REPORT AND ANALYSIS OF BIRD CHARACTERIZATION IN COMMUNITIES ADJACENT TO THE MOUTH OF THE CAÑO MATAVÉN (LA URBANA, SARRAPIA, PIEDRA PINTADA) IN THE RESGUARDO INDÍGENA UNIFICADO – SELVA DE MATAVÉN VICHADA – COLOMBIA

This study was conducted within the framework of the REDD+ Matavén Project.

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INTRODUCTION

Understanding biodiversity within the national territory is essential for creating conservation plans. Bird observation, both globally and nationally, has seen a recent surge. The renewed interest in leaving cities and visiting unmodified natural sites has led bird watchers to travel within and outside the country. Despite this, large parts of Colombia's territory still have significant knowledge gaps. This is particularly true for the Amazon and Orinoco regions of Colombia (Avendaño et al. 2017), where vast land areas remain unexplored in terms of their biotic diversity.

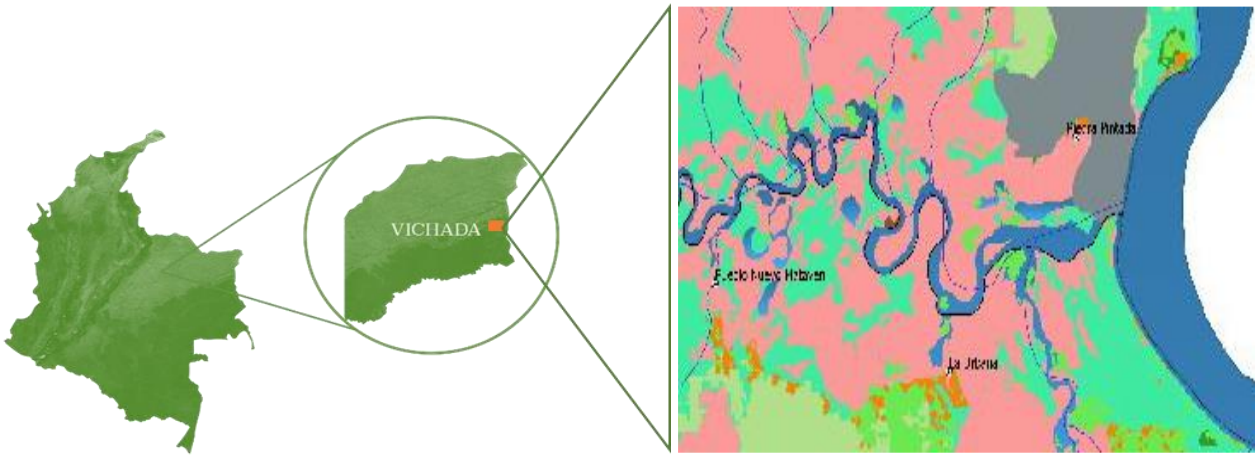
Biological studies are generally expensive and conducted within short time frames, as they require substantial organization and resources. Consequently, these studies are typically brief and lack ongoing monitoring to identify seasonal variations and long-term changes, which could reveal the effects of significant events such as biological invasions, natural fires, and climate change (Willis & Birks 2006). One way to address these gaps is through citizen science, a tool that allows community members to better understand their territory and its accompanying biota (Bonney 2021). Citizen science encourages people to explore and supports birdwatching tourism by attracting tourists interested in the local biodiversity (Forero & Rodríguez 2021).

The Matavén Forest is a vast area in eastern Colombia, adjacent to the Orinoco River and bordering Venezuela. It is a region rich in diversity from every perspective. Biologically, it is fascinating because it represents the transition between the two most important biomes of eastern Colombia: the Llanos and the Amazon rainforest. This site, although under-studied, has seen several initiatives aimed at filling these knowledge gaps (Villareal-Leal et al. 2009). For these reasons, the Matavén Forest is an ideal and intriguing location to begin understanding the region's birdlife. Unfortunately, the difficulty of access makes studying this part of the country costly, as is nature tourism.

This study presents an effort to gain more knowledge about the avifauna of the Matavén Forest and the department of Vichada (Colombia). We conducted a rapid inventory focusing on habitats near La Urbana community to recognize the bird species associated with open habitats and modified forests, which are of interest for conservation and nature tourism, specifically birdwatching. Additionally, we established a baseline of the birds in La Urbana, mapped an initial route, and provided digital evidence to enhance visibility and facilitate birdwatching plans.

The study area is located in the Resguardo Indígena Unificado de la Selva Matavén in the Vichada department (Colombia), south of the municipality of Cumaribo. Surveys were conducted in the lower part of the Caño Matavén and Caño Mono, where these two tributaries converge before flowing into the Orinoco River. The areas near the communities of La Urbana, Sarrapia, Piedra Pintada, and Pueblo Nuevo, all of Piaroa ethnicity, were included. The following image presents a segment of the selected area.

Image 1 *Study Area: Lower section of Caño Matavén and Caño Mono in Resguardo Selva Matavén*



METHODOLOGY

To compile the most comprehensive bird species list possible within a limited time and to characterize the bird community, we conducted sampling using a combination of complementary techniques (Villareal et al. 2004). The sampling was focused around the La Urbana community (Photo 1, a.), as there is an interest in identifying bird species that utilize the easily accessible habitats near the community, with the goal of promoting them as points of interest for tourism. We sampled three types of habitats: Secondary Forest (BS), Rocky Hills (CR), and Flooded Savannas (SI) (Photo 1, b, c, and d).

Photo 1 *Different sampled habitats: a. La Urbana community, b. Secondary Forest (BS), c. Rocky Hills (CR), d. Flooded Savannas (SI)*

a

b

	
c	d

In each habitat, we established as many counting points as possible, aimed at identifying all birds seen and heard within an approximate 50-meter radius over 25 minutes (Table 1). This approach helps to specifically record the species using the habitat (Ruiz-Gutiérrez 2020). At each point, we recorded the species and the number of individuals per species using 8X42 binoculars and, whenever possible, photographed them with a specialized professional camera (Photo 2). Data recording was done using the eBird application (Sullivan et al. 2009) for smartphones.

Photo 2 *Bird observation sampling at a counting point*

Sampling times covered the peak activity periods, which are from 06:00 to 10:00 and from 15:30 to 18:30. On days with good conditions, short nocturnal surveys were conducted to record nocturnal bird species, which tend to be under-sampled.

Table 1 *Sampled locations*

Location	Latitude	Longitude	Habitat Type
Caño Matavén	-67,8943783	4,5161775	Flooded Savanna
Matavén - 01	-67,9011391	4,5072708	Flooded Savanna
Matavén - 02	-67,9030558	4,5069025	Flooded Savanna
Matavén - 03	-67,904235	4,5053208	Secondary Forest
Matavén - 04	-67,904915	4,5034347	Secondary Forest
Matavén - 05	-67,9044642	4,5010617	Secondary Forest
Matavén - 06	-67,90447	4,4991283	Secondary Forest
Matavén - 07	-67,9140383	4,501295	Secondary Forest
Matavén - 08	-67,9161467	4,501215	Secondary Forest
Matavén - 09	-67,9101778	4,504656	Secondary Forest
Matavén - 10	-67,9092758	4,5027958	Secondary Forest
Matavén - 11	-67,9126358	4,5027192	Secondary Forest
Matavén - 12	-67,8949067	4,5035433	Secondary Forest
Matavén - 13	-67,89631	4,5051617	Secondary Forest
Matavén - 14	-67,9022608	4,5054033	Secondary Forest
Matavén - 15	-67,90489	4,5549442	Flooded Savanna
Matavén - 16	-67,904105	4,5572875	Secondary Forest
Matavén - 17	-67,9121242	4,50483	Secondary Forest
Matavén - 18	-67,9071792	4,5070892	Flooded Savanna
Matavén - 19	-67,9103542	4,50673	Flooded Savanna
Matavén - 20	-67,89425	4,5081825	Flooded Savanna
Matavén - 21	-67,897092	4,5103862	Flooded Savanna
Matavén - 22	-67,8950317	4,5105892	Flooded Savanna
Matavén - 23	-67,89849	4,5174883	Secondary Forest
Matavén - 24	-67,8674025	4,5391417	Rocky Hills
Matavén - 25	-67,8679067	4,5398392	Rocky Hills
Matavén - 26	-67,87128	4,5403633	Flooded Savanna
Matavén - 27	-67,9166708	4,5404558	Flooded Savanna
Matavén - 28	-67,866585	4,5411708	Rocky Hills
Matavén - 29	-67,8715467	4,5453033	Flooded Savanna
Matavén - 30	-67,87145	4,5473767	Rocky Hills
Matavén - 31	-67,8715617	4,5488533	Rocky Hills
Matavén - 32	-67,8714892	4,5495567	Rocky Hills
Matavén - 33	-67,8721642	4,5510633	Rocky Hills
Matavén - 34	-67,8732675	4,5545158	Rocky Hills
Matavén - 35	-67,8737658	4,5571783	Rocky Hills
Matavén - 36	-67,9037908	4,5593417	Secondary Forest
Matavén - Embarcaderos	-67,8998758	4,5090583	Flooded Savanna
Matavén - La Urbana	-67,8971547	4,5080352	Flooded Savanna
Matavén A hotel	-67,899145	4,5080908	Flooded Savanna
Sendero Hotel - Matavén	-67,9029883	4,5054717	Secondary Forest

Additionally, six mist nets measuring 12 meters in length by 2.4 meters in height, with a mesh size of 30 mm, were installed (Photo 3 a and b). Each net was kept open for 6 hours (06:00 – 12:00) with checks every 30 minutes. The nets were primarily set up in the Secondary Forest habitat, where the presence of secretive and difficult-to-detect species is expected. Captured birds were disentangled from the nets and placed in cloth bags to ensure their protection and care until they could be examined (Photo 3 c and d).

Captured birds were closely inspected to take morphometric measurements, weight, reproductive status, sex, age, and any particular condition of plumage, molt, and a blood sample, along with location data (habitat, coordinates, altitude, date, and time).

Photo 3 *Mist net sampling: a. Setting up the nets. b. Deployed mist net. c. Bird caught in the mist net. d. Bird being handled after being captured with the mist nets.*

a

b

c

d

DATA ANALYSIS

All the collected information was used to describe the bird community and conduct various richness and diversity analyses for the study area. Species identification was carried out using specialized Colombian bird books (Hilty & Brown, 2021) and digital tools such as the Merlin app. All statistical analyses were performed using R, a free software environment for statistical computing. The packages used included vegan (Oksanen et al., 2022), BiodiversityR (Kindt, 2005), and fossil (Vavrek, 2011). Alpha diversity was calculated for each habitat using the Shannon index (Magurran, 2004). A rarefaction curve was generated to compare observed richness among different habitats, and a beta diversity analysis (Magurran, 2004) was conducted to compare between habitats and better understand the differences in species composition and abundance.

RESULTS AND DISCUSSION

A total of 983 bird records were made, corresponding to 140 bird species (Annex 1), distributed across 42 families and 20 orders. The majority of these records were made during observations at counting points. During mist netting, 14 individuals belonging to 7 species were captured, with Phaethornis ruber (Photo 4) being the only species recorded through mist netting and not at the counting points.

Photo 4 *Reddish Hermit (Phaethornis ruber) captured in mist nets*

Of the 140 bird species recorded, one species has a geographical restriction. The Orinoco Piculet *(Picumnus pumilus*) (Photo 5) is a near-endemic species whose distribution is primarily in eastern Colombia, shared with Venezuela and Brazil. No endemic species were recorded. Additionally, seven boreal migratory species were documented (Annex 1).

Photo 5 *Orinoco Piculet (Picumnus pumilus) a near-endemic species to Colombia*

Three species were recorded that fall into a category of the International Union for Conservation of Nature's Red List (IUCN 2022). Two species, the Blackpoll Warbler (*Setophaga striata*) (Photo 6) and the Great Tinamou (*Tinamus major*), are listed as Near Threatened (NT), meaning they are likely to qualify for a threatened category in the near future if the threats continue to expand. One species, the Channel-billed Toucan (*Ramphastos vitellinus*), is listed as Vulnerable (VU), indicating that the evidence suggests a higher risk of extinction. No species were recorded in other threat categories.

Photo 6 *Blackpoll Warbler (Setophaga striata) a migratory species listed as Near Threatened (NT) by the IUCN*

According to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 2021), 26 species were recorded (Annex 1) that are listed in one of the appendices, indicating pressure from illegal trade. Of these, 25 species are listed in Appendix II of CITES (Photo 7). These species are not necessarily threatened with extinction but may become so if their trade is not strictly regulated. The King Vulture (*Sarcoramphus papa)* is listed in Appendix III, which includes species at the request of a country needing the cooperation of other countries to prevent unsustainable or illegal exploitation. Species in this appendix can only be traded internationally under permits (CITES 2021).

Photo 7 *Parrot species (Psittacidae) one of the most illegally traded groups: a. Black-headed Parrot (Pionites melanocephalus) b. Orange-winged Amazon (Amazona amazonica)*

a

b

Three types of habitats present in the study area were sampled: Rocky Hills (CR), Secondary Forest (BS), and Flooded Savanna (SI) (Table 2). The Secondary Forest had the highest species richness, followed by the Flooded Savanna and the Rocky Hills. The CR habitat had the fewest species, likely due to the relatively limited sampling in this habitat compared to the other two.

In the BS habitat, 17 counting points were established; in CR, 9 points; and in SI, 15 points. This difference in representativity is related to the dominance of the habitats in the study area, which was primarily focused on the La Urbana sector, where the CR habitat is not predominant.

According to the Chao2 richness estimator, 177 bird species are expected in the study area, of which we recorded 140 species, representing about 80%.

The habitats sampled had representativity between 31% and 73%. The most well-represented landscape was the Flooded Savanna, with about 73% of the estimated species. In contrast, the Rocky Hills had a low representativity value, related to the lesser presence of this habitat in the study area and its lower accessibility, reflected in the fewer sampling units.

Table 2 *Representativity of sampling in the habitats sampled*

Habitat	Number of counting points	# observed species	# estimated species (Chao2)	Representativity (%)
Total	70	140	177	79,0960452
Flooded Savanna (SI)	31	86	118	72,88135593
Secondary Forest (BS)	9	92	154	59,74025974
Rocky Hills (CR)	30	32	101	31,68316832

In the study area, the Humboldt Institute conducted a more extensive sampling effort in 2009 (Villareal et al. 2009). That study recorded 3,030 individuals belonging to 244 species (Annex 2). The number of species we recorded represents about 58% of the species recorded by the Humboldt Institute team. However, in this project, we documented 36 species that were not recorded in the Humboldt Institute's lists. Notable among the species we added are some common species like *Amazona ochrocephala* and *Anthracothorax nigricollis*, some species that may go unnoticed like *Chaetura brachyura* and *Chordeiles acutipennis*, and species of interest due to the threats they face and their potential for birdwatching, such as *Iodopleura isabellae, Rupicola rupicola,* and *Trogon ramonianus*.

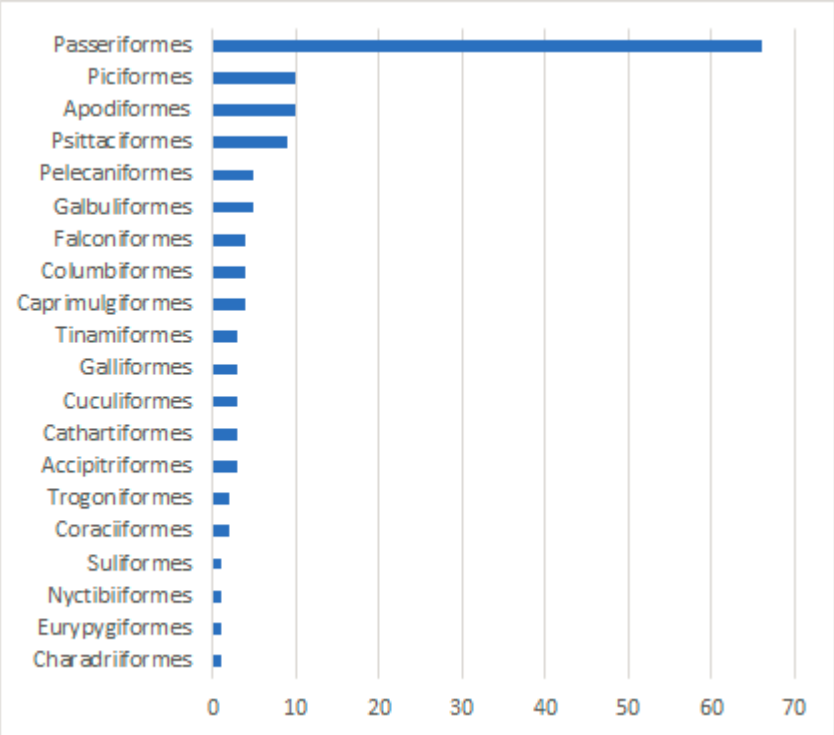
It is important to consider that the study area and sampling effort were smaller in this study compared to the Humboldt Institute's study, which is why a lower number of species is expected, as well as the absence of several species that may be common to the area, such as A*ttila spadiceus, Chloroceryle amazona, Chrysomus icterocephalus, Egretta thula, Elaenia chiriquensis, Tyrannus savana,* and *Vanellus chilensis.* This is also related to the importance of conducting surveys at different times of the year, as bird communities can change in response to the annual environmental variations in the area.

On the other hand, when compared with information from other sources, such as the open lists from eBird (Annex 2), eBird is an open platform where anyone can upload observed birds in a region. By collecting information from nearby sites on eBird within a 30 km radius of the study area in the Matavén Forest, it is observed that there are potentially 359 bird species. We recorded 140 species, which account for about 43%, but it is noteworthy that our records include 58 species (Photo 8) that have not been recorded in those nearby surveys. For the Vichada department, 626 bird species have been recorded. Our records represent about 22% of the possible species for the Vichada department. However, it is important to clarify that this number is only an estimate, as a standardized inventory for the department is lacking, and the actual number of species is likely to be higher.

Photo 8 *Spotted Puffbird (Bucco tamatia) and White-fronted Nunbird (Monasa morphoeus) species recorded in this project that are not listed in nearby areas*

Overall, the bird community in the study area is dominated by passerines (order *Passeriformes*) with 60 species (Figure 1). They are followed, with much lower richness, by woodpeckers (order *Picidae*) and hummingbirds (order *Apodiformes*) with 10 species each, and parrots (order *Psittaciformes*) with 9 species. The remaining orders presented between 1 and 5 species.

Figure 1 *Bird orders with the highest number of species in the study area*



At the family level, species belonging to 42 families were recorded in the study area (Figure 2). The family with the highest richness is the flycatchers (*Tyrannidae*) with 16 species. They are followed by three families, each represented by 9 species (Photo 9): the hummingbirds (*Trochilidae*), the tanagers (*Thraupidae*), and the parrots (*Psittacidae*). Twenty-two families have between 6 and 2 representatives, and 16 families are represented by a single species.

Figure 2 *Bird families with the highest number of species in the study area*

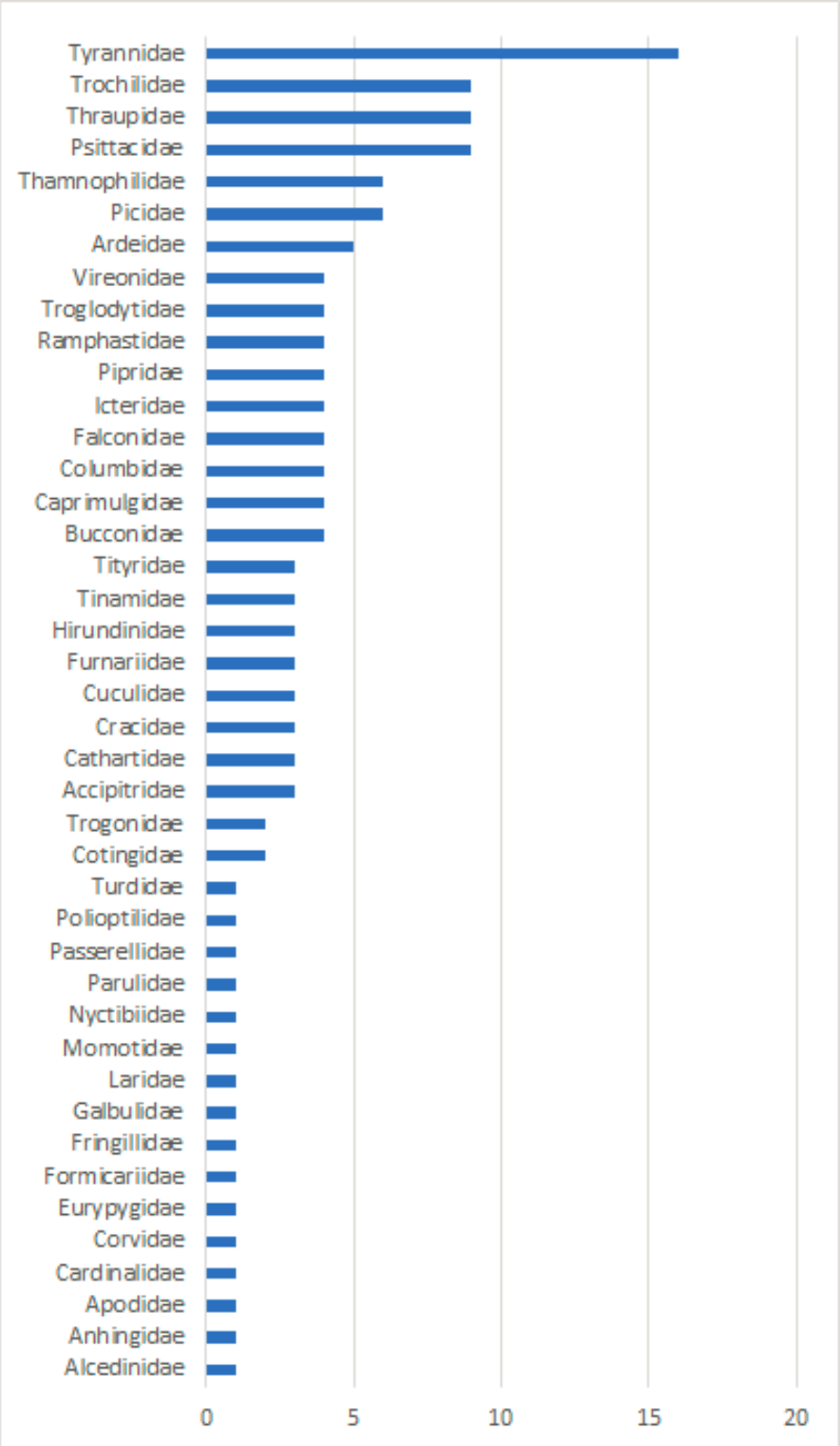


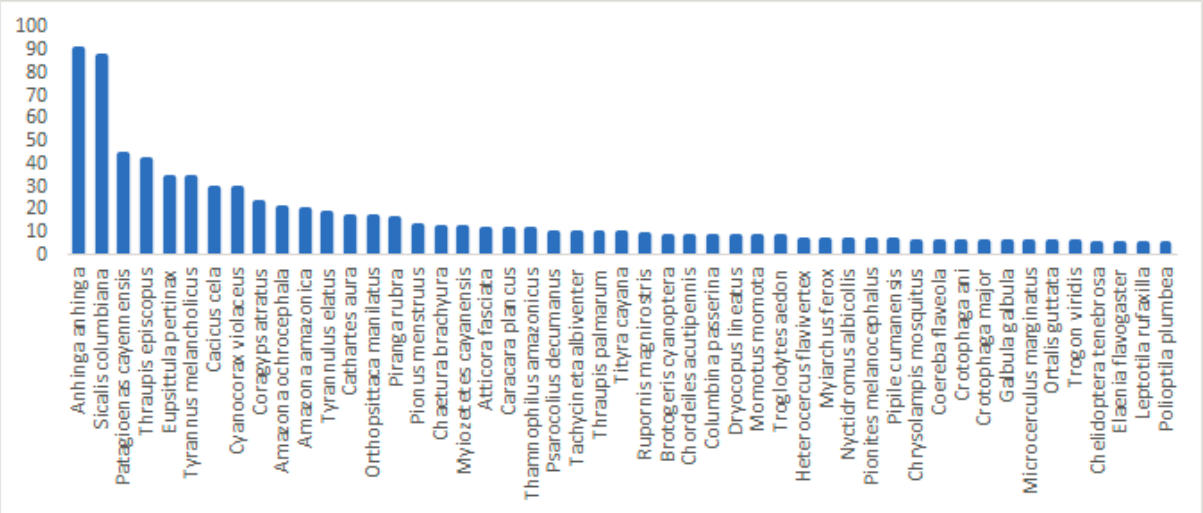
Photo 9 *Rusty-margined Flycatcher (Myiozetetes cayannensis) and Green-tailed Goldenthroat (Polytmus theresiae) representative species of the families with the highest number of species in the study area*

Of the 140 species recorded in the area, several showed high abundance values (Photo 10). Some species that tend to be in groups were the most frequently recorded, such as the *Anhinga anhinga*, a species associated with bodies of water, which in the study area is observed in flocks consisting of many individuals, usually when they are moving between bodies of water. The second most abundant species is *Sicalis columbiana*, a species that utilizes the open spaces of the Flooded Savanna (SI) habitat.

Photo 10 *Tropical Kingbird (Tyrannus melancholicus) and Yellow-rumped Cacique (Cacicus cela) commonly found bird species in the study area*

In contrast, the *Patagioenas cayennensis*, the third most abundant species in the area, is primarily found alone or in pairs but very frequently and was recorded in all habitats. Additionally, its vocalizations are loud and constant. Other abundant species in the study area include the *Thraupis episcopus, Eupsittula pertinax, Tyrannus melancholicus, Cacicus cela, Cyanocorax violaceus,* and *Coragyps atratus*. These species are generally very common in the Colombian lowlands and tend to be associated with human settlements (Figure 3). Considering that most of the sampling was done near the La Urbana settlement, it is common for many of these species to be more abundant and successful than others.

Figure 3 *Most common bird species by number of records in the study area*



In contrast, most bird species were recorded only a few times. During this survey, 91 of the 140 species had abundances ranging from 2 to 21 individuals, and 39 species were recorded only once, with an abundance of 1 individual (not shown in the graph). This is common and implies that the bird community exhibits competition, with only a few dominant species (Photo 11).

Photo 11 *Crimson-crested Woodpecker (Campephilus melanoleucos) and Ivory-billed Aracari (Pteroglossus azara) bird species recorded as single individuals in the study area*

Alpha diversity is a measure that allows for the comparison of different sampled sites. In this case, we compared the three sampled habitats (BS, CR, and SI) with each other and with the total records for the study area. This helps to understand which habitats had higher diversity and how this compares to the total diversity of the study area.

The Shannon index measures diversity based on site richness. According to this, the Secondary Forest has a relatively high richness, close to the total richness of the study area. It is followed by the Flooded Savannas with a very similar value. The Rocky Hills presented the lowest value, which is not very different from the rest, especially the total (Table 3).

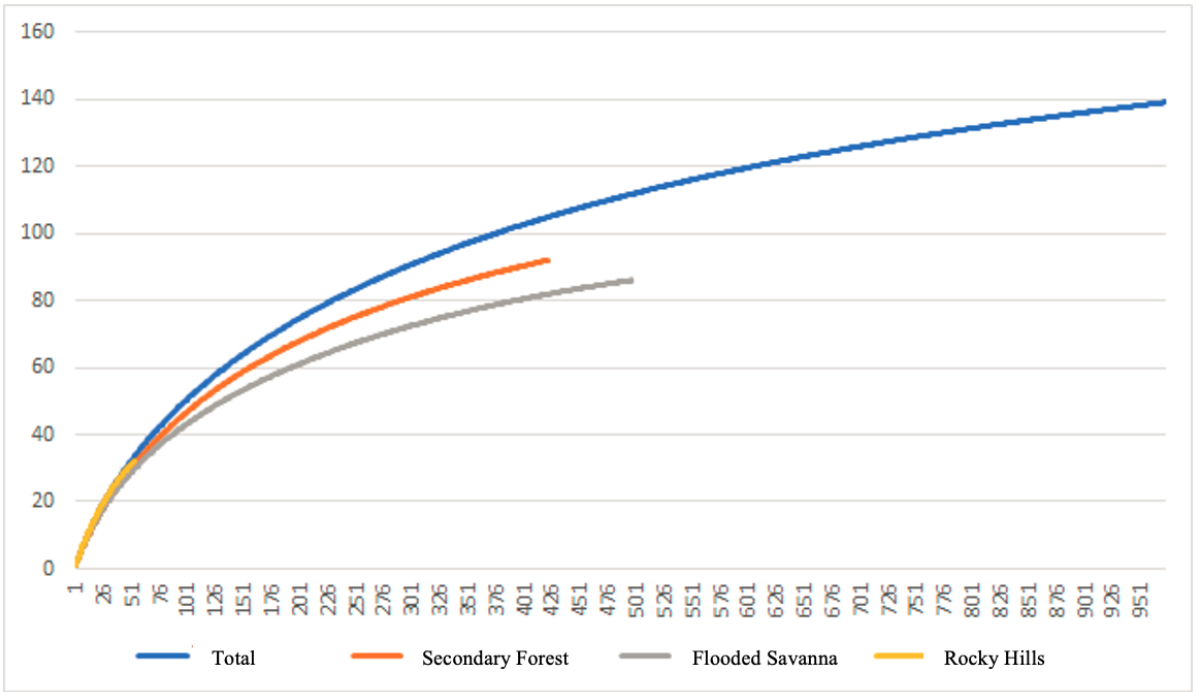
Table 3 *Shannon diversity index for sampled habitats*

Habitat	Richness	Individuals	Shannon Index (H)	Evenness
Secondary Forest (BS)	92	422	3.857	0.5142
Flooded Savanna (SI)	32	53	3.612	1.157
Rocky Hills (CR)	86	497	3.803	0.5214
Total	140	972	4.212	0.4855

Evenness refers to the distribution of abundance among species in a community. Evenness tends to increase when all species in a sample have the same abundance. For the entire sampling area, evenness has a relatively low value, indicating that most species have different abundances. This is due to the differences in abundance among species. The Rocky Hills habitat presents the highest evenness values, meaning that species in this habitat tend to have similar abundances. This effect may occur because some species are not present in this type of habitat, or it may be related to the relatively small sampling effort conducted in this habitat.

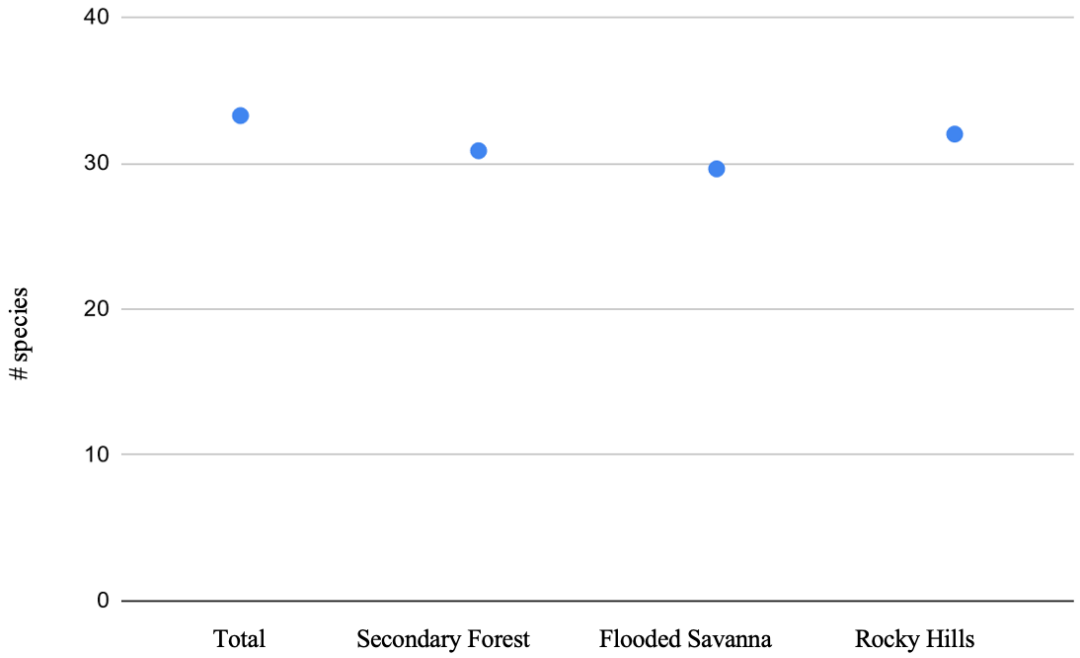
The study area focused primarily on the habitats around the La Urbana settlement, indicating that a large portion of the habitats are modified. This leads to species that utilize transformed habitats being more abundant. The complexity of the vegetation allows a greater number of species to use a habitat. For this reason, complex forests tend to support a greater number of species, while open and disturbed habitats support fewer species. Usually, well-conserved forests, despite supporting a larger number of species, tend to be under-sampled because detecting species in complex forests is more difficult, leading to the absence of expected species in the records. When comparing the three sampled habitats along with the total at the same number of individuals (Figure 4), it is observed that the sampling units are not similar; most of the effort was concentrated in the habitats closest to the La Urbana settlement.

Figure 4 *Rarefaction curves for the three sampled habitats and the total area*



A rarefaction curve is used to compare diversity with the same number of individuals, in this case, 32, which were the individuals recorded in the Rocky Hills (CR) habitat. At this number of individuals, it is observed that the three habitats have very similar diversity values, even when compared to the total area of the study (Figure 05).

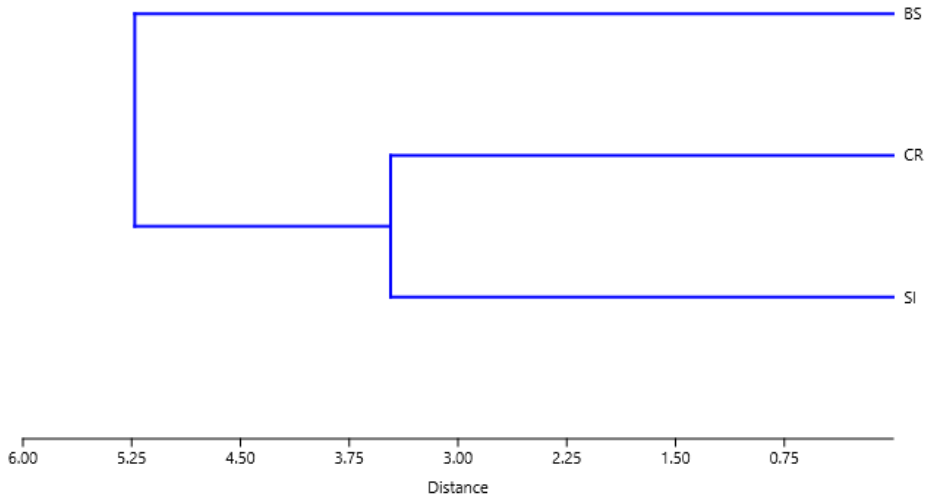
Figure 5 *Comparison of Observed Richness Values in the Three Habitats and the Total Area*



This indicates that all habitats have a similar potential to harbor species, although the community composition will likely be different, ultimately leading to the formation of the landscape community.

The structure and composition of the bird community in each habitat are different, as each habitat offers different resources that can be exploited by birds. The Flooded Savanna is characterized by open habitats with a lot of herbaceous vegetation and little to no undergrowth. This habitat is home to species typical of open areas and the Colombian-Venezuelan Llanos, as well as many species that tend to prefer the banks of streams and rivers, such as the Caño Matavén and the Orinoco River. The Rocky Hills are characterized by tall vegetation interspersed with exposed rock. This vegetation tends to lack significant undergrowth, which may slightly reduce the presence of some bird species. The Secondary Forest habitat is characterized by large trees along with smaller trees and shrubs and many other small plants that maintain an undergrowth. These forests have vegetation in various states of regeneration, allowing the presence of bird species that prefer disturbed habitats, while many forest birds disappear due to the lack of continuous mature vegetation.

Figure 6 *Similarity graph of the sampled habitats according to the Jaccard similarity index*



Considering the above, it can be observed that the bird community in the three studied habitats within the study area exhibits different compositions (Figure 6). The most similar habitats are the Rocky Hills (CR) and the Flooded Savanna (SI), both of which tend to support generalist and open-habitat species (Photo 12 a, b, c, and d). For example, in the SI habitat, many parrots (*Psittacidae*), swallows (*Hirundinidae*), swifts (*Apodidae),* and raptors (*Falconidae*) were recorded, which are common species that tend to be detected in open areas. On the other hand, in the Secondary Forest (BS) habitat, several species that prefer more closed forests and are not observed in open areas were recorded. Some examples include the Spotted Puffbird (*Bucco tamatia*), a not-so-common puffbird, the Rufous-capped Antthrush (*Formicarius colma*), an uncommon antthrush of the lowlands, the White-plumed Antbird (*Gymnophitys leucaspis*), an obligate ant-following antbird found in well-preserved forests, and the Brown Nunlet (*Nonnula brunnea*), a rare and little-known nunlet in the Amazonian lowlands (Photo 12 e and f). Species like these create a differentiation in the bird community composition, leading to a prominent separation in the dendrogram. This variation among the different habitats allows for the presence of the 140 species recorded in the study area.

Photo 12 *Some bird species recorded in the study area: a) Green-tailed Jacamar (Galbula galbula). b) Ruby-topaz Hummingbird (Chrysolampis mosquitus). c) Rufous-collared Sparrow (Zonotrichia capensis). d) Orange-fronted Yellow-Finch (Sicalis columbiana). e) White-plumed Antbird (Gymnopithys leucaspis). f) Amazonian Antshrike (Thamnophilus amazonicus)*

a

b

c

d

e

f

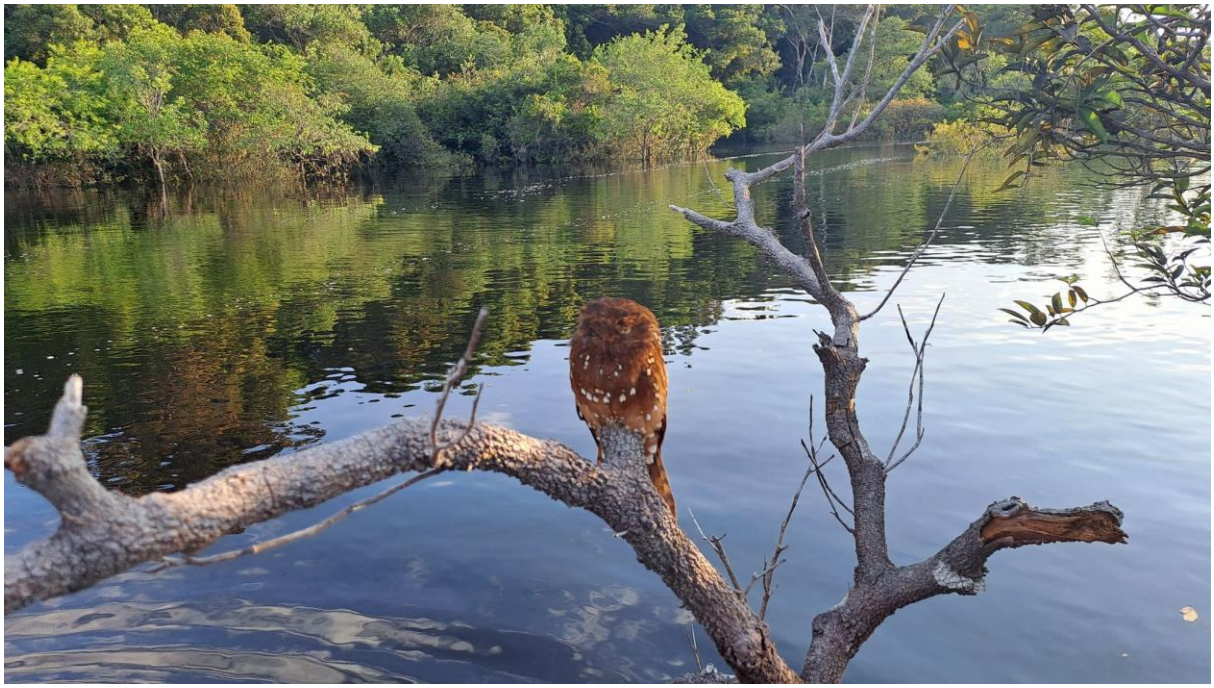
CONCLUSIONS

The surveys for this project were conducted during the dry season. During the fieldwork, 140 species were recorded. This number is expected to increase with extended sampling in other nearby sites and different habitats present in the area. Similarly, the species list is expected to grow with surveys conducted in other seasons of the year, as various climatic seasons prevail. It is highly likely that several boreal and austral migratory species will be recorded during their journeys across the continent, especially species associated with water bodies that take advantage of the beaches and small stagnant water bodies formed when the Caño Matavén recedes at the end of the dry season.

The Matavén Forest is characterized by having many environments, some natural and others in various states of regeneration, derived from the normal processes of the communities. Monitoring the avifauna across several seasons can significantly contribute to understanding how the composition and richness of the bird community vary throughout the year. Understanding this variation is important as it allows for insights into species movements, which is crucial for creating long-term monitoring and conservation plans, as well as birdwatching tourism plans that consider the ecology and conservation of species. This is particularly important for some sensitive and interesting species, such as the Guianan Cock-of-the-rock (*Rupicola rupicola*) and certain antbirds and forest-associated birds.

Many interesting species are still expected to be recorded in Matavén, such as the Rufous Potoo (*Phyllaemulor bracteatus*) (Photo 13), which was recorded by a member of La Urbana community. The recording was made with a cell phone very early in the morning during a fishing trip. This species is a nocturnal insectivorous bird from the Potoo family (*Nyctibiidae*). P. *bracteatus* has excellent camouflage, making it easy to overlook and is considered rare due to the limited knowledge of its ecology despite its large distribution. This recording represents a new locality for this species, with the nearest previous records being from the city of Mitú (Vaupés), approximately 600 km away.

Photo 13 *Rufous Potoo (Phyllaemulor bracteatus) recorded by a member of La Urbana community*



Participatory science is a tool that enhances the sense of belonging to native nature by connecting the community with nature and becoming an efficient way to collect data. Additionally, participatory science plans significantly increase the information associated with a place and allow for data collection on rare and secretive species, which supports local tourism plans. When local fauna and flora are well-known, community members can become specialized guides, enhancing nature tourism plans. The Matavén Forest is an ideal site for nature tourism, specifically birdwatching (avitourism), as it has numerous bird species and community members with ancestral knowledge who are interested in learning more. Providing the necessary tools for participatory science will likely attract tourists, as platforms like eBird, iNaturalist, and GBIF, used for data collection, are also utilized by people interested in exploring native fauna and flora.

The complete list derived from this project is available on the eBird citizen science platform (https://ebird.org/tripreport/89019) in an organized manner with multimedia. This page allows anyone to review the species list and the studied sites in an accessible and open manner. This is particularly interesting as it enables anyone to easily find and review the information. This platform is advantageous as it is used by many tourists looking for birdwatching sites, organizing their itineraries, and contacting people who make observations and offer guided tours. Reinforcing records on this platform would not only generate important citizen science data but also help attract tourists and people interested in exploring the area.

This sampling effort in the Matavén Forest aims to fill information gaps in little-known parts of Colombia, which is particularly important in remote and vast areas like the Llanos and the Colombian Amazon. In such places, the composition of bird communities can change with geographical barriers (such as rivers), environmental heterogeneity (Maximiano et al. 2020), and habitat modification (Cintra et al. 2013). Therefore, it is essential to expand the sampling coverage in the Matavén Forest, as even short geographical distances can lead to significant variations in bird community composition. Areas further west of La Urbana settlement and upstream likely present a different avifauna due to changes in vegetation. The influence of the flooded savannas diminishes as one moves away from the Orinoco River, which may lead to changes in bird composition. Similarly, the Orinoco River is the main transportation route, and habitat transformation is evident near it (and other rivers and streams). Thus, sampling in sites with different characteristics will likely contribute to filling information gaps in both the Matavén Forest and this part of Colombia.

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ANNEX 1
LIST OF BIRD SPECIES RECORDED IN THE MATAVÉN FOREST – LA URBANA

CE: Near-endemic **LC**: Least Concern **NT**: Near Threatened **VU**: Vulnerable **NE**: Not Evaluated **MB**: Boreal Migrant **R-Mb**: Resident and Boreal Migrant

Order	Family	Species	Common Name (Spanish)	Common Name (Local Ethnic Language)	Endemism	IUCN Status	CITES Status	Migratory Status
Tinamiformes	Tinamidae	*Tinamus major*	Tinamú Grande	-	-	NT	-	-
Tinamiformes	Tinamidae	*Crypturellus cinereus*	Tinamú Sombrío	-	-	LC	-	-
Tinamiformes	Tinamidae	*Crypturellus soui*	Tinamú Chico	-	-	LC	-	-
Galliformes	Cracidae	*Penelope jacquacu*	Pava Amazónica	-	-	LC	-	-
Galliformes	Cracidae	*Pipile cumanensis*	Pava Goliazul	-	-	LC	-	-
Galliformes	Cracidae	*Ortalis guttata*	Chachalaca Moteada	-	-	LC	-	-
Columbiformes	Columbidae	*Patagioenas cayennensis*	Paloma Colorada	-	-	LC	-	-
Columbiformes	Columbidae	*Leptotila verreauxi*	Paloma Rabiblanca	-	-	LC	-	-
Columbiformes	Columbidae	*Leptotila rufaxilla*	Paloma Montaraz Frentiblanca	-	-	LC	-	-
Columbiformes	Columbidae	*Columbina passerina*	Tortolita Común	-	-	LC	-	-
Cuculiformes	Cuculidae	*Crotophaga major*	Garrapatero Mayor	-	-	LC	-	-
Cuculiformes	Cuculidae	*Crotophaga ani*	Garrapatero Piquiliso	-	-	LC	-	-
Cuculiformes	Cuculidae	*Piaya cayana*	Cuco Ardilla	-	-	LC	-	-
Nyctibiiformes	Nyctibiidae	*Nyctibius griseus*	Nictibio Común	-	-	LC	-	-
Caprimulgiformes	Caprimulgidae	*Chordeiles acutipennis*	Añapero Menor	-	-	LC	-	R-Mb
Caprimulgiformes	Caprimulgidae	*Nyctipolus nigrescens*	Chotacabras Negruzco	-	-	LC	-	-
Caprimulgiformes	Caprimulgidae	*Nyctidromus albicollis*	Tapacamino Común	-	-	LC	-	-
Caprimulgiformes	Caprimulgidae	*Hydropsalis cayennensis*	Tapacamino Coliblanco	-	-	LC	-	-
Apodiformes	Apodidae	*Chaetura brachyura*	Vencejo Colicorto	-	-	LC	-	-
Apodiformes	Trochilidae	*Glaucis hirsutus*	Ermitaño Pechicanelo	-	-	LC	II	-
Apodiformes	Trochilidae	*Phaethornis ruber*	Ermitaño Rojizo	-	-	LC	II	-

Order	Family	Species	Common Name (Spanish)	Common Name (Local Ethnic Language)	Endemism	IUCN Status	CITES Status	Migratory Status
Apodiformes	Trochilidae	*Polytmus theresiae*	Colibrí de Teresa	-	-	LC	II	-
Apodiformes	Trochilidae	*Chrysolampis mosquitus*	Topacio Rubí	-	-	LC	II	-
Apodiformes	Trochilidae	*Anthracothorax nigricollis*	Mango Gorguinegro	-	-	LC	II	-
Apodiformes	Trochilidae	*Calliphlox amethystina*	Colibrí Amatista	-	-	LC	II	-
Apodiformes	Trochilidae	*Chrysuronia versicolor*	Amazilia Versicolor	-	-	LC	II	-
Apodiformes	Trochilidae	*Hylocharis sapphirina*	Amazilia Gorjirroja	-	-	LC	II	-
Apodiformes	Trochilidae	*Chlorestes cyanus*	Zafiro Gorjiblanco	-	-	LC	II	-
Charadriiformes	Laridae	*Phaetusa simplex*	Gaviotín Piquigrande	-	-	LC	-	-
Eurypygiformes	Eurypygidae	*Eurypyga helias*	Garza del Sol	Tigana o Tirana	-	LC	-	-
Suliformes	Anhingidae	*Anhinga anhinga*	Aninga	-	-	LC	-	-
Pelecaniformes	Ardeidae	*Nycticorax nycticorax*	Garza Nocturna Coroninegra	-	-	LC	-	-
Pelecaniformes	Ardeidae	*Butorides striata*	Garza Listada	-	-	LC	-	-
Pelecaniformes	Ardeidae	*Ardea cocoi*	Garza Cocoi	-	-	LC	-	-
Pelecaniformes	Ardeidae	*Ardea alba*	Garceta Grande	-	-	LC	-	-
Pelecaniformes	Ardeidae	*Egretta caerulea*	Garza Azul Chica	-	-	LC	-	R-Mb
Cathartiformes	Cathartidae	*Sarcoramphus papa*	Gallinazo Rey	-	-	LC	III	-
Cathartiformes	Cathartidae	*Coragyps atratus*	Gallinazo Negro	-	-	LC	-	-
Cathartiformes	Cathartidae	*Cathartes aura*	Gallinazo Cabecirrojo	-	-	LC	-	R-Mb
Accipitriformes	Accipitridae	*Gampsonyx swainsonii*	Elanio Chico	-	-	LC	II	-
Accipitriformes	Accipitridae	*Buteogallus urubitinga*	Gavilán-Negro Mayor	-	-	LC	II	-
Accipitriformes	Accipitridae	*Rupornis magnirostris*	Gavilán Caminero	-	-	LC	-	-
Trogoniformes	Trogonidae	*Trogon viridis*	Trogón Dorsiverde	-	-	LC	-	-
Trogoniformes	Trogonidae	*Trogon ramonianus*	Trogón Violáceo (ramonianus)	-	-	-	-	-
Coraciiformes	Momotidae	*Momotus momota*	Momoto Amazónico	-	-	LC	-	-
Coraciiformes	Alcedinidae	*Chloroceryle americana*	Martín Pescador Verde	-	-	LC	-	-
Galbuliformes	Galbulidae	*Galbula galbula*	Jacamará Coliverde	-	-	LC	-	-

Order	Family	Species	Common Name (Spanish)	Common Name (Local Ethnic Language)	Endemism	IUCN Status	CITES Status	Migratory Status
Galbuliformes	Bucconidae	*Bucco tamatia*	Buco Moteado	-	-	-	-	-
Galbuliformes	Bucconidae	*Nonnula brunnea*	Monjilla Canela	-	-	LC	-	-
Galbuliformes	Bucconidae	*Monasa morphoeus*	Monja Frentiblanca	-	-	LC	-	-
Galbuliformes	Bucconidae	*Chelidoptera tenebrosa*	Buco Golondrina	-	-	LC	-	-
Piciformes	Ramphastidae	*Ramphastos tucanus*	Tucán Pechiblanco	-	-	-	II	-
Piciformes	Ramphastidae	*Ramphastos vitellinus*	Tucán Vitelino	-	-	VU	II	-
Piciformes	Ramphastidae	*Pteroglossus pluricinctus*	Arasarí Fajado	-	-	LC	-	-
Piciformes	Ramphastidae	*Pteroglossus azara*	Arasarí de Azara	-	-	LC	-	-
Piciformes	Picidae	*Picumnus pumilus*	Carpinterito del Orinoco	-	CE	LC	-	-
Piciformes	Picidae	*Melanerpes cruentatus*	Carpintero Azulado	-	-	LC	-	-
Piciformes	Picidae	*Campephilus melanoleucos*	Carpintero Crestirrojo	-	-	LC	-	-
Piciformes	Picidae	*Dryocopus lineatus*	Carpintero Lineado	-	-	NE	-	-
Piciformes	Picidae	*Celeus grammicus*	Carpintero Rojizo	-	-	-	-	-
Piciformes	Picidae	*Celeus elegans*	Carpintero Elegante	-	-	LC	-	-
Falconiformes	Falconidae	*Herpetotheres cachinnans*	Halcón Reidor	-	-	LC	II	-
Falconiformes	Falconidae	*Caracara plancus*	Caracara Crestada	Carraco	-	-	-	-
Falconiformes	Falconidae	*Daptrius ater*	Caracara Negro	-	-	LC	II	-
Falconiformes	Falconidae	*Daptrius chimachima*	Caracara Cabeciamarilla	-	-	-	-	-
Psittaciformes	Psittacidae	*Brotogeris cyanoptera*	Catita Aliazul	-	-	LC	II	-
Psittaciformes	Psittacidae	*Pionus menstruus*	Loro Cabeciazul	-	-	LC	II	-
Psittaciformes	Psittacidae	*Amazona ochrocephala*	Loro Coroniamarillo	-	-	LC	II	-
Psittaciformes	Psittacidae	*Amazona amazonica*	Amazona Alinaranja	-	-	LC	II	-
Psittaciformes	Psittacidae	*Pionites melanocephalus*	Lorito Chirlecrés	Guajibito	-	LC	II	-
Psittaciformes	Psittacidae	*Eupsittula pertinax*	Perico Carisucio	Kenem (Pieroa)	-	LC	II	-
Psittaciformes	Psittacidae	*Orthopsittaca manilatus*	Guacamayo Ventrirrojo	-	-	LC	II	-
Psittaciformes	Psittacidae	*Ara macao*	Guacamaya Roja	Jabó (Pieroa)	-	LC	II	-

Order	Family	Species	Common Name (Spanish)	Common Name (Local Ethnic Language)	Endemism	IUCN Status	CITES Status	Migratory Status
Psittaciformes	Psittacidae	*Ara chloropterus*	Guacamaya Roja y Verde	-	-	LC	II	-
Passeriformes	Thamnophilidae	*Sakesphorus canadensis*	Batará Crestinegro	-	-	LC	-	-
Passeriformes	Thamnophilidae	*Thamnophilus amazonicus*	Batará Amazónico	-	-	LC	-	-
Passeriformes	Thamnophilidae	*Myrmotherula multostriata*	Hormiguerito Amazónico	-	-	-	-	-
Passeriformes	Thamnophilidae	*Myrmotherula axillaris*	Hormiguerito Flanquiblanco	-	-	LC	-	-
Passeriformes	Thamnophilidae	*Formicivora grisea*	Hormiguerito Pechinegro	-	-	LC	-	-
Passeriformes	Thamnophilidae	*Gymnopithys leucaspis*	Hormiguero Cachetiblanco	-	-	LC	-	-
Passeriformes	Formicariidae	*Formicarius colma*	Formicario Capirrojo	-	-	LC	-	-
Passeriformes	Furnariidae	*Nasica longirostris*	Trepatroncos Piquilargo	-	-	LC	-	-
Passeriformes	Furnariidae	*Xiphorhynchus guttatus*	Trepatroncos Pegón	-	-	LC	-	-
Passeriformes	Furnariidae	*Dendroplex picus*	Trepatroncos Piquirrecto	-	-	LC	-	-
Passeriformes	Tyrannidae	*Tyrannulus elatus*	Tiranolete Coroniamarillo	-	-	LC	-	-
Passeriformes	Tyrannidae	*Elaenia flavogaster*	Elenia Penachuda	-	-	LC	-	-
Passeriformes	Tyrannidae	*Mionectes oleagineus*	Mosquerito Ventriocráceo	-	-	LC	-	-
Passeriformes	Tyrannidae	*Lophotriccus galeatus*	Cimerillo de Casquete	-	-	LC	-	-
Passeriformes	Tyrannidae	*Todirostrum cinereum*	Espatulilla Común	-	-	LC	-	-
Passeriformes	Tyrannidae	*Knipolegus poecilocercus*	Viudita Amazónica	-	-	LC	-	-
Passeriformes	Tyrannidae	*Myiozetetes cayanensis*	Mosquero Alicastaño	-	-	LC	-	-
Passeriformes	Tyrannidae	*Pitangus sulphuratus*	Bienteveo Grande	-	-	LC	-	-
Passeriformes	Tyrannidae	*Philohydor lictor*	Bienteveo Menor	-	-	LC	-	-
Passeriformes	Tyrannidae	*Myiodynastes maculatus*	Mosquero Rayado	-	-	LC	-	-
Passeriformes	Tyrannidae	*Megarynchus pitangua*	Mosquero Picudo	-	-	LC	-	-
Passeriformes	Tyrannidae	*Tyrannopsis sulphurea*	Tirano Palmero	-	-	LC	-	-
Passeriformes	Tyrannidae	*Tyrannus melancholicus*	Tirano Tropical	Wuibiri (Pieroa)	-	LC	-	-
Passeriformes	Tyrannidae	*Myiarchus tuberculifer*	Copetón Crestioscuro	-	-	LC	-	-
Passeriformes	Tyrannidae	*Myiarchus ferox*	Copetón Feroz	-	-	LC	-	-

Order	Family	Species	Common Name (Spanish)	Common Name (Local Ethnic Language)	Endemism	IUCN Status	CITES Status	Migratory Status
Passeriformes	Tyrannidae	*Attila citriniventris*	Atila Citrino	-	-	LC	-	-
Passeriformes	Cotingidae	*Rupicola rupicola*	Gallito de Las Rocas Guayanés	-	-	LC	II	-
Passeriformes	Cotingidae	*Xipholena punicea*	Cotinga Pompadour	-	-	LC	-	-
Passeriformes	Pipridae	*Heterocercus flavivertex*	Saltarín Crestiamarillo	-	-	LC	-	-
Passeriformes	Pipridae	*Manacus manacus*	Saltarín Barbiblanco	-	-	LC	-	-
Passeriformes	Pipridae	*Pseudopipra pipra*	Saltarín Coroniblanco	-	-	LC	-	-
Passeriformes	Pipridae	*Ceratopipra erythrocephala*	Saltarín Cabecidorado	-	-	LC	-	-
Passeriformes	Tityridae	*Tityra inquisitor*	Titira Coroninegra	Guaiguará (Pieroa)	-	LC	-	-
Passeriformes	Tityridae	*Tityra cayana*	Titira Colinegro	-	-	LC	-	-
Passeriformes	Tityridae	*Iodopleura isabellae*	Cotinguita Cejiblanco	-	-	LC	-	-
Passeriformes	Vireonidae	*Cyclarhis gujanensis*	Vireón Cejirrufo	-	-	LC	-	-
Passeriformes	Vireonidae	*Vireo chivi*	Vireo chiví	-	-	LC	-	-
Passeriformes	Vireonidae	*Vireo olivaceus*	Vireo Ojirrojo	-	-	LC	-	R-Mb
Passeriformes	Vireonidae	*Vireo altiloquus*	Vireo Bigotinegro	-	-	LC	-	Mb
Passeriformes	Corvidae	*Cyanocorax violaceus*	Chara Violácea	Ciecua (Pieroa)	-	LC	-	-
Passeriformes	Hirundinidae	*Atticora fasciata*	Golondrina Fajiblanca	-	-	LC	-	-
Passeriformes	Hirundinidae	*Progne tapera*	Martín Pechipardo	-	-	LC	-	-
Passeriformes	Hirundinidae	*Tachycineta albiventer*	Golondrina Aliblanca	-	-	LC	-	-
Passeriformes	Troglodytidae	*Microcerculus marginatus*	Sotorrey-Ruiseñor Sureño	-	-	LC	-	-
Passeriformes	Troglodytidae	*Troglodytes aedon*	Sotorrey Común	-	-	LC	-	-
Passeriformes	Troglodytidae	*Pheugopedius coraya*	Cucarachero Coraya	-	-	LC	-	-
Passeriformes	Troglodytidae	*Henicorhina leucosticta*	Sotorrey-Selvático Pechiblanco	-	-	LC	-	-
Passeriformes	Polioptilidae	*Polioptila plumbea*	Perlita Tropical	-	-	LC	-	-
Passeriformes	Turdidae	*Turdus ignobilis*	Zorzal Piquinegro	-	-	LC	-	-
Passeriformes	Fringillidae	*Euphonia minuta*	Eufonia Ventriblanca	-	-	LC	-	-
Passeriformes	Passerellidae	*Zonotrichia capensis*	Gorrión Ruficollarejo	-	-	LC	-	-

Order	Family	Species	Common Name (Spanish)	Common Name (Local Ethnic Language)	Endemism	IUCN Status	CITES Status	Migratory Status
Passeriformes	Icteridae	*Psarocolius viridis*	Cacique Verde	-	-	LC	-	-
Passeriformes	Icteridae	*Psarocolius decumanus*	Oropéndola Crestada	-	-	LC	-	-
Passeriformes	Icteridae	*Cacicus cela*	Cacique Lomiamarillo	Yauri (Curipaco)	-	LC	-	-
Passeriformes	Icteridae	*Icterus cayanensis*	Turpial Boyerito	-	-	-	-	-
Passeriformes	Parulidae	*Setophaga striata*	Reinita Estriada	-	-	NT	-	Mb
Passeriformes	Cardinalidae	*Piranga rubra*	Tangara Veranera	-	-	LC	-	Mb
Passeriformes	Thraupidae	*Sicalis columbiana*	Chirigüe Frentinaranja	-	-	LC	-	-
Passeriformes	Thraupidae	*Ramphocelus carbo*	Tangara Picoplata	-	-	LC	-	-
Passeriformes	Thraupidae	*Cyanerpes caeruleus*	Mielero Purpúreo	-	-	LC	-	-
Passeriformes	Thraupidae	*Cyanerpes cyaneus*	Mielero Patirrojo	-	-	LC	-	-
Passeriformes	Thraupidae	*Dacnis cayana*	Dacnis Azul	-	-	LC	-	-
Passeriformes	Thraupidae	*Coereba flaveola*	Mielero Reinita	-	-	LC	-	-
Passeriformes	Thraupidae	*Stilpnia cayana*	Tangara Isabel	-	-	-	-	-
Passeriformes	Thraupidae	*Thraupis episcopus*	Tangara Azuleja	-	-	LC	-	-
Passeriformes	Thraupidae	*Thraupis palmarum*	Tangara Palmera	-	-	LC	-	-

ANNEX 2

COMPARISON OF SPECIES LISTS RECORDED FROM VARIOUS SOURCES

eBird approximately 30 km from the study area, the list compiled by the Humboldt Institute in 2009 (Villareal et al. 2009), and our records.

Species	eBird (~ 30 Km)	Humboldt 2009	Matavén 2022
Tinamus major	X		X
Tinamus guttatus		X	
Crypturellus cinereus	X	X	X
Crypturellus soui			X
Crypturellus undulatus	X		
Crypturellus variegatus	X		
Cairina moschata		X	
Penelope jacquacu		X	X
Pipile cumanensis		X	X
Ortalis guttata		X	X
Ortalis motmot	X		
Crax alector	X		
Mitu tomentosum		X	
Odontophorus gujanensis		X	
Patagioenas speciosa	X	X	
Patagioenas cayennensis	X	X	X
Patagioenas plumbea	X		
Patagioenas subvinacea	X	X	
Geotrygon montana		X	
Leptotila verreauxi	X	X	X
Leptotila rufaxilla	X		X
Columbina passerina	X	X	X
Columbina talpacoti	X		
Columbina squammata	X		
Claravis pretiosa	X		
Crotophaga major	X	X	X
Crotophaga ani	X	X	X
Tapera naevia		X	
Coccycua minuta	X		

Species	eBird (~ 30 Km)	Humboldt 2009	Matavén 2022
Coccycua pumila		X	
Piaya cayana	X	X	X
Nyctibius griseus		X	X
Chordeiles nacunda		X	
Chordeiles pusillus		X	
Chordeiles rupestris	X		
Chordeiles acutipennis	X		X
Nyctiprogne leucopyga	X	X	
Nyctipolus nigrescens		X	X
Nyctidromus albicollis	X	X	X
Hydropsalis cayennensis			X
Hydropsalis climacocerca	X		
Streptoprocne zonaris	X		
Chaetura brachyura	X		X
Tachornis squamata		X	
Glaucis hirsutus		X	X
Phaethornis rupurumii		X	
Phaethornis ruber	X	X	X
Phaethornis hispidus	X		
Phaethornis malaris		X	
Heliothryx auritus	X		
Polytmus theresiae	X	X	X
Chrysolampis mosquitus			X
Anthracothorax nigricollis	X		X
Heliomaster longirostris	X		
Calliphlox amethystina			X
Thalurania furcata	X	X	
Chrysuronia versicolor		X	X
Chrysuronia brevirostris	X		
Chionomesa fimbriata	X		
Hylocharis sapphirina			X
Chlorestes cyanus		X	X
Chlorestes notata	X		
Psophia crepitans		X	
Aramides cajaneus	X	X	
Heliornis fulica	X		
Vanellus cayanus	X	X	
Vanellus chilensis	X	X	

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Charadrius collaris	X		
Gallinago delicata		X	
Actitis macularius	X	X	
Tringa solitaria		X	
Jacana jacana	X	X	
Rynchops niger	X	X	
Sternula superciliaris	X	X	
Phaetusa simplex	X	X	X
Eurypyga helias	X	X	X
Jabiru mycteria	X		
Anhinga anhinga	X	X	X
Nannopterum brasilianum	X	X	
Tigrisoma lineatum		X	
Nycticorax nycticorax			X
Butorides striata	X	X	X
Bubulcus ibis	X		
Ardea herodias		X	
Ardea cocoi	X	X	X
Ardea alba	X		X
Pilherodius pileatus	X	X	
Egretta thula	X	X	
Egretta caerulea	X	X	X
Mesembrinibis cayennensis	X	X	
Phimosus infuscatus	X		
Sarcoramphus papa			X
Coragyps atratus	X	X	X
Cathartes aura	X	X	X
Cathartes melambrotus	X		
Pandion haliaetus	X	X	
Gampsonyx swainsonii		X	X
Elanoides forficatus		X	
Spizaetus melanoleucus	X		
Busarellus nigricollis	X	X	
Harpagus bidentatus	X		
Ictinia plumbea		X	
Microspizias superciliosus	X		
Geranospiza caerulescens	X		
Buteogallus schistaceus	X		

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Buteogallus meridionalis		X	
Buteogallus urubitinga	X	X	X
Rupornis magnirostris	X	X	X
Megascops choliba		X	
Pulsatrix perspicillata	X		
Glaucidium brasilianum	X		
Trogon melanurus	X		
Trogon viridis	X	X	X
Trogon ramonianus			X
Trogon collaris		X	
Momotus momota	X	X	X
Megaceryle torquata	X	X	
Chloroceryle amazona	X	X	
Chloroceryle aenea	X	X	
Chloroceryle americana	X	X	X
Chloroceryle inda	X	X	
Brachygalba lugubris		X	
Galbula albirostris		X	
Galbula galbula	X	X	X
Galbula leucogastra		X	
Jacamerops aureus		X	
Notharchus hyperrhynchus	X	X	
Notharchus ordii		X	
Bucco macrodactylus		X	
Bucco tamatia		X	X
Nonnula brunnea			X
Monasa atra	X		
Monasa nigrifrons	X		
Monasa morphoeus		X	X
Chelidoptera tenebrosa	X	X	X
Capito auratus	X	X	
Ramphastos tucanus	X	X	X
Ramphastos vitellinus	X	X	X
Pteroglossus viridis	X		
Pteroglossus pluricinctus			X
Pteroglossus azara	X		X
Picumnus pumilus		X	X
Picumnus exilis	X		

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Melanerpes cruentatus	X	X	X
Melanerpes rubricapillus	X		
Campephilus rubricollis		X	
Campephilus melanoleucos	X	X	X
Dryocopus lineatus	X	X	X
Celeus torquatus	X		
Celeus grammicus	X	X	X
Celeus flavus	X		
Celeus elegans	X	X	X
Piculus flavigula	X	X	
Piculus chrysochloros		X	
Colaptes punctigula	X		
Herpetotheres cachinnans	X		X
Micrastur gilvicollis		X	
Caracara plancus	X	X	X
Ibycter americanus		X	
Daptrius ater	X	X	X
Daptrius chimachima	X		X
Falco rufigularis	X	X	
Brotogeris cyanoptera	X	X	X
Pionus menstruus	X	X	X
Amazona ochrocephala	X		X
Amazona farinosa	X	X	
Amazona amazonica	X	X	X
Pionites melanocephalus		X	X
Pyrrhura melanura		X	
Eupsittula pertinax	X	X	X
Orthopsittaca manilatus			X
Ara ararauna	X		
Ara macao		X	X
Ara chloropterus		X	X
Ara severus	X	X	
Taraba major	X		
Sakesphorus canadensis	X	X	X
Thamnophilus doliatus	X		
Thamnophilus tenuepunctatus		X	
Thamnophilus murinus	X	X	
Thamnophilus nigrocinereus	X	X	

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Thamnophilus punctatus	X		
Thamnophilus aethiops		X	
Thamnophilus amazonicus	X	X	X
Thamnomanes caesius		X	
Epinecrophylla haematonota		X	
Myrmotherula brachyura	X		
Myrmotherula ambigua		X	
Myrmotherula surinamensis	X		
Myrmotherula multostriata			X
Myrmotherula cherriei		X	
Myrmotherula axillaris	X	X	X
Myrmotherula longipennis		X	
Dichrozona cincta		X	
Formicivora grisea		X	X
Hypocnemis cantator		X	
Hypocnemis flavescens	X		
Hypocnemis hypoxantha		X	
Cercomacroides tyrannina	X		
Cercomacra cinerascens	X	X	
Myrmoborus leucophrys	X	X	
Hypocnemoides melanopogon	X	X	
Aprositornis disjuncta		X	
Pithys albifrons		X	
Gymnopithys leucaspis		X	X
Willisornis poecilinotus		X	
Myrmothera campanisona		X	
Formicarius colma		X	X
Sittasomus griseicapillus	X	X	
Dendrocincla merula		X	
Dendrocincla fuliginosa		X	
Glyphorynchus spirurus	X	X	
Nasica longirostris	X	X	X
Dendrocolaptes picumnus	X		
Xiphocolaptes promeropirhynchus	X	X	
Xiphorhynchus obsoletus	X	X	
Xiphorhynchus ocellatus		X	
Xiphorhynchus guttatus	X		X
Dendroplex picus	X	X	X

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Xenops minutus	X	X	
Automolus ochrolaemus		X	
Automolus infuscatus		X	
Thripophaga cherriei	X		
Cranioleuca vulpina	X		
Synallaxis gujanensis	X		
Synallaxis beverlyae	X		
Synallaxis albescens	X	X	
Tyrannulus elatus	X	X	X
Myiopagis gaimardii	X		
Myiopagis caniceps	X		
Myiopagis flavivertex	X		
Elaenia flavogaster			X
Elaenia cristata		X	
Elaenia chiriquensis		X	
Elaenia ruficeps		X	
Camptostoma obsoletum	X	X	
Serpophaga hypoleuca	X		
Capsiempis flaveola	X	X	
Corythopis torquatus		X	
Zimmerius gracilipes	X		
Mionectes oleagineus		X	X
Leptopogon amaurocephalus		X	
Inezia subflava	X	X	
Myiornis ecaudatus	X		
Lophotriccus galeatus	X	X	X
Todirostrum cinereum	X		X
Tolmomyias poliocephalus	X		
Tolmomyias flaviventris	X	X	
Platyrinchus platyrhynchos		X	
Onychorhynchus coronatus		X	
Terenotriccus erythrurus		X	
Lathrotriccus euleri	X		
Cnemotriccus fuscatus	X		
Empidonax virescens		X	
Knipolegus orenocensis	X		
Knipolegus poecilocercus	X	X	X
Ochthornis littoralis	X		

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Fluvicola pica	X		
Arundinicola leucocephala	X		
Legatus leucophaius	X	X	
Myiozetetes cayanensis	X	X	X
Myiozetetes similis	X		
Myiozetetes granadensis	X		
Pitangus sulphuratus	X	X	X
Philohydor lictor	X	X	X
Conopias parvus	X		
Myiodynastes maculatus			X
Megarynchus pitangua	X	X	X
Tyrannopsis sulphurea			X
Tyrannus melancholicus	X	X	X
Tyrannus savana		X	
Rhytipterna simplex	X	X	
Rhytipterna immunda		X	
Myiarchus tuberculifer		X	X
Myiarchus swainsoni	X		
Myiarchus venezuelensis		X	
Myiarchus ferox	X	X	X
Ramphotrigon ruficauda		X	
Attila cinnamomeus	X	X	
Attila citriniventris		X	X
Attila spadiceus	X	X	
Rupicola rupicola			X
Cephalopterus ornatus	X		
Cotinga cayana		X	
Lipaugus vociferans	X		
Xipholena punicea		X	X
Gymnoderus foetidus	X		
Tyranneutes stolzmanni		X	
Xenopipo atronitens		X	
Heterocercus flavivertex	X	X	X
Manacus manacus		X	X
Pipra filicauda	X		
Pseudopipra pipra		X	X
Ceratopipra erythrocephala	X	X	X
Tityra inquisitor	X		X

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Tityra cayana	X	X	X
Schiffornis turdina		X	
Laniocera hypopyrra		X	
Iodopleura isabellae	X		X
Pachyramphus polychopterus		X	
Pachyramphus marginatus	X		
Piprites chloris		X	
Cyclarhis gujanensis	X	X	X
Hylophilus flavipes	X		
Hylophilus semicinereus	X		
Hylophilus brunneiceps		X	
Pachysylvia muscicapina	X		
Vireo chivi			X
Vireo olivaceus			X
Vireo altiloquus			X
Cyanocorax violaceus	X	X	X
Pygochelidon melanoleuca	X		
Atticora fasciata	X	X	X
Stelgidopteryx ruficollis	X	X	
Progne tapera	X	X	X
Progne chalybea	X		
Tachycineta albiventer	X	X	X
Hirundo rustica	X		
Microcerculus marginatus		X	X
Troglodytes aedon	3	X	X
Pheugopedius coraya	X	X	X
Cantorchilus leucotis	X	X	
Henicorhina leucosticta			X
Ramphocaenus melanurus	X		
Polioptila plumbea	X	X	X
Catharus minimus		X	
Turdus leucomelas		X	
Turdus fumigatus	X	X	
Turdus hauxwelli	X		
Turdus ignobilis		X	X
Turdus olivater	X		
Turdus albicollis		X	
Euphonia plumbea		X	

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Euphonia chlorotica	X		
Euphonia violacea	X		
Euphonia minuta	X		X
Euphonia rufiventris	X	X	
Ammodramus aurifrons	X		
Arremon taciturnus		X	
Zonotrichia capensis	X	X	X
Sturnella magna		X	
Psarocolius viridis		X	X
Psarocolius decumanus	X		X
Psarocolius bifasciatus	X	X	
Cacicus cela	X	X	X
Icterus cayanensis			X
Molothrus oryzivorus	X		
Molothrus bonariensis	X		
Quiscalus lugubris	X		
Lampropsar tanagrinus	X		
Gymnomystax mexicanus	X		
Chrysomus icterocephalus		X	
Parkesia noveboracensis	X	X	
Setophaga petechia	X	X	
Setophaga striata	X	X	X
Piranga rubra	X	X	X
Cyanoloxia cyanoides		X	
Cyanoloxia rothschildii	X		
Hemithraupis flavicollis	X		
Sicalis columbiana	X	X	X
Volatinia jacarina	X	X	
Tachyphonus phoenicius		X	
Eucometis penicillata	X		
Ramphocelus carbo	X	X	X
Cyanerpes caeruleus		X	X
Cyanerpes cyaneus		X	X
Dacnis flaviventer	X		
Dacnis cayana		X	X
Sporophila bouvronides	X		
Sporophila lineola	X		
Sporophila castaneiventris	X		

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Sporophila minuta	X		
Sporophila angolensis		X	
Sporophila nigricollis	X	X	
Saltator maximus	X	X	
Emberizoides herbicola		X	
Thlypopsis sordida	X		
Coereba flaveola	X	X	X
Paroaria nigrogenis	X		
Paroaria gularis	X		
Stilpnia cayana	X	X	X
Stilpnia nigrocincta	X		
Tangara mexicana	X		
Thraupis episcopus	X	X	X
Thraupis palmarum	X	X	X