

ISSN (impresso) 0103-5657

ISSN (on-line) 2178-7875

Revista Brasileira de Ornitologia

Volume 19

Número 2

Junho 2011

www.ararajuba.org.br/sbo/ararajuba/revbrasorn



Publicada pela

Sociedade Brasileira de Ornitologia

São Paulo - SP

Avifauna of two localities in the south of Amapá, Brazil, with comments on the distribution and taxonomy of some species

Fabio Schunck^{1,5}, Andre C. De Luca², Vítor de Q. Piacentini^{1,3}, Marco Antônio Rego^{1,3},
Bruno Rennó⁴ and Aline H. Corrêa¹

¹ Seção de Aves, Museu de Zoologia da Universidade de São Paulo, Avenida Nazaré, 481, CEP 04263-000, São Paulo, SP, Brasil.

² Rua São Paulo, Quadra 28, Lote 6, casa 3, CEP 74685-550, Goiânia, GO, Brasil.

³ Pós-Graduação (Zoologia), Instituto de Biociências, Universidade de São Paulo.

⁴ Rua Vereador Richard Rocha Andrade, 266, CEP 27516-170, Resende, RJ, Brasil.

⁵ Author for correspondence: E-mail: fabio_schunck@yahoo.com.br

Recebido em 14/03/2011. Aceito em 29/05/2011.

RESUMO: Avifauna de duas localidades do sul do Amapá, Brasil, com comentários sobre distribuição e taxonomia de algumas espécies. O estado do Amapá possui poucos inventariamentos ornitológicos publicados, estando a maior parte deles restritos à sua porção leste. Neste trabalho apresentamos o levantamento da avifauna de duas localidades no sul do Amapá, uma delas estritamente florestal (Reserva Extrativista do Rio Cajari) e outra numa área de mosaico de savanas e florestas (Vila Nova). Os trabalhos compreenderam duas amostragens na estação chuvosa (dez/2008 e fev/2010) e uma na estação seca (jul/2010), resultando no registro de 386 espécies. Incluem-se aí os primeiros registros documentados para o Amapá de *Nyctibius leucopterus*, *Hydropsalis maculicaudus* e *H. torquata*, este último também o primeiro registro brasileiro ao norte do rio Amazonas. Nossos dados reforçam ainda a necessidade de estudos revisivos acerca da taxonomia das populações amapaenses de *Pyrrhura picta*, *Threnetes niger* e *Sclerurus caudacutus*.

PALAVRAS-CHAVE: Cerrado; Savanas; Reserva Extrativista do Rio Cajari; Vila Nova.

ABSTRACT: Avifauna of two localities in the south of Amapá, Brazil, with comments on the distribution and taxonomy of some species. There are few ornithological inventories published for the state of Amapá and the majority of them are restricted to the state's eastern portion. In this work we present the avifaunal survey of two localities in the south of Amapá; one of these is strictly forestal (Rio Cajari Extractive Reserve), and the other is in an area encompassing a mosaic of savannas and forests (Vila Nova). The survey comprises two samplings conducted during the rainy season (December 2008 and February 2010) and one in the dry season (July 2010), resulting in 386 species recorded. Included are the first documented records of *Nyctibius leucopterus*, *Hydropsalis maculicaudus* and *H. torquata* in Amapá, the last of which is also the first Brazilian record north of the Amazonas River. Our data also reinforces the necessity of revisionary studies relating to the taxonomy of populations from Amapá for *Pyrrhura picta*, *Threnetes niger* and *Sclerurus caudacutus*.

KEY-WORDS: Cerrado; Savannas; Rio Cajari Extractive Reserve; Vila Nova.

The coastline of Amapá state in the North of Brazil is known since the first years after the arrival of Europeans in America (Novaes 1974). With elevations up to c. 500 meters, Amapá shelters a great diversity of environments. In the coastal region there is the presence of mangroves and large lakes, besides other vegetation associated with aquatic environments. Also in the east of the state is found one of the largest areas of savanna in Brazilian Amazon. However, most of its territory is covered by *terra-firme* and *várzea* forests (IBGE 2004, 2006). This great diversity of environments reflects in the richness of animals and plants found in Amapá.

Ornithological knowledge of this state is distributed in a very unequal way. In the Catalogue of Amazonian

Birds, by Emilie Snethlage (1914), the great deficiency of data for western Amapá can be easily observed, and little has changed along the last century. Most of the studies in Amapá were done in the coastal lowlands owing to easy access by waterways (Novaes 1974). Currently, the main reference on the birds of Amapá are the works of Novaes (1974, 1978), that compile all of the knowledge for the state, besides presenting a historical docket covering almost all of the works realized up to that date.

According to Novaes (1974), the first birds collected that can be securely associated with Amapá territory date back to 1872, when Ferreira Penna gathered some examples of birds in the region of the lower Jarí River. E. Snethlage was also in the region of the lower Jarí

River collecting birds, principally in the locality of Santo Antônio da Cachoeira (Sneath 1914). Then in 1936 Medardo Lasso gathered a considerable number of birds from the Vila Nova River (Novaes 1974). In the middle of the same century (between 1951 and 1970), Miguel M. Moreira conducted the largest and most systematic exploration of Amapá to date. He gathered material primarily from the coastal plains, but also from more western localities, like from the Branco River creek and the Iratapuru River.

After the 1970s there were few publications on the avifauna of Amapá, and most of these were related to specific regions and environments. Teixeira and Best (1981) published some considerations on species until then not registered in Amapá, and Silva *et al.* (1997) realized a study on the composition and distribution of birds of a savanna area near Macapá. Posteriorly, Pacheco (2000) presented some overlooked historical records for the state, whereas Vidal *et al.* (2001) made a study on the birds of the Uaçá River region, northernmost Amapá, taking an

ethnological approach. Among the most recent works are a field guide to birds of the Cabo Orange National Park and avifaunal studies of the Piratuba Lake Biological Reserve, as well as of the Area of Environmental Protection of the Curiaú River (Souza *et al.* 2008, Aguiar and Naiff 2010, Aguiar *et al.* 2010).

In this work, the results of a survey conducted in two areas of southern Amapá are presented. They both monopolize two of the main vegetal formations of the state: Dense Ombrophilous Terra-firme Forest and the Savannas of Amapá.

MATERIAL AND METHODS

Study Area

The sample areas are located to the south of the state of Amapá (Figure 1), being characterized by the different vegetal typologies detailed below:

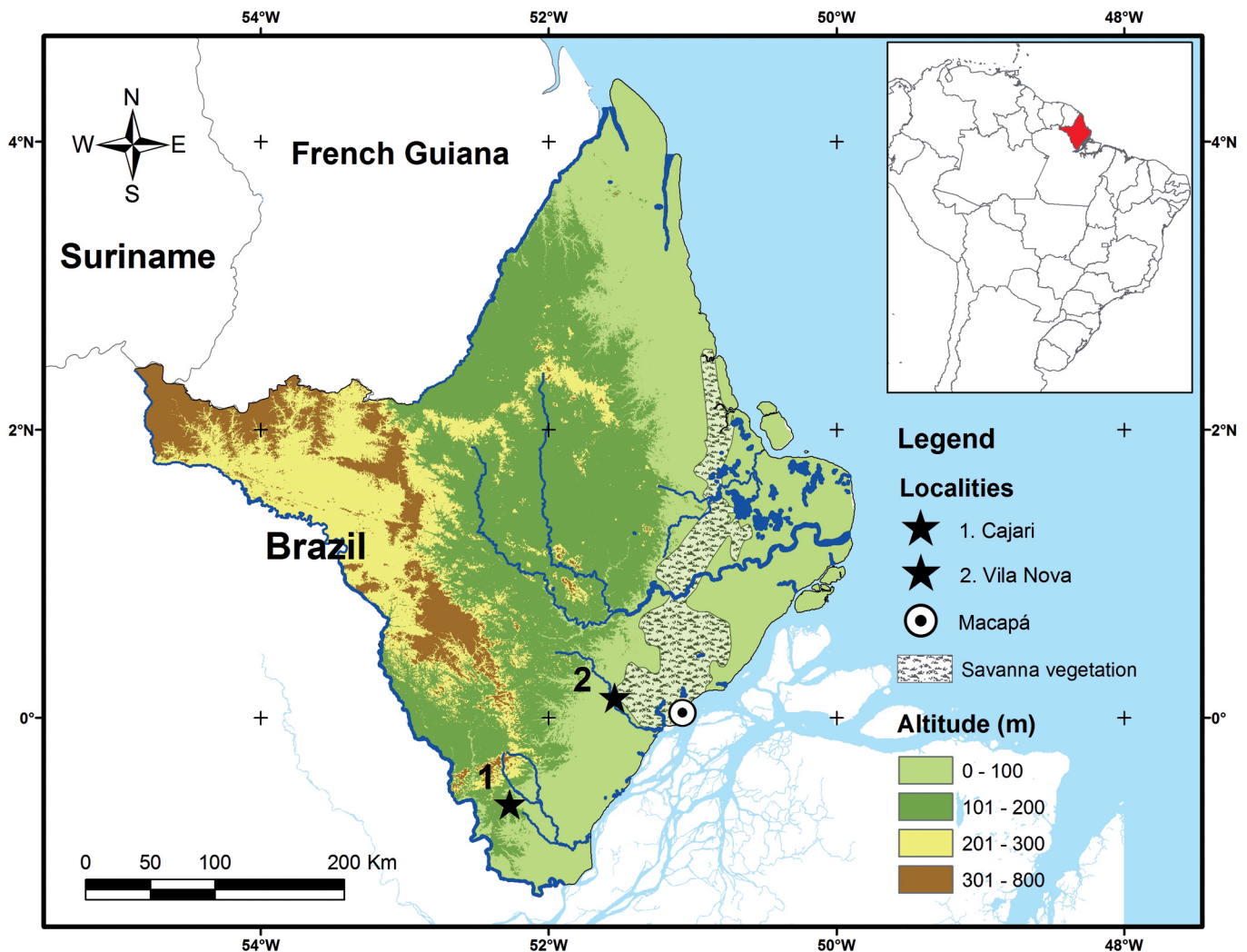


FIGURE 1: Location of the two sampling points in southern Amapá, inside the Rio Cajari Extractive Reserve and east of the Vila Nova community, which are composed of forestal areas and a mosaic of savanna and forest, respectively.

1. *Rio Cajari Extractive Reserve – RESEX Cajari* (00°34'58.1"S, 52°16'13.2") – The points of study in this region are located in the municipality of Laranjal do Jari, near the “Community of Marinho”. The landscape in the location is dominated by Dense Ombrophilous Forest (terra-firme) and characterized by its high canopy, with the emergent trees reaching around 50 meters in height. Brazil nut trees (*Bertholletia excelsa*) are fairly common in this physiognomy, many of them large in stature. The sampling area holds some small pastures and subsistence farming immediately adjacent. Fieldwork was accomplished between December 12-18, 2008 (Stage 1), February 9-14, 2010 (Stage 2), and from July 8-13, 2010 (Stage 3).

2. *Vila Nova* (00°09'10.7"N, 51°32'54.0"W) – The sampling was realized *c.* 3 km east of the Vila Nova community, which is situated on the banks of the river with the same name (divisor of the Mazagão [west] and Santana Municipalities), and immediately adjacent to Highway BR-156. The region is found at the transition point between the two main physiognomies of the state: forests and savannas. As such, the landscape in the region is composed of a mosaic of different phytogeomorphologies, but has a predominance of Grassy-Woody Savanna (Figure 2). Throughout the study area there is also Dense Ombrophilous Forest (terra-firme), Gallery Forests, *vereda* (palm swamps) and isolated, patchy woodlots. The stretches of terra-firme forest have high canopy with emergent trees reaching around 40 meters in height. The patchy woodlots, in turn, have a lower structure, averaging 10-15 meters in height. In some stretches, the grasslands are used as pastures to raise buffalos or converted into small subsistence farms. Fieldwork was realized between January 18-23, 2009 (Stage 1), February 2-7, 2010 (Stage 2), and July 14-19, 2010 (Stage 3).

Sampling of Avifauna

Fieldwork adopted the “RAPELD” type of sampling delineation, using the Program of Research in Biodiversity (PPBio), created by the Ministry of Science and Technology. Nonetheless, only qualitative data are hereby presented. In summary, each defined region possesses a linear transect of 5 km in length on which were installed five perpendicular groupings (300 m in length), with 1 km distance between them. In these areas, three different sampling methods were used: mist-nets, count points and transection. In each of the five groupings, a line containing twelve nets was installed, mounted in sequence (nets of 12 × 3 m, 30 mm mesh with four pouches each). The nets were opened in the morning (between 6:00 h and 11:00 h) and in the afternoon (between 16:00 h and 18:00 h) during three consecutive



FIGURE 2: General aspect of savannas (cerrado and natural grasslands) interwoven by *buriti* palms and ciliary vegetation east of Vila Nova, Santana, Amapá (photo: F. Schunck).

days for each of the five established lines; an effort totaling 136,080 h.m² per study area (see Straube and Bianconi 2002, Roos 2010). Data collection at count points was accomplished at each of the groupings along three days. Three count points were established in each grouping, separated by 150 meters. At each point, birds were detected for ten minutes at a maximum radius of 50 meters. This methodology equaled a total of 135 points or 22.5 h per study area. Finally, sampling by transection was realized over three consecutive days, always in the morning (between 06:00 and 09:00 hs), walking along a 5 km transect and making notes on species and number of individuals registered. Transection totaled 27 h of sampling per study area.

Professional recorders were used to aid in fieldwork: Sony TCM 5000-EV, Sony PCM-D50 and Marantz PMD660; *Sennheiser* ME 66 and *Yoga* HT81 shotgun microphones; as well as 10 × 50 and 8 × 40 binoculars. All recorded vocalizations and photographs were deposited in data banks of the respective authors.

When relevant, some recordings were deposited in the Xeno-Canto archive (www.xeno-canto.org), referred to in the text by the acronym XC followed by catalogue number. The voucher material collected was deposited in the collection at the zoology museum of the University of São Paulo, referred to in the text by the acronym MZUSP.

In stages 1 and 2, the samplings for the two areas are considered here to have been done in the “rainy” season, and sampling during stage 3 corresponds to the “dry” season. It should be emphasized that during sampling 3 the region was constantly hit by rain. Yet, the efforts during both seasons are considered unequal, and seasonal differences as presented here must be viewed cautiously.

Nomenclature and systematic order follows CBRO (2011).

RESULTS AND DISCUSSION

Considering the two areas together, we recorded 386 species of birds belonging to 58 families, of which 277 species had some type of documentation (Appendix). The most representative families were Thamnophilidae (35 species), Tyrannidae (29, excluding 15 Rhynchocyclidae and 4 *incertae sedis*), Psittacidae (23) and Trochilidae (22). Of the total species, 339 were registered in the rainy season and 259 in the dry season. Only 24 of the species are considered exclusive to northern Amazônia and Tepuis (*sensu* Stotz *et al.* 1996), and one of them – *Cypsnagra hirundinacea* – is endemic to Cerrado (Silva 1997).

In RESEX Cajari 263 species of birds were registered, of which 243 were registered in forestal environments (211 exclusively in this phytophysiognomy). In Vila Nova nearly the same number were registered: 264 species of birds, of which 178 were forestal (141 exclusive); and 92 were registered in cerrados and grasslands (respectively, 11 and 9 exclusive). The presence of these savanna-like environments made possible the register of diverse species typical of open areas, such as *Colinus cristatus*, *Burhinus bistriatus*, *Chordeiles pusillus*, *Elaenia cristata*, *E. chiriquensis*, *Xolmis cinereus*, *Cypsnagra hirundinacea*, *Ammodramus humeralis*, *Emberizoides herbicola*, *Sturnella militaris* and *S. magna*. In the portions of Dense Ombrophilous Forest (terra-firme), *Myrmeciza ferruginea*, *Xiphorhynchus pardalotus*, *Philydor erythrocerum*, *Onychorhynchus coronatus*, *Perissocephalus tricolor* and *Machaeropterus pyrocephalus* are remarkable.

Noteworthy records

Pyrrhura picta

Novaes (1974) mentions that the nominal form as well as *P. picta amazonum* occur in Amapá; the last represented by a specimen of the Vila Nova River. Given that this species was not collected, it was not possible to confirm the sub-specific identity of our registers in RESEX Cajari. Nonetheless, the color of its auricular region (off white, with a clearly yellowish / brownish shade) agrees with the form of *P. picta amazonum*. Unfortunately, it was not possible to verify if the wing undercoverts were green (another diagnostic feature of this sub-species). Therefore, we prefer to leave open the complete taxonomic determination of our registers.

Nyctibius leucopterus

The distribution of this species has been recently extended by new records in Amazonia as well as in the Atlantic Forest (see Costa *et al.* 2010 and references therein). For Amapá, its presence was first revealed by Coltro

Jr. (2008). However, no documented register was made available to date. An individual of this species was found for three consecutive days in RESEX Cajari between February 10 and 12, 2010, at which point its call was recorded (XC 77726). Its presence in the area was always detected after sounding *playback* simulations of its voice, which prompted the bird to approach the researcher, flying above the canopies of surrounding trees. The bird appeared more active in the 5 or 10 minutes preceding daybreak (*c.* 30 min before sunrise), stopping to sing and respond to the *playback* when the sky was already partially lighted and its silhouette in flight became easily visible.

Hydropsalis maculicauda

This species was recorded on July 16, 2010 in the midst of an abandoned pasture (herbaceous vegetation with *c.* 2 m height), just before dawn (XC 79111). Aside from being previously cited to exist in the state (Souza *et al.* 2008, Aguiar *et al.* 2010), this appears to be the first documented register of the species in Amapá.

Hydropsalis torquata

Previously, this species was known from only one locality to the north of the Amazonas River: the savannas of Sipaliwini, in Suriname (O'Shea 2005, Cleere 2010, Mittermeier *et al.* 2010). One female was collected in the savanna region of Vila Nova on January 24, 2009 (MZUSP 82341). This comes to be the first register for Amapá and the first locality of occurrence in Brazil north of the Amazonas for this species. The presence of *Hydropsalis torquata* in the cerrados of Amapá also reinforces the greater similarity of Sipaliwini with Brazilian cerrados compared to the open areas of Guiana (Mittermeier *et al.* 2010).

Threnetes niger loehkeni

In total, four specimens were collected at the two areas by us, which extends the geographic distribution of this taxon known previously only from the type locality (Serra do Navio, in central Amapá). Novaes (1974) initially interpreted the citation of the collection of *T. leucurus medianus* from the Cajari River (Ruschi 1957) as corresponding to *T. "leucurus" loehkeni*. Afterward, and in the face of the publication of two synonyms of *T. loehkeni* by Ruschi (1975, 1976), Novaes reconsidered that *T. leucurus medianus* could in fact occur in the lowlands of Amapá, remaining *T. "leucurus" loehkeni* restricted to mountainous areas (Novaes 1978). Quite surprisingly, Ruschi never again cited *T. leucurus medianus* as occurring in Amapá (*e.g.*, Ruschi 1982), and there is no skin of Ruschi at the Museu Mello Leitão that attests to the occurrence of this taxon at the Cajari River (Vielliard 1994, *contra* Ruschi 1957). The taxonomic status of this

distinct form is quite controversial (see Mallet-Rodrigues 2006), but given the differences in coloration of the tail, upperparts and underparts, in relation to *T. leucurus*, it appears to us more parsimonious to tentatively subordinate *loehkeni* to *Threnetes niger*, as suggested by Vielliard (1994). More material from northern Amapá is strongly needed to clarify the relationship between *loehkeni* and *T. niger*, in order to eventually justify treatment of the former as a full species. Keeping in mind the above, the occurrence of *T. leucurus* in Amapá must be disregarded.

Phaethornis rufurumii amazonicus and *Picumnus cirratus macconnelli*

Both taxons are typical habitants of the *várzeas* of Amazonas and some of its main affluents. As such, we highlight the collection of these two species in woodlots and narrow riverine forest within the mosaic of savannistic formations of Vila Nova, distant from the widest rivers (respectively MZUSP 82355 and 82379).

Sclerurus caudacutus

Novaes (1974) attributed the specimens of *S. caudacutus* from Amapá to the form *S. c. insignis* Zimmer, 1934, reinforcing that the identification was based purely on geography, since he lacked nominal specimens for comparison. One specimen collected by us has dark uppertail coverts, virtually concolor with the dorsal side,



FIGURE 3: Male of *Dacnis flaviventer* registered at the edge of the Vila Nova River in Mazagão, Amapá, on July 18, 2010 (photo: V. Q. Piacentini).

without the reddish tone that Zimmer (1934) mentioned as a diagnosis of *S. c. insignis*. Thus, it seems licit to consider our register as *Sclerurus c. caudacutus*, even tentatively (since there is also a lack of material from French Guiana for comparison). Subsequently, we also suggest that the occurrence of *S. c. insignis* in Amapá should be disregarded until unequivocal records are eventually presented.

Lophotriccus galeatus and *L. vitiosus guianensis*

These two species occur in sympatry at RESEX Cajari, and possibly in a good part of Amapá. It calls attention to the ecological segregation between these two species; *L. vitiosus guianensis* occupying higher strata from the understory to the canopy (above 6-8 m in height) in areas of terra-firme forest, and *L. galeatus* occupying lower forestal strata, commonly between 2-4 m, aside from forestal borders and other perturbed areas (*e.g.*, clearings). *L. vitiosus* is among the most commonly registered species in the forests of RESEX Cajari.

Dacnis flaviventer

Until recently this species was not included in the published records of Amapá, even though it was collected in this state more than 40 years ago; those specimens being recently described as a new subspecies, *D. f. orientalis* (Grantsau 2010). A couple was seen repeatedly in the environs of housing close to the banks of the Vila Nova River during the third stage of sampling in that region, and was even photographed (Figure 3). The photos available do not allow for the evaluation of characters which differentiate the two subspecies, necessitating further collecting in order to evaluate the constancy of the diagnosis presented by Grantsau (2010). This species was already known for the northern bank of the Amazonas River in the state of Pará, where it occurs along *várzeas*, making its presence in Amapá fairly expected.

Sporophila angolensis

A male specimen collected calls attention for having a pair of white external rectrices. Examples of leucism are sufficiently common among diverse passeriforms. For this species it is cited to exist in other regions of Brazil, and in captivity as well (Piacentini 2001).

Final Considerations

As expected, given the size and degree of conservation of RESEX Cajari, the avifaunistic community at the location is quite complete. It boasts the presence of diverse, strictly forestal bird species or those which

depend on large extensions of preserved forests; examples of which are large raptors like *Harpia harpyja*, *Morphnus guianensis*, *Spizaetus tyrannus* and *S. ornatus*. Various species of cynegetic birds were also registered, and despite signs of hunting, the impact is apparently still not intense. Among cynegetic birds we emphasize the following: *Tinamus major*, *T. guttatus*, *Penelope marail* and *Psophia crepitans*.

The importance of Amapá savannas was recently highlighted by De Luca *et al.* (2009), who identified an *Important Bird Area* (IBA; an important area for the conservation of birds) whose limits shelter a large extension with the predominance of savannas. The area of fieldwork in Vila Nova corresponds exactly to the southwestern portion of this IBA and still protects various representatives of cerrado and natural grasslands. Although various representative birds of these environments have been found, intensification in the exploration of the grasslands (pastures and even agricultural cultivation) can compromise the conservation of these species, especially those that depend on tall grassy areas.

The total number of birds observed in southern Amapá (*i.e.*, considering the two sampling areas) is quite representative and slightly supersedes the numbers available for the few localities in Amapá that have been subjected to surveys. (Coltro Jr. 2008, Souza *et al.* 2008, Aguiar and Naiff 2010, Aguiar *et al.* 2010). It must be mentioned that for the localities used as comparison, as well as for the areas sampled here, complementary inventories are still necessary. This is especially true for RESEX Cajari, which had only one of its main phytophysognomies (Dense Ombrophilous Terra-Firme Forest) sampled. Various other environments of this Conservation Unit could not be inventoried, such as *várzeas* and savannas. Yet we believe that its bird richness must be similar to the total observed by us in southern Amapá.

ACKNOWLEDGEMENTS

The present study resulted in part from the fieldwork realized through the environmental licensing process of Linhas de Transmissão (LTs) 230 kV Jurupari – Laranjal – Macapá and 500 kV Jurupari – Oriximiná, of which we thank Ecology and Environment of Brazil; especially Arlei Mazurec, Vitor Rademaker, André Zucco and Aline Gaglia, for the opportunity and support in accomplishing this work. We also thank: Bret Whitney and Thiago V. V. Costa for help in identifying some recordings; Dr. Luís Fábio Silveira at the Museu de Zoologia of USP for support in relation to the material deposited at that institution; Giulyana A. Benedicto, Reginaldo Gomes and Paulo César Balduino (taxidermist) for participating during some stages of fieldwork; and Sr. Manoel and D. Nilza for all the support in Vila Nova. J. F. Pacheco made important comments to the paper. VQP thanks the Fundação de Apoio a Pesquisa do Estado de São Paulo (FAPESP) for a doctoral fellowship (process n. 06/60300-4); MAR thanks Coordenação de Aperfeiçoamento de Pessoal de Ensino Superior (CAPES) for a M.Sc. fellowship.

REFERENCES

- Aguiar, K. M. O. and Naiff, R. H. (2010). Composição da avifauna da Área de Proteção Ambiental do Rio Curiaú, Macapá, Amapá, Brasil. *Ornithol.*, 4:36-48.
- Aguiar, K. M. O.; Naiff, R. H. and Xavier, B. (2010). Aves da Reserva Biológica do Lago Piratuba, Amapá, Brasil. *Ornithol.*, 4:1-14.
- BirdLife International. (2010). The BirdLife checklist of the birds of the world, with conservation status and taxonomic sources. Version 3. Downloaded from www.birdlife.org/datazone/species/downloads/BirdLife_Checklist_Version_3.zip.
- CBRO [Comitê Brasileiro de Registros Ornitológicos]. (2011). *Listas das aves do Brasil, 10ª Edição*. Versão de 25/01/2011. Disponível em www.cbro.org.br.
- Cleere, N. (2010). *Nightjars, Potoos, Frogmouths, Oilbird and Owlet-nightjars of the world*. Hampshire: Princeton University Press & Wildguides.
- Coltro Jr., L. A. (2008). A Avifauna do Parque Nacional Montanhas do Tumucumaque Registrada durante o projeto de inventários biológicos rápidos, pp. 33-37. In: Bernard, E. (ed.) *Inventários Biológicos Rápidos no Parque Nacional Montanhas do Tumucumaque, Amapá, Brasil*. RAP Bulletin of Biological Assessment, 48. Arlington: Conservation International.
- Costa, T. V. V.; Andretti, C. B.; Laranjeiras, T. O. and Rosa, G. A. B. (2010). Discovery of White-winged Potoo *Nyctibius leucopterus* in Espírito Santo, Brazil, with remarks on its distribution and conservation in the Atlantic Forest. *Bull. Brit. Orn. Club*, 130(4):260-265.
- De Luca, A. C.; Develey, P. F.; Bencke, G. A. and Goerck, J. M. (2009). *Áreas importantes para a conservação das aves no Brasil. Parte II – Amazônia, Cerrado e Pantanal*. SAVE Brasil, São Paulo.
- Grantsau, R. (2010). *Guia completo para identificação das aves do Brasil*. 2 vol. São Carlos, Ed. Vento Verde.
- IBGE [Instituto Brasileiro de Geografia e Estatística]. (2004). *Mapa de vegetação do Brasil*. 3rd ed. Brasília: IBGE.
- IBGE [Instituto Brasileiro de Geografia e Estatística]. (2006). *Mapas de unidades de relevo do Brasil*. 2nd ed. Brasília: IBGE.
- Mallet-Rodrigues, F. (2006). Táxons de aves de validade questionável com ocorrência no Brasil. III – Trochilidae (I). *Rev. Bras. Orn.* 14:475-479.
- Mittermeier, J. C.; Zyskowski, K.; Stowe, E. S. and Lai, J. E. (2010). Avifauna of the Sipaliwini Savanna (Suriname) with insights into its biogeographic affinities. *Bull. Peabody Mus. Nat. Hist.*, 51:97-122.
- Novaes, F. C. (1974). Ornitologia do Território do Amapá I. *Publ. Avuls. Mus. Goeldi*, 25.
- Novaes, F. C. (1978). Ornitologia do Território do Amapá II. *Publ. Avuls. Mus. Goeldi*, 29.
- O'Shea, B. J. (2005). Notes on birds of the Sipaliwini savanna and other localities in southern Suriname, with six new species for the country. *Ornit. Neotr.*, 16:361-370.
- Pacheco, J. F. (2000). Alguns registros históricos para a ornitologia do Amapá. *Atual. Orn.*, 96:5.
- Piacentini, V. Q. (2001). Novos registros de plumagens aberrantes em Muscicapidae e Emberizidae neotropicais. *Tangara*, 1(4):183-188.
- Roos, A. L. (2010). Capturando aves, pp. 79-104. In: S. von Matter, F. C. Straube, I. Accordi, V. Q. Piacentini; J. F. Cândido-Junior (Orgs.). *Ornitologia e conservação: ciência aplicada, técnicas de pesquisa e conservação*. Rio de Janeiro: Technical Books.
- Ruschi, A. (1957). A trochilifauna do rio Cajari no Território do Amapá. *Bol. Mus. Biol. Mello Leitão*, 19:1-6.
- Ruschi, A. (1975). *Threnetes cristinae*, n. sp. *Bol. Mus. Biol. Mello Leitão, Sér. Zool.*, 83:1-3.
- Ruschi, A. (1976). Beija-flores do Amapá com a descrição de uma nova subespécie, *Threnetes niger freirei* n. sub sp. *Bol. Mus. Biol. Mello Leitão, Sér. Zool.*, 84:1-3

- Ruschi, A. (1982).** *Aves do Brasil, vol. 4. Beija-flores*. Rio de Janeiro: Expressão e Cultura.
- Silva, J. M. C. (1997).** Endemic bird species and conservation in the Cerrado region, South America. *Biodiv. and Cons.*, 6:435-450.
- Silva, J. M. C.; Oren, D. C.; Roma, J. C. and Henriques, L. M. P. (1997).** Composition and distribution patterns of the avifauna of an Amazonian upland savanna, Amapá, Brazil. *Orn. Monogr.*, 48:743-762.
- Souza, E. A.; Nunes, M. F. C.; Roos, A. L. and Araújo H. F. P. de. (2008).** *Aves do Parque Nacional do Cabo Orange*. Macapá: ICMBio/CEMAVE.
- Stotz, D. F.; Fitzpatrick, J. W.; Parker III, T. A. and Moskowitz, D. K. (1996).** *Neotropical Birds: Ecology and Conservation*. Chicago: Conservation International, Field Museum of Natural History & University of Chicago Press.
- Sneathlge, E. (1914).** Catálogo das aves amazônicas. *Bol. Mus. Goeldi*, 8:1-530.
- Straube, F. C. and Bianconi, G. V. (2002).** Sobre a grandeza e a unidade utilizada para estimar esforço de captura com utilização de redes-de-neblina. *Chiropt. Neotrop.*, 8:150-152.
- Teixeira, D. M. and Best, R. C. (1981)** Adendas à ornitologia do Território Federal do Amapá. *Bol. Mus. Para. Emilio Goeldi, Zool.*, 104:1-25.
- Vidal, L. B.; Silveira, L. F. and Gaban-Lima, R. (2001).** A pesquisa sobre a avifauna da bacia do Uaçá: uma abordagem interdisciplinar, pp. 287-358. In: Silva, A. L. and Ferreira, M. K. L. *Práticas pedagógicas na escola indígena*. Ed. Global, São Paulo.
- Vielliard, J. M. E. (1994).** *Catálogo dos Troquilídeos do Museu de Biologia Mello Leitão*. Santa Teresa: Ministério da Cultura, IBPC, MBML.
- Zimmer, J. T. (1934).** Studies of Peruvian Birds 16. Notes on the genera *Glyphorhynchus*, *Sittasomus*, *Deconychura*, *Margarornis*, *Premnornis*, *Premnoplex* and *Sclerurus*. *Amer. Mus. Nov.*, 757:1-22.
- Note added in proof.** Aleixo *et al.* (2011) have published (June 2011) new data on the distribution of birds north of Amazon river in Pará state, including data on *Hydropsalis torquata* and *Threnetes niger loehkeni* that complement and partially anticipate ours.
- Aleixo, A.; Poletto, F.; Lima, M. F. C.; Castro, M.; Portes, E. and Miranda, L. S. (2011).** Notes on the vertebrates of northern Pará, Brazil: a forgotten part of the Guianan Region, II. Avifauna. *Bol. Mus. Para. Emilio Goeldi, Ciênc. Nat.* 6(1):11-65.

APPENDIX: Bird species registered in southern Amapá at the Rio Cajari Extractive Reserve and in the region of Vila Nova.

Legend: * – Species Near Threatened according to BirdLife International (2010); ANT – Species endemic to northern Amazônia and Tepuis (according to Stotz *et al.* 1996); CER – species endemic to cerrado (Silva 1997).

Evidence: s (sound recording), p (photograph), c (specimen collected), n (captured in mist-net), v (visual register), a (aural register).

Environment: f (Dense Ombrophilous Forest), ce (cerrado), gr (grasslands), aa (open, Anthropized areas), wl (wetlands), rf (riverine forest).

Taxon	Evidence	Environment	Locality and season of register	
			Cajari	Vila Nova
Tinamidae (5)				
<i>Tinamus major</i>	s	f	rainy	rainy
<i>Crypturellus cinereus</i>	s	f	rainy	rainy
<i>Crypturellus soui</i>	s	f	rainy	dry, rainy
<i>Crypturellus undulatus</i>	s	ce, rf	rainy	rainy
<i>Crypturellus variegatus</i>	s	f	dry, rainy	dry
Anhimidae (1)				
<i>Anhima cornuta</i>	s,v	wt		dry, rainy
Anatidae (3)				
<i>Cairina moschata</i>	v	wt		dry, rainy
<i>Sarkidiornis sylvicola</i>	v	wt		rainy
<i>Amazonetta brasiliensis</i>	v	wt		rainy
Cracidae (2)				
<i>Ortalis motmot</i>	s,c	f	dry, rainy	dry, rainy
<i>Penelope marail</i> ANT	s,v	f	dry, rainy	
Odontophoridae (2)				
<i>Colinus cristatus</i>	s,v	gr		dry, rainy
<i>Odontophorus gujanensis</i>	s	f	rainy	dry, rainy
Ardeidae (4)				
<i>Tigrisoma lineatum</i>	v	wt		rainy
<i>Butorides striata</i>	v	wt		rainy
<i>Ardea alba</i>	v	wt		dry, rainy
<i>Egretta thula</i>	v	wt		dry, rainy
Threskiornithidae (1)				
<i>Mesembrinibis cayennensis</i>	v,a	wt		rainy
Cathartidae (5)				
<i>Cathartes aura</i>	p	f,ce,gr,aa	dry, rainy	dry, rainy
<i>Cathartes burrovianus</i>	v	ce,gr,aa		dry, rainy
<i>Cathartes melambrotus</i>	p	f	dry, rainy	dry, rainy
<i>Coragyps atratus</i>	p	f,ce,gr,aa	rainy	dry, rainy
<i>Sarcoramphus papa</i>	v	f,ce		rainy
Accipitridae (19)				
<i>Elanoides forficatus</i>	v	f	dry, rainy	
<i>Gampsonyx swainsonii</i>	v	ce,aa	dry	
<i>Harpagus bidentatus</i>	s,v	f	rainy	
<i>Accipiter bicolor</i>	v	f	dry	
<i>Ictinia plumbea</i>	v	ce,aa	dry, rainy	
<i>Busarellus nigricollis</i>	v	wt,rf		rainy
<i>Helicolestes hamatus</i>	v	wt,rf		rainy
<i>Genanospiza caerulescens</i>	v	wt,rf	rainy	dry
<i>Buteogallus schistaceus</i>	v	wt,aa		rainy
<i>Heterospizias meridionalis</i>	s,p	ce,aa		dry, rainy
<i>Rupornis magnirostris</i>	p,c	f,ce,aa	dry	dry, rainy
<i>Genanoaetus albicaudatus</i>	p	ce,aa		rainy
<i>Pseudastur albicollis</i>	v	f		dry
<i>Leucopternis melanops</i>	s,p,c	f	rainy	rainy
<i>Buteo nitidus</i>	p,a	f,aa	dry	
<i>Morphnus guianensis</i> *	s	f	rainy	
<i>Harpia harpyja</i> *	p	f	rainy	
<i>Spizaetus tyrannus</i>	s,v	f	dry, rainy	rainy
<i>Spizaetus ornatus</i>	a	f	dry, rainy	

Taxon	Evidence	Environment	Locality and season of register	
			Cajari	Vila Nova
Falconidae (11)				
<i>Daptrius ater</i>	v,a	f	rainy	
<i>Ibycter americanus</i>	s,v	f	dry, rainy	dry
<i>Caracara cheriway</i>	p	ce,gr,aa	rainy	dry, rainy
<i>Milvago chimachima</i>	v,a	ce,gr,aa		dry, rainy
<i>Herpetotheres cachinnans</i>	s,v	f,ce	rainy	dry, rainy
<i>Micrastur ruficollis</i>	s,p,c	f	rainy	rainy
<i>Micrastur gilvicollis</i>	s	f	dry, rainy	
<i>Micrastur mirandollei</i>	s	f	rainy	
<i>Micrastur semitorquatus</i>	s,v	f		dry
<i>Falco ruficularis</i>	v,a	ce,gr,aa	dry, rainy	
<i>Falco femoralis</i>	p	ce,gr,aa		rainy
Psophiidae (1)				
<i>Psophia crepitans</i>	s,v	f	rainy	
Rallidae (3)				
<i>Aramides cajanea</i>	p,a,c	wt,rf		rainy
<i>Laterallus viridis</i>	a	wt		rainy
<i>Porzana albicollis</i>	a	wt		rainy
Charadriidae (1)				
<i>Vanellus chilensis</i>	v,a	ce,gr,aa,wt		dry, rainy
Burhinidae (1)				
<i>Burhinus bistriatus</i>	s,v	gr		rainy
Scolopacidae (1)				
<i>Tringa solitaria</i>	p	wt		rainy
Jacanidae (1)				
<i>Jacana jacana</i>	p	wt		dry, rainy
Columbidae (10)				
<i>Columbina passerina</i>	p,c	ce,gr,aa		rainy
<i>Columbina minuta</i>	v	ce,gr,aa		rainy
<i>Columbina talpacoti</i>	v	ce,gr,aa		dry
<i>Patagioenas speciosa</i>	v	f	dry, rainy	dry, rainy
<i>Patagioenas cayennensis</i>	s,p,c	f,ce	rainy	dry, rainy
<i>Patagioenas plumbea</i>	s,v	f	dry, rainy	rainy
<i>Patagioenas subvinacea</i>	s	f	rainy	
<i>Leptotila verreauxi</i>	v	f,ce		rainy
<i>Leptotila rufaxilla</i>	s,p,c	f	rainy	dry, rainy
<i>Geotrygon montana</i>	s,p,c	f	dry, rainy	rainy
Psittacidae (23)				
<i>Ara ararauna</i>	v,a	f,ce	rainy	dry, rainy
<i>Ara macao</i>	v,a	f	rainy	rainy
<i>Ara chloropterus</i>	v,a	f	dry, rainy	rainy
<i>Ara severus</i>	v,a	f	dry, rainy	dry, rainy
<i>Orthopsittaca manilata</i>	s,p	f,ce		dry, rainy
<i>Diopsittaca nobilis</i>	v,a	f,ce		dry, rainy
<i>Aratinga leucophthalma</i>	s,v	ce	rainy	rainy
<i>Aratinga aurea</i>	v,a	ce		dry, rainy
<i>Pyrrhura picta</i>	s,v	f	dry, rainy	rainy
<i>Brotogeris versicolurus</i>	v,a	f		dry
<i>Brotogeris chrysoptera</i>	v,a	f	dry, rainy	dry, rainy
<i>Brotogeris sanctithomae</i>	s,p	f	rainy	dry, rainy
<i>Touit purpuratus</i>	v,a	f	rainy	
<i>Pionites melanocephalus</i> ANT	s,p	f	dry, rainy	dry
<i>Pytilia caica</i> ANT	s,v	f	rainy	
<i>Graydidascalus brachyurus</i>	s,p	rf		rainy
<i>Pionus menstruus</i>	s,c	f	dry, rainy	dry, rainy
<i>Pionus fuscus</i>	s,v	f	rainy	dry, rainy
<i>Amazona festiva</i>	v,a	rf		rainy

Taxon	Evidence	Environment	Locality and season of register	
			Cajari	Vila Nova
<i>Amazona farinosa</i>	s,v	f	dry, rainy	dry
<i>Amazona amazonica</i>	s,c	f	dry, rainy	dry, rainy
<i>Amazona ochrocephala</i>	v,a	f		rainy
<i>Deroptryus accipitrinus</i>	s,v	f	dry, rainy	
Cuculidae (4)				
<i>Piaya cayana</i>	s,p,c	f,ce	dry, rainy	dry
<i>Crotophaga major</i>	v,a	wt,rf		rainy
<i>Crotophaga ani</i>	c	gr,aa	dry, rainy	dry
<i>Tapera naevia</i>	a	f,ce		rainy
Strigidae (6)				
<i>Megascops watsonii</i>	s,p	f	dry, rainy	rainy
<i>Lophotrix cristata</i>	s	f	dry, rainy	
<i>Pulsatrix perspicillata</i>	a	f	dry, rainy	dry
<i>Bubo virginianus</i>	a	f	dry	
<i>Strix hubula</i>	a	f	rainy	
<i>Glauucidium hardyi</i>	s,c	f	dry, rainy	rainy
Nyctibiidae (2)				
<i>Nyctibius griseus</i>	s,c	f,ce	dry, rainy	rainy
<i>Nyctibius leucopterus</i>	s,v	f	dry	
Caprimulgidae (8)				
<i>Lurocalis semitorquatus</i>	s,v	f,aa	rainy	
<i>Hydropsalis nigrescens</i>	c	aa		dry
<i>Hydropsalis albicollis</i>	s,v	ce,gr,aa	dry	dry
<i>Hydropsalis parvula</i>	v,a	ce,aa		rainy
<i>Hydropsalis maculicauda</i>	s	aa		dry
<i>Hydropsalis climacocerca</i>	v	ce,aa		rainy
<i>Hydropsalis torquata</i>	c	ce,aa		rainy
<i>Chordeiles pusillus</i>	s,p,c	ce,gr,aa		dry, rainy
Apodidae (4)				
<i>Chaetura spinicaudus</i>	v	f	dry, rainy	dry
<i>Chaetura chapmani</i>	v	f	rainy	rainy
<i>Chaetura brachyura</i>	s,v	f		dry, rainy
<i>Tachornis squamata</i>	v	wt	dry	dry, rainy
Trochilidae (22)				
<i>Glaucis hirsutus</i>	p,c	f		rainy
<i>Threnetes niger</i>	p,c	f	rainy	rainy
<i>Phaethornis rufurumii</i>	p,c	f		rainy
<i>Phaethornis ruber</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Phaethornis bourcieri</i>	c	f	rainy	
<i>Phaethornis superciliosus</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Phaethornis malaris</i>	c	f	rainy	
<i>Campylopterus largipennis</i>	p,c	f	dry, rainy	
<i>Anthracothorax viridigula</i>	v	f	rainy	
<i>Topaza pella</i>	p	f	rainy	
<i>Chrysolampis mosquitus</i>	c	aa	dry	
<i>Lophornis ornatus</i>	p	f	dry	
<i>Chlorostilbon notatus</i>	p,c	f		dry, rainy
<i>Thaluranina furcata</i>	c	f	dry, rainy	
<i>Hylocharis cyanus</i>	p	f	dry	
<i>Polytmus theresiae</i>	c	f		dry
<i>Amazilia versicolor</i>	c	f		rainy
<i>Amazilia fimbriata</i>	p,c	f		dry, rainy
<i>Heliobryx auritus</i>	v	f	rainy	
<i>Heliactin bilophus</i>	v	ce		dry
<i>Heliomaster longirostris</i>	v	ce	rainy	
<i>Calliphlox amethystina</i>	p,c	ce		rainy

Taxon	Evidence	Environment	Locality and season of register	
			Cajari	Vila Nova
Trogonidae (4)				
<i>Trogon melanurus</i>	s,c	f	dry, rainy	dry
<i>Trogon viridis</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Trogon violaceus</i>	s,c	f	dry, rainy	rainy
<i>Trogon rufus</i>	s,p,c	f	dry, rainy	
Alcedinidae (4)				
<i>Megaceryle torquata</i>	s,v	wt,rf	rainy	dry, rainy
<i>Chloroceryle amazona</i>	p	wt,rf		rainy
<i>Chloroceryle aenea</i>	p,c	f,wt,rf		dry, rainy
<i>Chloroceryle americana</i>	v	wt,rf		dry
Momotidae (1)				
<i>Momotus momota</i>	s,p,c	f,rf	dry, rainy	dry, rainy
Galbulidae (5)				
<i>Galbula albirostris</i> ANT	a	f	dry	
<i>Galbula galbula</i>	s,p,c	f		dry, rainy
<i>Galbula leucogastra</i>	s,v	f	dry	
<i>Galbula dea</i>	s,v	f	dry, rainy	
<i>Jacamerops aureus</i>	s,v	f	dry	
Bucconidae (7)				
<i>Notharchus macrorhynchos</i> ANT	s,v	f	dry	
<i>Notharchus tectus</i>	v	f	rainy	
<i>Bucco tamatia</i>	s	f	dry	rainy
<i>Bucco capensis</i>	p,c	f	dry	
<i>Malacoptila fusca</i>	p,c	f	rainy	
<i>Monasa atra</i> ANT	s,p,c	f	dry, rainy	dry, rainy
<i>Chelidoptera tenebrosa</i>	s,v	aa	dry, rainy	dry, rainy
Capitonidae (1)				
<i>Capito niger</i> ANT	s,p,c	f	dry	rainy
Ramphastidae (5)				
<i>Ramphastos tucanus</i>	s,p	f	dry, rainy	dry, rainy
<i>Ramphastos vitellinus</i>	s,c	f	dry, rainy	dry, rainy
<i>Selenidera piperivora</i> ANT	c	f		dry
<i>Pteroglossus viridis</i> ANT	c	f	rainy	
<i>Pteroglossus aracari</i>	c	f	dry, rainy	dry
Picidae (14)				
<i>Picumnus exilis</i>	a	f	rainy	
<i>Picumnus cirratus</i>	p,c	f,ce		rainy
<i>Melanerpes cruentatus</i>	v,a	f	dry, rainy	
<i>Veniliornis cassini</i> ANT	s,v	f	dry	rainy
<i>Veniliornis affinis</i>	v,a	f	dry	rainy
<i>Piculus flavigula</i>	s,v	f	dry, rainy	
<i>Colaptes punctigula</i>	v	gt,aa		dry, rainy
<i>Celeus undatus</i>	s,v	f	dry, rainy	dry, rainy
<i>Celeus elegans</i>	v,a	f		rainy
<i>Celeus flavus</i>	c	f		rainy
<i>Celeus torquatus</i>	s,c	f	dry, rainy	dry, rainy
<i>Dryocopus lineatus</i>	v,a	f,ce	dry, rainy	dry, rainy
<i>Campephilus rubricollis</i>	s,c	f	dry, rainy	rainy
<i>Campephilus melanoleucos</i>	s,c	f	dry, rainy	dry, rainy
Thamnophilidae (35)				
<i>Terenura spodioptila</i>	s,v	f	rainy	
<i>Myrmornis torquata</i>	p,c	f	rainy	
<i>Microrhophias quixensis</i>	s,v	f	rainy	
<i>Myrmeciza longipes</i>	s,c	f	dry, rainy	dry
<i>Myrmeciza ferruginea</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Myrmeciza atrothorax</i>	s,p,c	f		rainy
<i>Epinecrophylla gutturalis</i> ANT	s,p,c	f	dry, rainy	

Taxon	Evidence	Environment	Locality and season of register	
			Cajari	Vila Nova
<i>Myrmotherula brachyura</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Myrmotherula guttata</i> ANT	p,c	f	dry, rainy	
<i>Myrmotherula axillaris</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Myrmotherula menetriesii</i>	v	f	rainy	
<i>Formicivora grisea</i>	p,c	ce		rainy
<i>Formicivora rufa</i>	s,p,c	ce		dry, rainy
<i>Thamnomanes ardesiacus</i>	s,p,c	f	dry, rainy	dry
<i>Thamnomanes caesius</i>	s,p,c	f	dry, rainy	rainy
<i>Herpsilochmus sticturus</i> ANT	s,v	f	rainy	
<i>Herpsilochmus stictocephalus</i> ANT	s,v	f	dry, rainy	
<i>Sakesphorus luctuosus</i>	s,p	rf		rainy
<i>Thamnophilus doliatus</i>	p,a	f		dry, rainy
<i>Thamnophilus murinus</i>	s,c	f	dry, rainy	rainy
<i>Thamnophilus punctatus</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Thamnophilus amazonicus</i>	s,v	f	rainy	rainy
<i>Cymbilaimus lineatus</i>	s,v	f	dry, rainy	
<i>Frederickena viridis</i> ANT	s,c	f	rainy	
<i>Schistocichla leucostigma</i>	s,p,c	f	dry, rainy	
<i>Hylophylax naevius</i>	c	f	dry	
<i>Percnostola rufifrons</i> ANT	s,p,c	f	dry, rainy	dry, rainy
<i>Myrmoborus lugubris</i>	s,v	f		rainy
<i>Cercomacra cinerascens</i>	s,p	f	dry, rainy	dry
<i>Cercomacra tyrannina</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Cercomacra nigrescens</i>	v,a	f		rainy
<i>Hypocnemis cantator</i>	s,p,c	f	dry, rainy	rainy
<i>Pithys albifrons</i>	s,p,c	f	dry, rainy	rainy
<i>Willisornis poecilinotus</i>	s,p,c	f	dry, rainy	
<i>Gymnopithys rufigula</i> ANT	s,p,c	f	dry, rainy	
Grallariidae (3)				
<i>Grallaria varia</i>	a	f	dry, rainy	
<i>Hylopezus macularius</i>	a	f	rainy	
<i>Myrmothera campanisona</i>	s,v	f	dry, rainy	
Formicariidae (2)				
<i>Formicarius colma</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Formicarius analis</i>	s,v	f	rainy	
Scleruridae (2)				
<i>Sclerurus mexicanus</i>	p,c	f	rainy	
<i>Sclerurus caudacutus</i>	p,c	f	dry	
Dendrocolaptidae (13)				
<i>Dendrocincla fuliginosa</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Deconychura longicauda</i>	n	f	rainy	
<i>Sittasomus griseicapillus</i>	a	f,ce	dry	
<i>Certhiasomus stictolaemus</i>	c	f	rainy	
<i>Glyphorhynchus spirurus</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Xiphorhynchus pardalotus</i>	s,p,c	f	dry, rainy	rainy
<i>Xiphorhynchus obsoletus</i>	a	f		rainy
<i>Xiphorhynchus guttatus</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Dendroplex picus</i>	s,p,c	f,ce,rf	rainy	dry, rainy
<i>Lepidocolaptes albolineatus</i>	s,v	f		rainy
<i>Dendrocolaptes certhia</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Dendrocolaptes picumnus</i>	p,c	f		rainy
<i>Hylexetastes perrotii</i> ANT	s,p,c	f	dry, rainy	
Furnariidae (9)				
<i>Xenops minutus</i>	s,p,c	f	dry, rainy	rainy
<i>Microxenops milleri</i>	v	f	rainy	
<i>Berlepschia rikeri</i>	v,a	wt		dry
<i>Furnarius figulus</i>	v	aa		dry

Taxon	Evidence	Environment	Locality and season of register	
			Cajari	Vila Nova
<i>Automolus infuscatus</i>	c	f	rainy	
<i>Philydor ruficaudatum</i>	v,a	f	rainy	
<i>Philydor erythrocerum</i>	s,p,c	f	dry, rainy	rainy
<i>Philydor pyrrhodes</i>	n	f	rainy	
<i>Synallaxis gujanensis</i>	v,a	f		dry
Pipridae (8)				
<i>Tyranneutes virescens</i> ANT	s,p,c	f	dry, rainy	rainy
<i>Pipra aureola</i>	s,p,c	f		dry, rainy
<i>Pipra erythrocephala</i>	s,c	f	dry, rainy	dry, rainy
<i>Lepidothrix serena</i> ANT	c	f	dry	
<i>Manacus manacus</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Machaeropterus pyrocephalus</i>	p,c	f		dry, rainy
<i>Dixiphia pipra</i>	p,c	f	dry, rainy	rainy
<i>Chiroxiphia pareola</i>	s,p,c	f	rainy	dry, rainy
Tityridae (9)				
<i>Onychorhynchus coronatus</i>	p,c	f	dry, rainy	rainy
<i>Terenotriccus erythrurus</i>	s,c	f	dry, rainy	
<i>Schiffornis olivacea</i>	s,p,c	f	dry	dry, rainy
<i>Laniocera hypopyrra</i>	s,p,c	f	dry, rainy	
<i>Tityra cayana</i>	v	f	rainy	dry
<i>Tityra semifasciata</i>	v	f		rainy
<i>Pachyramphus marginatus</i>	s,v	f	dry, rainy	
<i>Pachyramphus surinamus</i> ANT	s	f	dry	
<i>Pachyramphus minor</i>	s,p,c	f	dry	dry
Cotingidae (7)				
<i>Lipaugus vociferans</i>	s,v	f	dry, rainy	dry, rainy
<i>Gymnoderus foetidus</i>	v	f	rainy	
<i>Xipholena punicea</i>	s,c	f	dry, rainy	dry
<i>Cotinga cayana</i>	p	f	rainy	
<i>Querula purpurata</i>	s,c	f	dry, rainy	rainy
<i>Perissocephalus tricolor</i> ANT	s,c	f	dry, rainy	dry
<i>Phoenicircus carnifex</i>	s	f	dry, rainy	
Incertae sedis (4)				
<i>Platyrinchus saturatus</i>	p,c	f	dry	
<i>Platyrinchus coronatus</i>	s,c	f	dry, rainy	
<i>Platyrinchus platyrhynchos</i>	s,p,c	f	dry, rainy	
<i>Piprites chloris</i>	s,v	f	dry, rainy	
Rhynchocyclidae (15)				
<i>Mionectes oleagineus</i>	p,c	f	dry, rainy	rainy
<i>Mionectes macconnelli</i>	p,c	f	dry, rainy	dry
<i>Leptopogon amaurocephalus</i>	v,a	f	rainy	
<i>Corythopis torquatus</i>	p,c	f	dry, rainy	rainy
<i>Rhynchocyclus olivaceus</i>	p,c	f	rainy	
<i>Tolmomyias assimilis</i>	s	f	dry	
<i>Tolmomyias poliocephalus</i>	s,p,c	f	dry, rainy	rainy
<i>Tolmomyias flaviventris</i>	s,p,c	ce	rainy	dry, rainy
<i>Todirostrum maculatum</i>	s,p	f		dry, rainy
<i>Todirostrum pictum</i>	s	f	dry	
<i>Poecilotriccus fumifrons</i>	s,v	f,ce	dry, rainy	
<i>Myiornis ecaudatus</i>	v	f	dry	
<i>Hemitriccus zosterops</i>	s	f	dry	
<i>Lophotriccus vitioides</i>	s,p,c	f	dry, rainy	
<i>Lophotriccus galeatus</i>	s,p,c	f	dry, rainy	dry, rainy
Tyrannidae (29)				
<i>Camptostoma obsoletum</i>	v,a	f,ce	dry, rainy	dry, rainy
<i>Ornithion inerme</i>	s	f	dry	
<i>Zimmerius gracilipes</i>	s	f	rainy	

Taxon	Evidence	Environment	Locality and season of register	
			Cajari	Vila Nova
<i>Elaenia flavogaster</i>	s,p,c	f,ce		dry, rainy
<i>Elaenia cristata</i>	v,a	ce		rainy
<i>Elaenia chiriquensis</i>	s,v	ce		dry
<i>Myiopagis gaimardii</i>	s,v	f,ce	dry, rainy	dry, rainy
<i>Tyrannulus elatus</i>	s,v	f		dry, rainy
<i>Attila cinnamomeus</i>	s,v	f		dry, rainy
<i>Attila spadiceus</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Legatus leucophaeus</i>	v,a	f	rainy	
<i>Ramphotrigon ruficauda</i>	s,n	f	dry	dry, rainy
<i>Myiarchus tuberculifer</i>	s,v	f	rainy	dry, rainy
<i>Myiarchus swainsoni</i>	s,c	f,ce		rainy
<i>Myiarchus ferrox</i>	s,c	f,ce	dry, rainy	dry, rainy
<i>Myiarchus tyrannulus</i>	s,p,c	f,ce		dry, rainy
<i>Strystes sibilator</i>	v,a	f	rainy	
<i>Rhytipterna simplex</i>	s,c	f	dry, rainy	dry, rainy
<i>Pitangus sulphuratus</i>	s,v	f,ce,aa	rainy	dry, rainy
<i>Myiodynastes maculatus</i>	v,a	f,ce	rainy	
<i>Tyrannopsis sulphurea</i>	v,a	f		rainy
<i>Megarynchus pitangua</i>	s,v	f,ce,aa	dry, rainy	dry, rainy
<i>Myiozetetes cayanensis</i>	v,a	f,ce,aa	dry, rainy	dry, rainy
<i>Myiozetetes similis</i>	c	f,aa	rainy	
<i>Tyrannus albogularis</i>	s,p,c	ce,gr		dry, rainy
<i>Tyrannus melancholicus</i>	s,p,c	f,ce,gr,aa	rainy	dry, rainy
<i>Tyrannus savana</i>	v	ce,gr,aa		dry, rainy
<i>Lathrotriccus euleri</i>	v,a	ce,aa		rainy
<i>Xolmis cinereus</i>	p,c	gr,aa		dry, rainy
Vireonidae (6)				
<i>Cyclarhis gujanensis</i>	v,a	f,ce,aa	dry	dry, rainy
<i>Vireolanius leucotis</i>	s,v	f	dry, rainy	
<i>Vireo olivaceus</i>	s,v	f	dry, rainy	dry, rainy
<i>Hylophilus thoracicus</i>	v,a	f	dry	
<i>Hylophilus muscipapinus</i>	s,v	f	dry, rainy	
<i>Hylophilus ochraceiceps</i>	s,p,c	f	dry, rainy	
Corvidae (1)				
<i>Cyanocorax cayanus</i> ANT	s,v	f	rainy	
Hirundinidae (4)				
<i>Atticora fasciata</i>	p	wt		dry
<i>Progne tapera</i>	v	aa		dry
<i>Progne chalybea</i>	s,p	aa	dry, rainy	dry, rainy
<i>Tachycineta albiventer</i>	v	wt		dry
Troglodytidae (5)				
<i>Troglodytes musculus</i>	s,v	f,ce,aa	rainy	dry, rainy
<i>Pheugopedius coraya</i>	s,p,c	f	dry, rainy	dry, rainy
<i>Cantorchilus leucotis</i>	v,a	f		rainy
<i>Henicorbhina leucosticta</i>	p,c	f		rainy
<i>Cyphorhinus arada</i>	s,p,c	f	dry, rainy	
Donacobiidae (1)				
<i>Donacobius atricapilla</i>	p	wt		rainy
Poliophtilidae (2)				
<i>Microbates collaris</i> ANT	v,a	f	rainy	
<i>Poliophtila plumbea</i>	s,p	f,ce	dry, rainy	
Turdidae (3)				
<i>Turdus nudigenis</i>	s	f		rainy
<i>Turdus leucomelas</i>	s,p,c	f,ce,aa	rainy	dry, rainy
<i>Turdus albicollis</i>	p,c	f	dry, rainy	dry, rainy
Mimidae (1)				
<i>Mimus saturninus</i>	v	gr,aa		rainy

Taxon	Evidence	Environment	Locality and season of register	
			Cajari	Vila Nova
Coerebidae (1)				
<i>Coereba flaveola</i>	s,p,c	f,ce,aa	dry, rainy	dry, rainy
Thraupidae (19)				
<i>Saltator grossus</i>	s,v	f	rainy	
<i>Saltator maximus</i>	s,p,n	f	dry, rainy	dry, rainy
<i>Nemosia pileata</i>	s,v	aa		rainy
<i>Cypsnagra hirundinacea</i> CER	v,a	ce		rainy
<i>Tachyphonus rufus</i>	v,a	f	dry, rainy	
<i>Ramphocelus carbo</i>	s,p,c	ce,rf	dry, rainy	dry, rainy
<i>Lanio cristatus</i>	c	f	dry	
<i>Lanio fulvus</i>	s,v	f	dry, rainy	
<i>Lanio surinamus</i>	c	f	rainy	
<i>Tangara mexicana</i>	s,p,c	f		dry, rainy
<i>Tangara episcopus</i>	p,c	f,ce,aa	rainy	dry, rainy
<i>Tangara palmarum</i>	p,c	f,ce,aa	rainy	dry, rainy
<i>Tangara cayana</i>	s,p,c	f,ce,aa		dry, rainy
<i>Schistochlamys melanopis</i>	v,a	ce		dry, rainy
<i>Dacnis lineata</i>	v	rf		rainy
<i>Dacnis flaviventer</i>	p	f		dry
<i>Dacnis cayana</i>	p,c	f,ce,aa	rainy	dry, rainy
<i>Cyanerpes cyaneus</i>	v	f	rainy	rainy
<i>Hemithraupis flavicollis</i>	v	f		rainy
Emberezidae (10)				
<i>Zonotrichia capensis</i>	c	gr,aa		dry, rainy
<i>Ammodramus humeralis</i>	s,p,c	gr		dry, rainy
<i>Sicalis luteola</i>	v	gr		dry
<i>Emberizoides herbicola</i>	s,p,c	gr		dry, rainy
<i>Volatinia jacarina</i>	v,a	gr,aa	rainy	rainy
<i>Sporophila plumbea</i>	s,p,c	gr		dry, rainy
<i>Sporophila americana</i>	p,a	gr		rainy
<i>Sporophila nigricollis</i>	c	gr	rainy	
<i>Sporophila angolensis</i>	s,p,c	gr,rf		dry, rainy
<i>Arremon taciturnus</i>	s,p,c	f	dry, rainy	rainy
Cardinalidae (3)				
<i>Habia rubica</i>	v,a	f	rainy	
<i>Granatellus pelzelni</i>	s,v	f	dry, rainy	
<i>Cyanoloxia cyanooides</i>	s,p,c	f	rainy	rainy
Parulidae (1)				
<i>Phaeothlypis mesoleuca</i>	s,v	f	rainy	
Icteridae (8)				
<i>Psarocolius viridis</i>	s,v	f	dry, rainy	rainy
<i>Cacicus haemorrhous</i>	s,v	f	dry, rainy	
<i>Cacicus cela</i>	s,p	f		dry, rainy
<i>Icterus cayanensis</i>	s,v	f	dry, rainy	rainy
<i>Chrysomus ruficapillus</i>	v	wt		rainy
<i>Molothrus oryzivorus</i>	v	gr	rainy	
<i>Sturnella militaris</i>	s,p,c	gr		dry, rainy
<i>Sturnella magna</i>	s,p,c	gr		dry, rainy
Fringillidae (4)				
<i>Euphonia chlorotica</i>	s,v	f,ce		rainy
<i>Euphonia violacea</i>	v,a	f		dry
<i>Euphonia chrysopasta</i>	s,v	f	rainy	
<i>Euphonia cayennensis</i>	s,v	f	dry, rainy	rainy