves 2023), including records in the Paranaíba basin (pers. obs.). Not recorded during surveys prior to 2009 in the municipalities of Unaí, Cabeceira Grande and Brasilândia de Minas (Lopes *et al.* 2008a, Faria *et al.* 2009, Mazzoni *et al.* 2015), but there are recent records in Arinos, Uruana de Minas, Brasilândia de Minas, Paracatu and São Gonçalo do Abaeté, all in north-west Minas Gerais (WikiAves 2023). Not mentioned for Distrito Federal by Bagno & Marinho-Filho (2001), but was found there in 2017 (WikiAves 2023).

BLACKISH-BLUE SEEDEATER *Amaurospiza moesta*

Vulnerable in Minas Gerais. A pair on 30 April 2014 in João Pinheiro, where a male was photographed (WA1580750) and sound-recorded, in *cerradão* with bamboo in the understorey. Recorded in Presidente Olegário and São Gonçalo do Abaeté (Lopes *et al.* 2011), and is potentially widespread, if sporadic, virtually throughout the Cerrado biome (Lopes *et al.* 2011).

Closing remarks and recommendations for conservation

The municipality of João Pinheiro is one of the few areas in Brazil with records of Brazilian Merganser *Mergus octosetaceus*, which was found there in 2011 (WikiAves 2023); it is Critically Endangered at state, national and global levels (Copam 2010, MMA 2022, BirdLife International 2023). The Santo Antônio River should be surveyed for it. Another species that should be searched for in the same area is Great-billed Seed Finch *Sporophila maximiliani*, as I briefly saw a female *Sporophila* that was perhaps this species along Feio stream, near its confluence with the Verde River. Given the species' habitat preferences (Ubaid *et al.* 2018), flooded and swampy areas, riparian and gallery forests, and *veredas*, the area of my sighting was certainly suitable for it.

Major threats to biodiversity conservation in north-west Minas Gerais are posed by agricultural expansion, fire, drainage, use of water for irrigation, pollution of water

resources by pesticides, use of mercury in mining, and deforestation (Drummond *et al.* 2005). When developed sustainably, silviculture apparently is less impactful on biodiversity than large-scale crop and livestock farming, requiring less intensive human intervention. However, when species of *Pinus* are used, especially with grassland nearby, more intense management is needed to prevent the spread of the trees into otherwise natural areas.

The creation of additional conservation units in the region should be a priority, especially as there are still quite large remnants of natural vegetation in a good state of conservation that harbour rare and threatened species. To date, the only conservation unit in the region is Paracatu State Park (6,400 ha). Therefore, further conservation units should be designated with the aim of protecting a representation of the avifauna and its rarer species against future environmental changes. Among conservation units compatible with current regional land use are wildlife refuges or sustainable-use areas such as Reservas Particulares do Patrimônio Natural (see Law 9985, 18 July 2000, which established the Brazilian National System of Conservation Units). Environmental compensation funds from potentially polluting enterprises should be used to create new conservation units, as decreed by CONAMA Resolution 371, 5 April 2006 and Decree 45175, 17 September 2009.

Acknowledgements

Thanks to SSMA Consultoria Ambiental Ltda. and Vereda Consultoria Ambiental Ltda. for logistical support during field work. I also thank Ana Paula Lira Gouvêa for help identifying some plant species, Eduardo Manfrim for his company throughout the field work, and Leonardo Lopes, who helped revise the English version of this paper. Two referees provided helpful comments on the submitted version.

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Appendix

List of 293 bird species recorded during two visits to the municipalities of João Pinheiro, Vazante and Paracatu, north-west Minas Gerais, Brazil. Status: VU = Vulnerable, EN = Endangered, CR = Critically Endangered, NT = Near Threatened, DD = Data Deficient. ¹State list (Fundação Biodiversitas 2007, Copam 2010), ²National list (ICMBio 2014, Mma 2022), ³Global list (BirdLife International 2023). Study sites: 1 = João Pinheiro municipality 1, 2 = João Pinheiro municipality 2, 3 = Vazante and Paracatu municipalities.

Taxon name	English name	Status	Sites
RHEIFORMES			
Rheidae			
<i>Rhea americana</i>	Greater Rhea	NT ³	1,3
TINAMIFORMES			
Tinamidae			
<i>Crypturellus undulatus</i>	Undulated Tinamou		1,3
<i>Crypturellus parvirostris</i>	Small-billed Tinamou		1,2,3
<i>Rhynchotus rufescens</i>	Red-winged Tinamou		3
<i>Nothura maculosa</i>	Spotted Nothura		1,3
<i>Taoniscus nanus</i>	Dwarf Tinamou	EN ¹ ,EN ² ,EN ³	2
ANSERIFORMES			
Anhimidae			
<i>Anhima cornuta</i>	Horned Screamer		1,2,3
Anatidae			
<i>Dendrocygna viduata</i>	White-faced Whistling Duck		1
<i>Dendrocygna autumnalis</i>	Black-bellied Whistling Duck		1,3
<i>Cairina moschata</i>	Muscovy Duck		1,2,3
<i>Amazonetta brasiliensis</i>	Brazilian Teal		1,2,3
GALLIFORMES			
Cracidae			
<i>Penelope superciliaris</i>	Rusty-margined Guan		1,2,3
<i>Crax fasciolata</i>	Bare-faced Curassow	EN ¹ ,VU ³	1,2,3
COLUMBIFORMES			
Columbidae			
<i>Patagioenas speciosa</i>	Scaled Pigeon		3
<i>Patagioenas picazuro</i>	Picazuro Pigeon		1,2,3
<i>Patagioenas cayennensis</i>	Pale-vented Pigeon		1,2,3
<i>Patagioenas plumbea</i>	Plumbeous Pigeon		1,2,3
<i>Leptotila verreauxi</i>	White-tipped Dove		1,2,3
<i>Leptotila rufaxilla</i>	Grey-fronted Dove		1,2,3
<i>Zenaida auriculata</i>	Eared Dove		2,3
<i>Claravis pretiosa</i>	Blue Ground Dove		1,3
<i>Uropelia campestris</i>	Long-tailed Ground Dove		1,2
<i>Columbina talpacoti</i>	Ruddy Ground Dove		1,2,3
<i>Columbina squammata</i>	Scaled Dove		1,2,3
CUCULIFORMES			
Cuculidae			
<i>Guira guira</i>	Guira Cuckoo		1,2,3
<i>Crotophaga ani</i>	Smooth-billed Ani		1,2,3
<i>Tapera naevia</i>	Striped Cuckoo		1,2,3



Taxon name	English name	Status	Sites
<i>Dromococcyx pavoninus</i>	Pavonine Cuckoo		1
<i>Piaya cayana</i>	Squirrel Cuckoo		1,2,3
NYCTIBIIFORMES			
Nyctibiidae			
<i>Nyctibius griseus</i>	Common Potoo		3
CAPRIMULGIFORMES			
Caprimulgidae			
<i>Nyctidromus albigollis</i>	Common Pauraque		1,2,3
<i>Hydropsalis torquata</i>	Scissor-tailed Nightjar		1,2,3
<i>Podager nacunda</i>	Nacunda Nighthawk		1,3
<i>Chordeiles acutipennis</i>	Lesser Nighthawk		1,2
APODIFORMES			
Apodidae			
<i>Streptoprocne zonaris</i>	White-collared Swift		3
<i>Chaetura meridionalis</i>	Sick's Swift		1
<i>Tachornis squamata</i>	Fork-tailed Palm Swift		1,2,3
Trochilidae			
<i>Florisuga fusca</i>	Black Jacobin		1,3
<i>Phaethornis ruber</i>	Reddish Hermit		2,3
<i>Phaethornis pretrei</i>	Planalto Hermit		1,3
<i>Colibri serrirostris</i>	White-vented Violetear		1,2,3
<i>Heliactin bilophus</i>	Horned Sungem		1,2
<i>Anthracothorax nigricollis</i>	Black-throated Mango		2,3
<i>Calliphlox amethystina</i>	Amethyst Woodstar		2
<i>Chlorostilbon lucidus</i>	Glittering-bellied Emerald		1,2,3
<i>Thalurania furcata</i>	Fork-tailed Woodnymph		1,2,3
<i>Eupetomena macroura</i>	Swallow-tailed Hummingbird		1,2,3
<i>Aphantochroa cirrochloris</i>	Sombre Hummingbird		1
<i>Chionomesa fimbriata</i>	Glittering-throated Emerald		1,2,3
<i>Hylocharis chrysura</i>	Gilded Hummingbird		3
GRUIFORMES			
Aramidae			
<i>Aramus guarauna</i>	Limpkin		1
Rallidae			
<i>Rufirallus viridis</i>	Russet-crowned Crake		2,3
<i>Laterallus melanophaius</i>	Rufous-sided Crake		1
<i>Laterallus exilis</i>	Grey-breasted Crake		3
<i>Micropygia schomburgkii</i>	Ocellated Crake	EN ¹ ,NT ²	1
<i>Mustelirallus albigollis</i>	Ash-throated Crake		1,3

Taxon name	English name	Status	Sites
<i>Amaurolimnas concolor</i>	Uniform Crake		1
<i>Aramides cajaneus</i>	Grey-necked Wood Rail		1,3
Heliornithidae			
<i>Heliornis fulica</i>	Sungrebe	DD ¹	3
CHARADRIIFORMES			
Charadriidae			
<i>Vanellus chilensis</i>	Southern Lapwing		1,2,3
Scolopacidae			
<i>Gallinago paraguaiiae</i>	South American Snipe		2
Jacanidae			
<i>Jacana jacana</i>	Wattled Jacana		1,3
CICONIIFORMES			
Ciconiidae			
<i>Jabiru mycteria</i>	Jabiru	EN ¹	1,3
<i>Mycteria americana</i>	Wood Stork	VU ¹	1,3
SULIFORMES			
Anhingidae			
<i>Anhinga anhinga</i>	Anhinga		1,3
Phalacrocoracidae			
<i>Nannopterum brasilianum</i>	Neotropic Cormorant		1,2,3
PELECANIFORMES			
Ardeidae			
<i>Tigrisoma lineatum</i>	Rufescent Tiger Heron		1,3
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron		1,3
<i>Butorides striata</i>	Striated Heron		1
<i>Ardea cocoi</i>	Cocoi Heron		1,3
<i>Ardea alba</i>	Great Egret		1,2,3
<i>Syrigma sibilatrix</i>	Whistling Heron		2,3
<i>Egretta thula</i>	Snowy Egret		1,2,3
Threskiornithidae			
<i>Mesembrinibis cayennensis</i>	Green Ibis		1,2,3
<i>Phimosus infuscatus</i>	Bare-faced Ibis		3
<i>Theristicus caudatus</i>	Buff-necked Ibis		1,2,3
<i>Platalea ajaja</i>	Roseate Spoonbill	VU ¹	1,3
CATHARTIFORMES			
Cathartidae			
<i>Coragyps atratus</i>	Black Vulture		1,2,3
<i>Cathartes aura</i>	Turkey Vulture		1,2,3
<i>Cathartes burrovianus</i>	Lesser Yellow-headed Vulture		1,3

Taxon name	English name	Status	Sites
ACCIPITRIFORMES			
Accipitridae			
<i>Elanus leucurus</i>	White-tailed Kite	EN ¹	3
<i>Leptodon cayanensis</i>	Grey-headed Kite		1,3
<i>Spizaetus tyrannus</i>	Black Hawk-Eagle		3
<i>Busarellus nigricollis</i>	Black-collared Hawk		1,3
<i>Rostrhamus sociabilis</i>	Snail Kite		1
<i>Accipiter bicolor</i>	Bicoloured Hawk		2
<i>Geranospiza caerulescens</i>	Crane Hawk		1,3
<i>Heterospizias meridionalis</i>	Savanna Hawk		1,2,3
<i>Urubitinga urubitinga</i>	Great Black Hawk		3
<i>Rupornis magnirostris</i>	Roadside Hawk		1,2,3
<i>Geranoaetus albicaudatus</i>	White-tailed Hawk		2
<i>Buteo brachyurus</i>	Short-tailed Hawk		2,3
STRIGIFORMES			
Tytonidae			
<i>Tyto furcata</i>	American Barn Owl		1,2,3
Strigidae			
<i>Megascops choliba</i>	Tropical Screech Owl		1,2,3
<i>Bubo virginianus</i>	Great Horned Owl		2,3
<i>Glaucidium brasilianum</i>	Ferruginous Pygmy Owl		1,2,3
<i>Athene cunicularia</i>	Burrowing Owl		1,2,3
<i>Aegolius harrisii</i>	Buff-fronted Owl		1
<i>Asio clamator</i>	Striped Owl		3
TROGONIFORMES			
Trogonidae			
<i>Trogon surrucura</i>	Surucua Trogon		1,3
CORACIIFORMES			
Alcedinidae			
<i>Megaceryle torquata</i>	Ringed Kingfisher		1,3
<i>Chloroceryle amazona</i>	Amazon Kingfisher		1,2,3
<i>Chloroceryle americana</i>	Green Kingfisher		1,3
GALBULIFORMES			
Galbulidae			
<i>Galbula ruficauda</i>	Rufous-tailed Jacamar		1,2,3
Bucconidae			
<i>Chelidoptera tenebrosa</i>	Swallow-winged Puffbird		1,3
<i>Nonnula rubecula</i>	Rusty-breasted Nunlet		1,2,3
<i>Nystalus maculatus</i>	Spot-backed Puffbird		1,2,3
<i>Nystalus chacuru</i>	White-eared Puffbird		1,2



Taxon name	English name	Status	Sites
PICIFORMES			
Ramphastidae			
<i>Ramphastos toco</i>	Toco Toucan		1,2,3
<i>Pteroglossus castanotis</i>	Chestnut-eared Aracari	EN ¹	3
Picidae			
<i>Picumnus albosquamatus</i>	White-wedged Piculet		1,2,3
<i>Melanerpes candidus</i>	White Woodpecker		1,2,3
<i>Veniliornis passerinus</i>	Little Woodpecker		1,2,3
<i>Veniliornis mixtus</i>	Checkered Woodpecker		1
<i>Campephilus melanoleucos</i>	Crimson-crested Woodpecker		1,2,3
<i>Dryocopus lineatus</i>	Lineated Woodpecker		1,2,3
<i>Celeus flavescens</i>	Blond-crested Woodpecker		3
<i>Piculus chrysochloros</i>	Golden-green Woodpecker		2
<i>Colaptes melanochloros</i>	Green-barred Woodpecker		1,2,3
<i>Colaptes campestris</i>	Campo Flicker		1,2,3
CARIAMIFORMES			
Cariamidae			
<i>Cariama cristata</i>	Red-legged Seriema		1,2,3
FALCONIFORMES			
Falconidae			
<i>Herpetotheres cachinnans</i>	Laughing Falcon		1,2,3
<i>Micrastur ruficollis</i>	Barred Forest Falcon		3
<i>Micrastur semitorquatus</i>	Collared Forest Falcon		3
<i>Caracara plancus</i>	Crested Caracara		1,2,3
<i>Mitroago chimachima</i>	Yellow-headed Caracara		1,2,3
<i>Falco sparverius</i>	American Kestrel		1,3
<i>Falco femoralis</i>	Aplomado Falcon		1,2,3
PSITTACIFORMES			
Psittacidae			
<i>Brothergeris chiriri</i>	Yellow-chevroned Parakeet		1,2,3
<i>Pionus maximiliani</i>	Scaly-headed Parrot		1,2,3
<i>Alipiopsitta xanthops</i>	Yellow-faced Parrot	NT ² , NT ³	1,2,3
<i>Amazona aestiva</i>	Turquoise-fronted Parrot	NT ²	1,2,3
<i>Forpus xanthopterygius</i>	Blue-winged Parrotlet		1,3
<i>Eupsittula aurea</i>	Peach-fronted Parakeet		1,2,3
<i>Eupsittula cactorum</i>	Cactus Parakeet		1,2,3
<i>Orthopsittaca manilatus</i>	Red-bellied Macaw		1,2,3
<i>Ara ararauna</i>	Blue-and-yellow Macaw	VU ¹	1,2,3
<i>Diopsittaca nobilis</i>	Red-shouldered Macaw		1,2,3
<i>Psittacara leucophthalmus</i>	White-eyed Parakeet		2,3

Taxon name	English name	Status	Sites
PASSERIFORMES			
Thamnophilidae			
<i>Formicivora rufa</i>	Rusty-backed Antwren		1,2,3
<i>Dysithamnus mentalis</i>	Plain Antvireo		3
<i>Herpsilochmus longirostris</i>	Large-billed Antwren		1,2,3
<i>Herpsilochmus atricapillus</i>	Black-capped Antwren		1
<i>Thamnophilus doliatus</i>	Barred Antshrike		1
<i>Thamnophilus torquatus</i>	Rufous-winged Antshrike		1,2,3
<i>Thamnophilus pelzelni</i>	Planalto Slaty Antshrike		1,2,3
<i>Thamnophilus caerulescens</i>	Variable Antshrike		2,3
<i>Taraba major</i>	Great Antshrike		1,3
Melanopareiidae			
<i>Melanopareia torquata</i>	Collared Crescentchest		1,2
Dendrocolaptidae			
<i>Sittasomus griseicapillus</i>	Olivaceous Woodcreeper		1,3
<i>Campylorhamphus trochilrostris</i>	Red-billed Scythebill		1,2,3
<i>Lepidocolaptes angustirostris</i>	Narrow-billed Woodcreeper		1,2,3
Xenopidae			
<i>Xenops rutilans</i>	Streaked Xenops		3
Furnariidae			
<i>Berlepschia rikeri</i>	Point-tailed Palmcreeper		3
<i>Furnarius figulus</i>	Wing-banded Hornero		1
<i>Furnarius leucopus</i>	Pale-legged Hornero		1,2
<i>Furnarius rufus</i>	Rufous Hornero		1,2,3
<i>Syndactyla dimidiata</i>	Russet-mantled Foliage-gleaner	EN ¹	1,2
<i>Clibanornis rectirostris</i>	Chestnut-capped Foliage-gleaner		1,2,3
<i>Phacellodomus rufifrons</i>	Rufous-fronted Thornbird		1,2,3
<i>Phacellodomus ruber</i>	Greater Thornbird		1,2,3
<i>Cranioleuca vulpina</i>	Rusty-backed Spinetail		1
<i>Certhiaxis cinnamomeus</i>	Yellow-chinned Spinetail		1,3
<i>Schoeniophylax phryganophilus</i>	Chotoy Spinetail		3
<i>Synallaxis scutata</i>	Ochre-cheeked Spinetail		1,2
<i>Synallaxis hypospodia</i>	Cinereous-breasted Spinetail		3
<i>Synallaxis albescens</i>	Pale-breasted Spinetail		1,2,3
<i>Synallaxis frontalis</i>	Sooty-fronted Spinetail		1,2,3
Pipridae			
<i>Neopelma pallescens</i>	Pale-bellied Tyrant-Manakin		1,2,3
<i>Antilophia galeata</i>	Helmeted Manakin		1,2,3
Tityridae			
<i>Pachyramphus polychopterus</i>	White-winged Becard		3

Taxon name	English name	Status	Sites
Onychorhynchidae			
<i>Myiobius atricaudus</i>	Black-tailed Flycatcher		2
Platyrinchidae			
<i>Platyrinchus mystaceus</i>	White-throated Spadebill		3
Rhynchocyclidae			
<i>Leptopogon amaurocephalus</i>	Sepia-capped Flycatcher		1,2,3
<i>Phylloscartes roquettei</i>	Minas Gerais Tyrannulet	EN ¹ , EN ² , EN ³	1
<i>Tolmomyias sulphureus</i>	Yellow-olive Flycatcher		1,2,3
<i>Todirostrum cinereum</i>	Common Tody-Flycatcher		1,3
<i>Poecilatriccus latirostris</i>	Rusty-fronted Tody-Flycatcher		1,2,3
<i>Myiornis auricularis</i>	Eared Pygmy Tyrant		3
<i>Hemitriccus striatocollis</i>	Stripe-necked Tody-Tyrant		1,2,3
<i>Hemitriccus margaritaceiventer</i>	Pearly-vented Tody-Tyrant		1,2,3
Tyrannidae			
<i>Euscarthmus meloryphus</i>	Tawny-crowned Pygmy Tyrant		2
<i>Camptostoma obsoletum</i>	Southern Beardless Tyrannulet		1,2,3
<i>Elaenia flavogaster</i>	Yellow-bellied Elaenia		1,2,3
<i>Elaenia chilensis</i>	Chilean Elaenia		2
<i>Elaenia cristata</i>	Plain-crested Elaenia		1,2,3
<i>Elaenia chiriquensis</i>	Lesser Elaenia		2
<i>Suiriri suiriri</i>	Suiriri Flycatcher	DD ¹	1,2,3
<i>Myiopagis caniceps</i>	Grey Elaenia		1,2,3
<i>Myiopagis viridicata</i>	Greenish Elaenia		1,3
<i>Capsiempis flaveola</i>	Yellow Tyrannulet		1,3
<i>Phaeomyias murina</i>	Mouse-coloured Tyrannulet		1,2,3
<i>Phyllomyias reiseri</i>	Reiser's Tyrannulet	DD ¹ , EN ²	1,2,3
<i>Phyllomyias fasciatus</i>	Planalto Tyrannulet		1,2,3
<i>Attila phoenicurus</i>	Rufous-tailed Attila		2
<i>Myiarchus ferox</i>	Short-crested Flycatcher		1,2,3
<i>Myiarchus tyrannulus</i>	Brown-crested Flycatcher		1,2,3
<i>Sirystes sibilator</i>	Sibilant Sirystes		1,3
<i>Casiornis rufus</i>	Rufous Casiornis		1,2,3
<i>Pitangus sulphuratus</i>	Great Kiskadee		1,2,3
<i>Philohydor lictor</i>	Lesser Kiskadee		1,3
<i>Machetornis rixosa</i>	Cattle Tyrant		1,2
<i>Myiodynastes maculatus</i>	Streaked Flycatcher		3
<i>Megarynchus pitangua</i>	Boat-billed Flycatcher		1,2,3
<i>Myiozetetes cayanensis</i>	Rusty-margined Flycatcher		1,3
<i>Myiozetetes similis</i>	Social Flycatcher		1,2,3
<i>Tyrannus melancholicus</i>	Tropical Kingbird		1,2,3

Taxon name	English name	Status	Sites
<i>Guyramemua affine</i>	Chapada Flycatcher	VU ¹ ,DD ² ,NT ³	2
<i>Sublegatus modestus</i>	Southern Scrub Flycatcher		1,2
<i>Colonia colonus</i>	Long-tailed Tyrant		1,2,3
<i>Arundinicola leucocephala</i>	White-headed Marsh Tyrant		1,3
<i>Fluvicola nengeta</i>	Masked Water Tyrant		1,3
<i>Pyrocephalus rubinus</i>	Vermilion Flycatcher		1,3
<i>Gubernates yetapa</i>	Streamer-tailed Tyrant		1,3
<i>Myiophobus fasciatus</i>	Bran-coloured Flycatcher		1,2,3
<i>Cnemotriccus fuscatus</i>	Fuscou Flycatcher		1,3
<i>Lathrotriccus eulerei</i>	Euler's Flycatcher		1,2,3
<i>Contopus cinereus</i>	Tropical Pewee		1
<i>Xolmis velatus</i>	White-rumped Monjita		1,3
<i>Nengetus cinereus</i>	Grey Monjita		1,2,3
Vireonidae			
<i>Cyclarhis gujanensis</i>	Rufous-browed Peppershrike		1,2,3
<i>Hylophilus amaurocephalus</i>	Grey-eyed Greenlet		2
<i>Vireo chivi</i>	Chivi Vireo		2
Corvidae			
<i>Cyanocorax cristatellus</i>	Curl-crested Jay		1,2,3
<i>Cyanocorax cyanopogon</i>	White-naped Jay		1,3
Hirundinidae			
<i>Pygochelidon cyanoleuca</i>	Blue-and-white Swallow		3
<i>Pygochelidon melanoleuca</i>	Black-collared Swallow	CR ¹ ,NT ²	2
<i>Stelgidopteryx ruficollis</i>	Southern Rough-winged Swallow		1,2,3
<i>Progne tapera</i>	Brown-chested Martin		1,2,3
<i>Progne chalybea</i>	Grey-breasted Martin		1,3
<i>Tachycineta albiventer</i>	White-winged Swallow		1,2
Troglodytidae			
<i>Troglodytes musculus</i>	Southern House Wren		1,2,3
<i>Cantorchilus leucotis</i>	Buff-breasted Wren		1,2,3
Poliophtilidae			
<i>Poliophtila dumicola</i>	Masked Gnatcatcher		1,2,3
Donacobiidae			
<i>Donacobius atricapilla</i>	Black-capped Donacobius		1,3
Turdidae			
<i>Turdus leucomelas</i>	Pale-breasted Thrush		1,2,3
<i>Turdus rufigiventris</i>	Rufous-bellied Thrush		1,2,3
<i>Turdus amaurochalinus</i>	Creamy-bellied Thrush		1,3
<i>Turdus albicollis</i>	White-necked Thrush		3

Taxon name	English name	Status	Sites
Mimidae			
<i>Mimus saturninus</i>	Chalk-browed Mockingbird		1,2,3
Passeridae			
<i>Passer domesticus</i>	House Sparrow		2,3
Motacillidae			
<i>Anthus chii</i>	Yellowish Pipit		3
Fringillidae			
<i>Euphonia chlorotica</i>	Purple-throated Euphonia		1,2,3
Passerellidae			
<i>Ammodramus humeralis</i>	Grassland Sparrow		1,2,3
<i>Arremon flavirostris</i>	Saffron-billed Sparrow		2,3
<i>Zonotrichia capensis</i>	Rufous-collared Sparrow		1,2,3
Icteridae			
<i>Psarocolius decumanus</i>	Crested Oropendola		1,2,3
<i>Cacicus solitarius</i>	Solitary Black Cacique		1
<i>Cacicus haemorrhous</i>	Red-rumped Cacique		3
<i>Icterus jamacaii</i>	Campo Troupial		1,3
<i>Icterus pyrrhopterus</i>	Variable Oriole		1,3
<i>Molothrus bonariensis</i>	Shiny Cowbird		1,3
<i>Gnorimopsar chopi</i>	Chopi Blackbird		1,2,3
Parulidae			
<i>Geothlypis aequinoctialis</i>	Masked Yellowthroat		3
<i>Setophaga pitaiayumi</i>	Tropical Parula		1,3
<i>Myiothlypis flaveola</i>	Flavescent Warbler		1,2
<i>Basileuterus culicivorus</i>	Golden-crowned Warbler		1,2,3
Cardinalidae			
<i>Piranga flava</i>	Hepatic Tanager		2
<i>Amaurospiza moesta</i>	Blackish-blue Seedeater	VU ¹	1
Thraupidae			
<i>Charitospiza eucosma</i>	Coal-crested Finch	NT ³	1
<i>Nemosia pileata</i>	Hooded Tanager		1,2,3
<i>Compsothraupis loricata</i>	Scarlet-throated Tanager		1,2,3
<i>Emberizoides herbicola</i>	Wedge-tailed Grass Finch		1,2,3
<i>Hemithraupis guira</i>	Guira Tanager		1,2,3
<i>Tersina viridis</i>	Swallow Tanager		1,2,3
<i>Dacnis cayana</i>	Blue Dacnis		1,2,3
<i>Saltatricula atricollis</i>	Black-throated Saltator		1,2,3
<i>Saltator maximus</i>	Buff-throated Saltator		3
<i>Saltator coerulescens</i>	Greyish Saltator		1,3
<i>Saltator similis</i>	Green-winged Saltator		1,2,3

Taxon name	English name	Status	Sites
<i>Coereba flaveola</i>	Bananaquit		1,2,3
<i>Volatinia jacarina</i>	Blue-black Grassquit		1,2,3
<i>Eucometis penicillata</i>	Grey-headed Tanager		1,3
<i>Coryphospingus pileatus</i>	Pileated Finch		1,2,3
<i>Coryphospingus cucullatus</i>	Red-crested Finch		1,3
<i>Tachyphonus rufus</i>	White-lined Tanager		1,2,3
<i>Ramphocelus carbo</i>	Silver-beaked Tanager		1,2,3
<i>Sporophila plumbea</i>	Plumbeous Seedeater		1,2
<i>Sporophila collaris ochrascens</i>	Rusty-collared Seedeater		1
<i>Sporophila nigricollis</i>	Yellow-bellied Seedeater		1,2,3
<i>Sporophila caerulea</i>	Double-collared Seedeater		1,2,3
<i>Thlypopsis sordida</i>	Orange-headed Tanager		1,3
<i>Cypsnagra hirundinacea</i>	White-rumped Tanager		1,3
<i>Conirostrum speciosum</i>	Chestnut-vented Conebill		1,3
<i>Sicalis citrina</i>	Stripe-tailed Yellow Finch		2
<i>Sicalis flaveola</i>	Saffron Finch		1,3
<i>Sicalis columbiana</i>	Orange-fronted Yellow Finch		1,2
<i>Neothraupis fasciata</i>	White-banded Tanager	NT ³	1,2
<i>Schistochlamys melanopsis</i>	Black-faced Tanager		1,2,3
<i>Schistochlamys ruficapillus</i>	Cinnamon Tanager		1,2
<i>Thraupis sayaca</i>	Sayaca Tanager		1,2,3
<i>Thraupis palmarum</i>	Palm Tanager		1,2,3
<i>Stelpnia cayana</i>	Burnished-buff Tanager		1,2,3

