

The birds of CIEM, Tinigua National Park, Colombia: an overview of 13 years of ornithological research

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Presentamos un panorama general de la investigación ornitológica desarrollada durante trece años en el Centro de Investigaciones Ecológicas Macarena (CIEM), una estación biológica de la Universidad de los Andes (Bogotá, Colombia) y Miyagi University of Education (Japón). El CIEM está ubicado en un bosque húmedo tropical de tierras bajas al norte de la Amazonía colombiana ($02^{\circ}40'N$ $74^{\circ}10'W$), un lugar de gran importancia biogeográfica por la confluencia de elementos andinos, amazónicos, de los llanos y del escudo guyanés. Hasta la fecha, hemos registrado un total de 441 especies de aves incluyendo 18 migratorias Neárticas y cinco migratorias australes. Los registros reportados amplian el rango de distribución conocido de 114 de las especies incluyendo el primer registro para Colombia de *Cacicus sclateri* y el hallazgo de especies poco conocidas en el país como *Deconychura stictolaema*, *Myrmotherula sunensis*, *Drymophila devillei*, *Rhegmatorhina melanosticta*, *Hylophylax punctulata* y *Turdus laurentii*. Además de inventarios de aves, varios proyectos en ornitología se han desarrollado en el CIEM desde su creación en 1986. Entre éstos se incluyen estudios de campo sobre ecología y comportamiento de paujiles *Mitu salvini* y *Crax alector*, densidades poblacionales de aves de gran tamaño, ecología de aves migratorias Neárticas, biología reproductiva de aves playeras, comportamiento de aves frugívoras, asociaciones de insectívoros en bandadas mixtas y selección de hábitat a nivel de la comunidad. El CIEM es un sitio bien establecido, con instalaciones adecuadas y buena información básica sobre su avifauna, lo cual lo convierte en un lugar ideal para cualquier persona interesada en desarrollar investigaciones de campo.

Introduction

Tinigua National Park is located in the northern Colombian Amazon, between the Cordillera Oriental of the Andes and Sierra de La Macarena (Fig. 1). Tinigua adjoins two other Colombian national parks: Los Picachos and La Macarena, which protect a $12,763 \text{ km}^2$ altitudinal continuum that represents one of the key conservation areas in Colombia. The three protected areas encompass all life-zones, ranging from páramo in the Cordillera Oriental to lowland humid forests of the Amazonian plains surrounding the río Guaviare¹¹.

Although the region belongs to Amazonia *sensu lato*, it has a particularly interesting geological history and geographic position. Despite the close proximity of the Sierra de La Macarena to the Eastern Andes, their origins are completely independent. The sierra, as with most of northern Amazonia, is geologically part of the Guyana Shield, characterised by poor soils, whereas the Andes are considerably younger with rich volcanic soils^{9,19}. In addition, the geographic position of Tinigua and La Macarena National Parks is strongly influenced by the convergence of Amazonia and Orinoquia (Llanos) ecosystems. These major influences are all recognised centres of biodiversity and significant sources of species composition, posing problems when attempting to classify the area biogeographically and zoogeographically¹¹. The region's great biodiversity is probably largely a consequence of the interaction and overlap of these

influences. These factors point to the conservation priority for the area, as well as the need for biological research to provide basic information concerning its constituent communities and ecological processes. Sadly, political instability in the region has largely deterred such studies.

The Centro de Investigaciones Ecológicas Macarena biological station (CIEM) is located on the west bank of the whitewater río Duda ($02^{\circ}40'N$ $74^{\circ}10'W$, 350–400 m asl.), which forms the boundary between Tinigua and La Macarena National Parks (Fig. 1). The río Duda meets the río Guayabero, a tributary of the río Orinoco, c.13 km downstream. The temperature at CIEM is relatively constant throughout the year (25°C) but precipitation is strongly seasonal with a dry season from December to February–March, and rainy season during the remainder of the year, with c.2,600 mm mean annual rainfall¹⁷.

CIEM encompasses lowland humid forest with several distinctive habitats^{4,13,27,27,30}. Low-lying seasonally flooded forests are characterised by a discontinuous canopy dominated by *Guarea guidonia*, *Laetia corymbulosa*, *Ficus* spp., *Inga* spp. and *Cecropia* spp. trees, and a dense understorey with abundant *Heliconia* spp. herbs. *Tessaria integrifolia*, *Gynerium sagittatum*, young *Cecropia* spp. and various graminoids dominate early successional riparian forests on recently formed sandbanks along river margins. Rolling hills dissected by streams support *terra firme* forest with

a continuous 20–25 m-high canopy with emergent trees to 30 m on ridges. Lower, eroded hill slopes and small valleys formed by creeks are covered by open degraded forest, dominated by vines, lianas, bamboo and thick understorey. One 426 ha forest plot surrounding one of three CIEM base camps encompasses primary forest (53% of the total area), open degraded forest (34%), seasonally flooded forest (11%), and riparian and secondary forests with overt human intervention (2%)²⁸.

CIEM was created in 1986 through an agreement between Universidad de los Andes, Bogotá, Colombia and Miyagi University of

Education, Japan. The Colombian and Japanese coordinators since that time have been CAM and K. Izawa. Since the establishment of Tinigua National Park in 1989, Universidad de los Andes has signed special agreements with local environmental authorities in order to work cooperatively in research and education programmes. Since 1988, CIEM has published papers on different projects carried out at the study site in its own journal: *Field studies of New World monkeys, La Macarena*. The journal, which is published annually or biannually, recently changed its name to *Field studies of fauna and flora, La Macarena, Colombia*. Back issues can be obtained from CAM.

Ornithological research at CIEM began in 1986 with non-systematic observations, mist-netting, and specimen collection conducted by CAM, IJ, MA, MS and several other students of Universidad de los Andes. Specimens have been deposited in the ornithological collections of the Instituto de Ciencias Naturales (ICN), Universidad Nacional de Colombia, Bogotá and the Instituto Alexander von Humboldt (IAvH, formerly UNIFEM-INDERENA), Villa de Leyva. Research during the first seven years produced a preliminary bird inventory of 373 species¹. Bird censuses and mist-netting continue to be undertaken by various researchers and students. This paper presents a summary of the findings from 13 years of ornithological research together with the current inventory of 441 species (Appendix 1). Although the list is still far from complete, with sampling lacking in various microhabitats, such as oxbow lakes, bamboo thickets, tree-fall gaps, and forest edges on river banks, the number of species recorded at CIEM falls within the range reported for Neotropical lowland forest localities following long-term studies (e.g. Karr *et al.* 1990¹⁶).

The avifauna of CIEM includes 18 Nearctic and five austral migrants, while records of 114 species represent significant extensions of the distribution described by Hilty & Brown 1986¹². Others expand previously reported altitudinal ranges. The following records are particularly noteworthy because the species involved are poorly known in Colombia, with no or very few previous records.

Spot-throated Woodcreeper *Deconychura stictolaema*

Although suspected to be widespread in the Colombian Amazonia, this species has only been reported from dpto. Putumayo⁷, two localities in dpto. Amazonas³ (M. Kelsey pers. comm.), southern dpto. Vaupés⁵, and Chiribiquete National Park (F. G. Stiles pers. comm.). Four individuals have been captured (one collected by MA *et al.*, ICN 32489) at CIEM in *terra firme* primary forest.

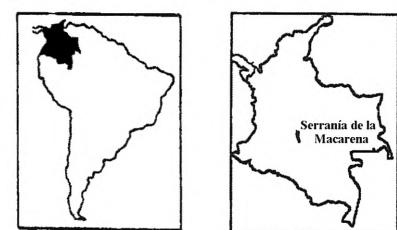
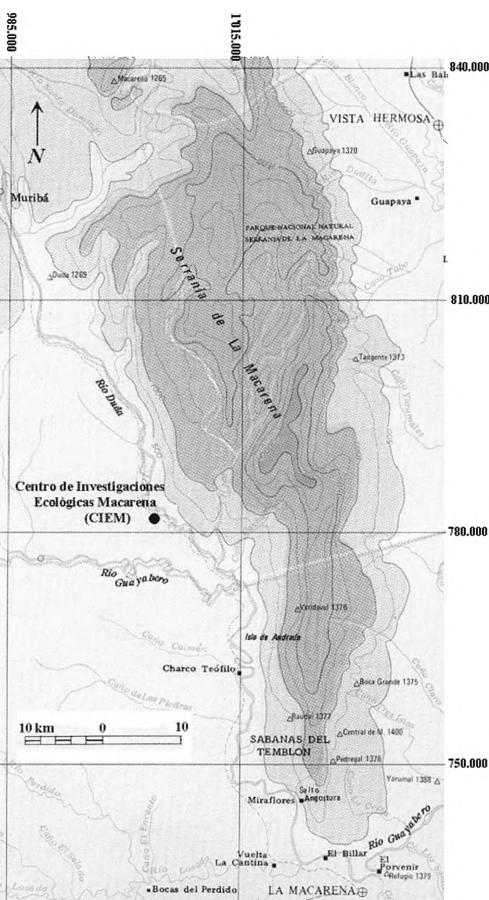


Figure 1. Location of Tinigua National Park.

Río Suno Antwren *Myrmotherula sunensis*

The only previous records of this species in Colombia were made in the extreme south-east on the Nariño–Putumayo border near the eastern base of the Andes¹². A single specimen collected by CAM at CIEM (IAvH 7035) represents a very significant extension of its known range.

Striated Antbird *Drymophila devillei*

Known in Colombia only from two specimens from uncertain localities in dpto. Putumayo²⁹. A pair was observed and repeatedly heard singing in a bamboo thicket in seasonally flooded forest, very close to a river bank, in June 1997. Vocalisations were recorded by IJ and deposited in the Library of Natural Sounds at Cornell University, Ithaca, NY. The species' specific bamboo microhabitat requirements^{18,22} probably account for its apparently patchy distribution.

Hairy-crested Antbird *Rhegmatorhina melanosticta*

This 'professional' ant follower was known in Colombia only from two localities in dpto. Putumayo^{7,32} and recently from Chiribiquete and La Paya National Parks (F. G. Stiles pers. comm.), and Serranía de los Churumbelos, dpto. Cauca (P. Salaman pers. comm.). Several sight records have been made at CIEM, both in *terra firme* primary and open degraded forests.

Dot-backed Antbird *Hylophylax punctulata*

Known from one Colombian specimen (FMNH, Chicago) from Río Guapaya, Sierra de La Macarena, collected by K. von Sneidern in 1957 and previously misidentified as *H. naevia*²³ (D. E. Willard pers. comm.). This species is patchily distributed and its distribution poorly known²². At CIEM, a male was trapped and photographed in 1997 by JA and CAB in *terra firme* forest very close to seasonally flooded forest, which appears to be its usual habitat²⁴.

Lawrence's Thrush *Turdus lawrencii*

Known in Colombia only from specimens obtained in Leticia²⁰ and Putumayo⁷ and sightings in Vaupés^{5,12} and Amazonas³ (M. Kelsey pers. comm.). *Turdus lawrencii* is the least known of the *Turdus* that breed in Amazonia and is patchily distributed, often being absent from apparently appropriate habitat¹⁰. Three observed and one collected (ICN 32026) at CIEM by MA *et al.* in 1995 in *terra firme* forest represent the northernmost records for the species.

Ecuadorian Cacique *Cacicus sclateri*

The occurrence of this poorly known species was considered possible but unconfirmed in southern Colombia¹⁴. A pair observed by CAB at CIEM in April 1996 nested on an isolated aquatic ceiba

Pseudobombax munguba in the middle of an oxbow lake. Unfortunately, no specimens were obtained due to the inaccessibility of the nest.

Specific projects at CIEM

Aside from general bird inventories, several specific ornithological projects have been conducted at CIEM. A brief summary of some, largely unpublished, studies is presented, with further details being available from CDC.

The most important project at CIEM has been the pioneer work on the ecology of curassows (Cracidae) in the wild. MS and AMF commenced the project in 1990, habituating a pair of Salvin's Curassows *Mitu salvini* to the presence of human observers. This permitted the observers (and subsequent researchers) to follow the curassow pair and their young for extended time periods at very close range (2–5 m) and make very detailed observations on their behaviour. After intensive fieldwork, valuable information was collected for this species on diet composition, foraging behaviour, spatial requirements, reproductive biology, parental care, seed dispersal and predation, and population density^{8,24}. A complementary study focused on the importance of these birds as seed predators and dispersers⁶. Stevenson²⁶ provides information on population densities of both *Mitu salvini* and Black Curassow *Crax alector*, along with other cracids occurring at CIEM: Speckled Chachalaca *Ortalis guttata*, Blue-throated Piping-guan *Pipile cumanensis* and Spix's Guan *Penelope jacquacu*. His censuses also included Grey-winged Trumpeters *Psophia crepitans*. Since 1994, *Crax alector* has also been studied at CIEM, with researchers focusing on the species' diet composition, spatial requirements, reproductive biology and feeding of the young. Recent research on curassows at CIEM has been conducted by IJ *et al.* and has focused on foraging behaviour and use of space, its variation over different time periods, and its relationship to the availability of food. Future work on curassows will include a comparative study on the ecology of *M. salvini* and *C. alector* and relationships to fruit availability, and a doctoral dissertation that endeavours to determine how curassows select their diet. Details are available from IJ.

CIEM was one of five Colombian localities selected for censuses and banding of Nearctic migrants in 1991 and 1992 by MA, IJ, K. Schuetze and G. W. Kaiser of Universidad de los Andes and the Programa Latino America of the Canadian Wildlife Service (CWS). Presently, AC in conjunction with Dr K. A. Hobson (CWS—University of Saskatchewan) is studying the migration biology of four Nearctic passerines (*Catharus ustulatus*, *Dendroica striata*, *Setophaga ruticilla*, and *Seiurus noveboracensis*) at CIEM. This is part of a major project that plans to establish the connection

between breeding and wintering sites for different populations of these and other Nearctic migrants. Further analyses including the use of genetic tags and stable isotopes will provide data on the origin of the birds wintering at CIEM, and long-term monitoring will aid in determining the importance of this region for the conservation of migrant birds.

Various species nest on the extensive sand shores of the río Duda during the dry season. Detailed studies have been performed on the breeding biology of some of these: Pied Lapwing *Vanellus cayanus* by IJ and CAM¹⁵, and Large-billed *Phaetusa simplex* and Yellow-billed Terns *Sterna superciliaris* by J. C. Verhelst³¹.

Two studies involving frugivores have been completed at CIEM: the natural history and reproductive biology of Purple-throated Fruitcrow *Querula purpurata* by J. D. Amaya², and on the assemblages of diurnal fruit-eating arboreal vertebrates at fig trees by IJ, MA and CAM.

CAB and JA, concentrating on species composition and role within flocks, their daily activities, habitat use and home range size have studied mixed insectivorous species foraging flocks in the understorey. In progress, since 1995, is a long-term project on habitat selection of forest birds, directed by MA, in which several students of Universidad de los Andes have participated. Systematic censuses and mist-netting have been carried out in riparian, seasonally flooded, and *terra firme* forests. In addition, more than 130 hours of bird vocalisations have been recorded by MA and IJ. Once processed, at the Sound Bank of the Instituto Alexander von Humboldt, it is likely that several new species will be added to the area's avifauna.

As demonstrated, CIEM is a well-established site with facilities and good baseline bird data, ideal for anyone wishing to conduct research. Those wishing to visit CIEM should contact Carlos A. Mejia to arrange permission, accommodation and receive specific access details. Two or three days are required to reach CIEM from Bogotá. The trip has three main stages: Bogotá–Villavicencio (four hour bus ride or 30 minute flight), Villavicencio–La Macarena (one hour flight), and La Macarena–CIEM (c.8 hours upriver, depending on weather conditions).

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Appendix I. Bird species recorded at CIEM, Tinigua National Park, Colombia.English and scientific names follow Sibley (1996)²⁵. Sequence follows Hilty & Brown (1986)¹².

(*) = Range extension

(N) = Nearctic migrant

(A) = Austral migrant

Subspecies are mentioned only when relevant to migratory status.

Great Tinamou *Tinamus major*White-throated Tinamou *Tinamus guttatus*Cinerous Tinamou *Crypturellus cinereus*Little Tinamou *Crypturellus soui*Undulated Tinamou *Crypturellus undulatus*Variegated Tinamou *Crypturellus variegatus* *Neotropic Cormorant *Phalacrocorax brasiliensis*Anhinga *Anhinga anhinga*Great Blue Heron *Ardea herodias* *Cocoi Heron *Ardea cocoi*Great Egret *Ardea alba*Snowy Egret *Egretta thula*Little Blue Heron *Egretta caerulea*Green Heron *Butorides virescens* (N)Striated Heron *Butorides striatus*Agami Heron *Agamia agami*Cattle Egret *Bubulcus ibis*Whistling Heron *Syrigma sibilatrix* *Capped Heron *Pilherodius pileatus*Black-crowned Night-heron *Nycticorax nycticorax*Rufescent Tiger-heron *Tigrisoma lineatum*Boat-billed Heron *Cochlearius cochlearius*Wood Stork *Mycteria americana*Green Ibis *Mesembrinibis cayennensis* *Whispering Ibis *Phimosus infuscatus*Scarlet Ibis *Eudocimus ruber*Roseate Spoonbill *Ajaia ajaja*Horned Screamer *Anhima cornuta*White-faced Whistling-duck *Dendrocygna viduata*Black-bellied Whistling-duck *Dendrocygna autumnalis* *Orinoco Goose *Neochen jubata*Blue-winged Teal *Anas discors* (N)

Muscovy Duck	<i>Cairina moschata</i>
Turkey Vulture	<i>Cathartes aura</i>
Greater Yellow-headed Vulture	<i>Cathartes melambrotus</i>
Black Vulture	<i>Coragyps atratus</i>
King Vulture	<i>Sarcogyps papa</i>
Osprey	<i>Pandion haliaetus</i> (N)
Swallow-tailed Kite	<i>Elanoides forficatus</i>
Pearl Kite	<i>Gampsonyx swainsonii</i>
Snail Kite	<i>Rostrhamus sociabilis</i> *
Double-toothed Kite	<i>Harpagus bidentatus</i>
Plumbeous Kite	<i>Ictinia plumbea</i>
Crane Hawk	<i>Geranospiza caerulescens</i>
Tiny Hawk	<i>Accipiter superciliosus</i>
White Hawk	<i>Leucopternis albicollis</i>
Great Black-hawk	<i>Buteogallus urubitinga</i>
Savanna Hawk	<i>Buteogallus meridionalis</i> *
Black-collared Hawk	<i>Busarellus nigricollis</i> *
Grey-lined Hawk	<i>Buteo nitidus</i> *
Roadside Hawk	<i>Buteo magnirostris</i>
Zone-tailed Hawk	<i>Buteo albonotatus</i>
Crested Eagle	<i>Morphnus guianensis</i> *
Ornate Hawk-eagle	<i>Spizaetus ornatus</i>
Black Caracara	<i>Daptrius ater</i>
Red-throated Caracara	<i>Daptrius americanus</i>
Yellow-headed Caracara	<i>Milvago chimachima</i> *
Laughing Falcon	<i>Herpetotheres cachinnans</i>
Lined Forest-falcon	<i>Micrastur gilvicollis</i>
Collared Forest-falcon	<i>Micrastur semitorquatus</i> *
Bat Falcon	<i>Falco rufigularis</i>
Orange-breasted Falcon	<i>Falco deiroleucus</i>
Speckled Chachalaca	<i>Ortalis guttata</i>
Spix's Guan	<i>Penelope jacquacu</i>
Blue-throated Piping-guan	<i>Pipile cumanensis</i>
Salvin's Curassow	<i>Mitu salvini</i> *
Black Curassow	<i>Crax alector</i> *
Marbled Wood-quail	<i>Odontophorus gujanensis</i>
Limpkin	<i>Aramus guarauna</i> *
Grey-winged Trumpeter	<i>Psophia crepitans</i>
Purple Gallinule	<i>Porphyrio martinicus</i>
Azure Gallinule	<i>Porphyrio flavirostris</i>
Grey-necked Wood-rail	<i>Aramides cajanea</i>
Sunbittern	<i>Eurypyga helias</i>
Wattled Jacana	<i>Jacana jacana</i>
Southern Lapwing	<i>Vanellus chilensis</i>
Pied Lapwing	<i>Vanellus cayanus</i>
Collared Plover	<i>Charadrius collaris</i>
Solitary Sandpiper	<i>Tringa solitaria</i> (N)
Greater Yellowlegs	<i>Tringa melanoleuca</i> (N)
Spotted Sandpiper	<i>Tringa macularia</i> (N)
Double-striped Thick-knee	<i>Burhinus bistriatus</i>
Large-billed Tern	<i>Phaetusa simplex</i>
Yellow-billed Tern	<i>Sterna superciliaris</i>
Black Skimmer	<i>Rynchops niger</i>
Scaled Pigeon	<i>Columba speciosa</i>
Pale-vented Pigeon	<i>Columba cayennensis</i>
Ruddy Pigeon	<i>Columba subvinacea</i>
Plumbeous Pigeon	<i>Columba plumbea</i>
Blue Ground-dove	<i>Claravis pretiosa</i>
Grey-fronted dove	<i>Leptotila rufaxilla</i>
Ruddy Quail-dove	<i>Geotrygon montana</i>
Scarlet Macaw	<i>Ara macao</i>
Chestnut-fronted Macaw	<i>Ara severa</i>
Red-bellied Macaw	<i>Ara manilata</i>
White-eyed Parakeet	<i>Aratinga leucophthalmus</i>
Maroon-tailed Parakeet	<i>Pyrrhura melanura</i>
Cobalt-winged Parakeet	<i>Brotogeris cyanoptera</i>
Black-headed Parrot	<i>Pionites melanocephala</i>
Orange-cheeked Parrot	<i>Pionopsitta barrabandi</i> *
Blue-headed Parrot	<i>Pionus menstruus</i>
Yellow-crowned Parrot	<i>Amazona ochrocephala</i>

Mealy Parrot *Amazona farinosa*
 Black-billed Cuckoo *Coccyzus erythrophthalmus* (N)
 Yellow-billed Cuckoo *Coccyzus americanus* (N)
 Dark-billed Cuckoo *Coccyzus melacoryphus* (A)
 Squirrel Cuckoo *Piaya cayana*
 Black-bellied Cuckoo *Piaya melanogaster*
 Little Cuckoo *Piaya minuta*
 Greater Ani *Crotophaga major*
 Smooth-billed Ani *Crotophaga ani*
 Striped Cuckoo *Tapera naevia*
 Hoatzin *Opisthocomus hoazin*
 Tropical Screech-owl *Otus choliba*
 Tawny-bellied Screech-owl *Otus watsonii* *
 Spectacled Owl *Pulsatrix perspicillata*
 Ferruginous Pygmy-owl *Glaucidium brasiliandum*
 Mottled Owl *Strix virgata*
 Oilbird *Steatornis caripensis* *
 Great Potoo *Nyctibius grandis*
 Common Potoo *Nyctibius griseus*
 Sand-colored Nighthawk *Chordeiles rupestris*
 Nacunda Nighthawk *Podager nacunda*
 Pauraque *Nyctidromus albicollis*
 Ladder-tailed Nightjar *Hydropsalis climacocerca* *
 White-collared Swift *Streptoprocne zonaris*
 Short-tailed Swift *Chaetura brachyura*
 Rufous-breasted Hermit *Glaucis hirsuta*
 Pale-tailed Barbetthroat *Threnetes leucurus*
 Long-tailed Hermit *Phaethornis superciliosus*
 White-bearded Hermit *Phaethornis hispidus*
 Sooty-capped Hermit *Phaethornis augusti* *
 Reddish Hermit *Phaethornis ruber* *
 Grey-chinned Hermit *Phaethornis griseogularis*
 Little Hermit *Phaethornis longuemareus*
 Grey-breasted Sabrewing *Campylopterus largipennis*
 White-necked Jacobin *Florisuga mellivora*
 Black-throated Mango *Anthracothorax nigricollis*
 Festive Coquette *Lophornis chalybeus* *
 Black-bellied Thorntail *Popelairia langsdorffi* *
 Blue-tailed Emerald *Chlorostilbon mellisugus*
 Fork-tailed Woodnymph *Thalurania furcata*
 White-chinned Sapphire *Hylocharis cyanus* *
 Golden-tailed Sapphire *Chrysurona oenone*
 Versicolored Emerald *Amazilia versicolor* *
 Glittering-throated Emerald *Amazilia fimbriata*
 Black-eared Fairy *Heliothryx aurita*
 Long-billed Starthroat *Heliomaster longirostris* *
 Black-tailed Trogon *Trogon melanurus*
 White-tailed Trogon *Trogon viridis*
 Black-throated Trogon *Trogon rufus* *
 Blue-crowned Trogon *Trogon curucui* *
 Violaceous Trogon *Trogon violaceus*
 Ringed Kingfisher *Megacyrle torquata*
 Amazon Kingfisher *Chloroceryle amazona*
 Green Kingfisher *Chloroceryle americana*
 Green-and-rufous Kingfisher *Chloroceryle inda*
 American Pygmy Kingfisher *Chloroceryle aenea*
 Rufous-capped Motmot *Baryphthengus ruficapillus*
 Blue-crowned Motmot *Momotus momota*
 Brown Jacamar *Brachygalba lugubris* *
 Yellow-billed Jacamar *Galbula albirostris*
 White-chinned Jacamar *Galbula tombacea*
 Bronzy Jacamar *Galbula leucogastra* *
 Great Jacamar *Jacamerops aureus*
 White-necked Puffbird *Notharchus macrorhynchus* *
 Pied Puffbird *Notharchus tectus* *
 Chestnut-capped Puffbird *Bucco macrodactylus*
 Collared Puffbird *Bucco capensis*
 White-cheasted Puffbird *Malacoptila fusca*
 Lanceolated Monklet *Micromonacha lanceolata*

Brown Nunlet *Nonnula brunnea*
 Black-fronted Nunbird *Monasa nigrifrons*
 White-fronted Nunbird *Monasa morphoeus*
 Yellow-billed Nunbird *Monasa flavirostris*
 Swallow-winged Puffbird *Chelidoptera tenebrosa*
 Scarlet-crowned Barbet *Capito aurovirens* *
 Black-spotted Barbet *Capito niger*
 Lemon-throated Barbet *Eubucco richardsoni*
 Chestnut-eared Araçari *Pteroglossus castanotis*
 Many-banded Araçari *Pteroglossus pluricinctus*
 Lettered Araçari *Pteroglossus inscriptus*
 Ivory-billed Araçari *Pteroglossus azara*
 Golden-collared Toucanet *Selenidera reinwardtii*
 Yellow-ridged Toucan *Ramphastos culminatus*
 Red-billed Toucan *Ramphastos tucanus*
 Rufous-breasted Piculet *Picumnus rufiventris* *
 Lafresnaye's Piculet *Picumnus lafresnayi* *
 Spot-breasted Woodpecker *Colaptes punctigula*
 Yellow-throated Woodpecker *Piculus flavigula*
 Golden-green Woodpecker *Piculus chrysochloros*
 Chestnut Woodpecker *Celeus elegans*
 Scaly-breasted Woodpecker *Celeus grammicus*
 Cream-colored Woodpecker *Celeus flavus*
 Ringed Woodpecker *Celeus torquatus* *
 Lineated Woodpecker *Dryocopus lineatus*
 Yellow-tufted Woodpecker *Melanerpes cruentatus*
 Smoky-brown Woodpecker *Veniliornis fumigatus* *
 Little Woodpecker *Veniliornis passerinus*
 Red-rumped Woodpecker *Veniliornis kirkii* *
 Crimson-crested Woodpecker *Campephilus melanoleucus*
 Red-necked Woodpecker *Campephilus rubricollis*
 Plain-brown Woodcreeper *Dendrocincla fuliginosa*
 White-chinned Woodcreeper *Dendrocincla merula* *
 Spot-throated Woodcreeper *Deconychura stictolaema* *
 Olivaceous Woodcreeper *Sittasomus griseicapillus*
 Wedge-billed Woodcreeper *Glyphorynchus spirurus*
 Long-billed Woodcreeper *Nasica longirostris* *
 Cinnamon-throated Woodcreeper *Dendrexetastes rufigula* *
 Strong-billed Woodcreeper *Xiphocolaptes promeropirhynchus* *
 Barred Woodcreeper *Dendrocolaptes certhia*
 Black-banded Woodcreeper *Dendrocolaptes picumnus* *
 Straight-billed Woodcreeper *Xiphorhynchus picus*
 Spix's Woodcreeper *Xiphorhynchus spixii*
 Buff-throated Woodcreeper *Xiphorhynchus guttatus*
 Curve-billed Scythebill *Campylorhamphus procurvoides* *
 Dusky Spinetail *Synallaxis moesta*
 Plain-crowned Spinetail *Synallaxis gujanensis*
 Ruddy Spinetail *Synallaxis rutilans*
 Chestnut-winged Hookbill *Ancistrops strigilatus*
 Striped Woodhaunter *Hyloctistes subulatus*
 Cinnamon-rumped Foliage-gleaner *Philydor pyrrhodes* *
 Chestnut-winged Foliage-gleaner *Philydor erythropterus* *
 Rufous-tailed Foliage-gleaner *Philydor ruficaudatus*
 Olive-backed Foliage-gleaner *Automolus infuscatus*
 Ruddy Foliage-gleaner *Automolus rubiginosus* *
 Buff-throated Foliage-gleaner *Automolus ochrolaemus*
 Chestnut-crowned Foliage-gleaner *Automolus rufipileatus* *
 Plain Xenops *Xenops minutus*
 Short-billed Leafcutter *Sclerurus ruficollis*
 Black-tailed Leafcutter *Sclerurus caudacutus*
 Fasciated Antshrike *Cymbilaimus lineatus*
 Great Antshrike *Taraba major*
 Bar-crested Antshrike *Thamnophilus multistriatus* *
 Lined Antshrike *Thamnophilus tenuepunctatus*
 Plain-winged Antshrike *Thamnophilus schistaceus*
 Mouse-colored Antshrike *Thamnophilus murinus* *
 Eastern Slaty-antshrike *Thamnophilus punctatus* *
 Amazonian Antshrike *Thamnophilus amazonicus*
 Dusky-throated Antshrike *Thamnomanes ardesiacus*

Cinereous Antshrike *Thamnomanes caesius*
Pygmy Antwren *Myrmotherula brachyura*
Streaked Antwren *Myrmotherula surinamensis*
Cherrie's Antwren *Myrmotherula cherriei**
Plain-throated Antwren *Myrmotherula hauxwellii*
Stripe-throated Antwren *Myrmotherula haematonota**
Rufous-tailed Antwren *Myrmotherula erythrura**
Ornate Antwren *Myrmotherula ornata*
White-flanked Antwren *Myrmotherula axillaris*
Slaty Antwren *Myrmotherula schisticolor*
Long-winged Antwren *Myrmotherula longipennis**
Rio Suno Antwren *Myrmotherula sunensis**
Grey Antwren *Myrmotherula menetriesii*
Banded Antbird *Dichrozonza cincta*
White-fringed Antwren *Formicivora grisea**
Striated Antbird *Drymophila devillei**
Grey Antbird *Cercomacra cinnamans*
Dusky Antbird *Cercomacra tyrannina*
Blackish Antbird *Cercomacra nigrescens**
Black Antbird *Cercomacra serva**
Jet Antbird *Cercomacra nigricans*
White-browed Antbird *Myrmoborus leucophrys*
Black-faced Antbird *Myrmoborus myotherinus*
Warbling Antbird *Hypocnemis cantator*
Spot-winged Antbird *Percnostola leucostigma*
Silvered Antbird *Sclateria naevia**
White-shouldered Antbird *Myrmeciza melanocephala*
Black-throated Antbird *Myrmeciza atrothorax*
White-plumed Antbird *Pithys albifrons*
White-cheeked Antbird *Gymnopithys leucaspis*
Hairy-crested Antbird *Rhegmatorhina melanosticta**
Black-spotted Bare-eye *Phlegopsis nigromaculata**
Reddish-winged Bare-eye *Phlegopsis erythroptera**
Spot-backed Antbird *Hylophylax naevia*
Dot-backed Antbird *Hylophylax punctulata**
Scale-backed Antbird *Hylophylax poecilinota*
Striated Anthrush *Chamaezza nobilis**
Rufous-capped Anthrush *Formicarius colma*
Black-faced Anthrush *Formicarius analis*
Thrush-like Antpitta *Myrmothera campanisona*
Golden-headed Manakin *Pipra erythrocephala*
Blue-crowned Manakin *Lepidothrix coronata*
Wire-tailed Manakin *Pipra filicauda*
White-bearded Manakin *Manacus manacus*
Striped Manakin *Machaeropterus regulus*
Green Manakin *Chloropipo holochlora*
Dwarf Tyrant-Manakin *Tyrannaeles stolzmanni*
Thrush-like Schiffornis *Schiffornis turdinus**
White-browed Purpletuft *Iodopleura isabellae**
Screaming Piha *Lipaugus vociferans*
Chestnut-crowned Becard *Pachyramphus castaneus*
White-winged Becard *Pachyramphus polychopterus*
Pink-throated Becard *Pachyramphus minor*
Black-tailed Tytira *Tytira cayana*
Black-crowned Tytira *Tytira inquisitor*
Purple-throated Cotinga *Porphyrolaema porphyrolaema**
Plum-throated Cotinga *Cotinga maynana**
Spangled Cotinga *Cotinga cayana*
Bare-necked Fruitcrow *Gymnoderus foetidus*
Purple-throated Fruitcrow *Querula purpurata*
Amazonian Umbrellabird *Cephalopterus ornatus*
Slender-footed Tyrannulet *Zimmerius gracilipes**
Southern Beardless-tyrannulet *Campstostoma obsoletum*
Mouse-colored Tyrannulet *Phaeomyias murina**
Yellow-crowned Tyrannulet *Tyrannulus elatus*
Forest Elaenia *Myiopagis gaimardi*
Small-billed Elaenia *Elaenia parvirostris* (A)
Mottle-backed Elaenia *Elaenia gigas*
Ochre-bellied Flycatcher *Mionectes oleagineus*

Slaty-capped Flycatcher *Leptopogon superciliaris**
Sepia-capped Flycatcher *Leptopogon amaurocephalus*
Yellow Tyrannulet *Capsiempis flaveola**
Ringed Antpitta *Corythopis torquata**
Short-tailed Pygmy-tyrant *Myiornis ecaudatus**
Yellow-browed Tody-flycatcher *Todirostrum chrysocrotaphum*
Common Tody-flycatcher *Todirostrum cinereum**
Slate-headed Tody-flycatcher *Todirostrum sylvia**
Rusty-fronted Tody-flycatcher *Todirostrum latirostre**
Brownish Flycatcher *Cnipodectes subbrunneus*
Rufous-tailed Flatbill *Ramphotrigon ruficauda**
Large-headed Flatbill *Ramphotrigon megacephala**
Olivaceous Flatbill *Rhynchoscyllus olivaceus*
Grey-crowned Flycatcher *Tolmomyias poliocephalus*
Yellow-breasted Flycatcher *Tolmomyias flaviventris*
Golden-crowned Spadebill *Platyrinchus coronatus**
Royal Flycatcher *Onychorhynchus coronatus**
Ruddy-tailed Flycatcher *Myiobius erythrurus*
Sulphur-rumped Flycatcher *Myiobius barbatus*
Drab Water-tyrant *Ochthornis littoralis*
Pied Water-tyrant *Fluvicola pica**
Long-tailed Tyrant *Colonia colonus**
Bright-rumped Attila *Attila spadiceus**
Cinnamon Attila *Attila cinnamomeus**
Greyish Mourner *Rhytipterna simplex*
Cinereous Mourner *Laniocera hypopyrra*
Sirystes *Sirystes sibilator**
Short-crested Flycatcher *Myiarchus ferox*
Brown-crested Flycatcher *Myiarchus tyrannulus**
Great Kiskadee *Pitangus sulphuratus*
Lesser Kiskadee *Philohydor lictor*
Boat-billed Flycatcher *Megarynchus pitangua*
Rusty-margined Flycatcher *Myiozetetes cayanensis*
Social Flycatcher *Myiozetetes similis*
Grey-capped Flycatcher *Myiozetetes granadensis*
Streaked Flycatcher *Myiodynastes maculatus solitarius* (A)
Golden-crowned Flycatcher *Myiodynastes chrysocephalus**
Piratic Flycatcher *Legatus leucophaius*
Variegated Flycatcher *Empidonax varius* (A)
Sulphur Flycatcher *Tyrannopsis sulphurea*
Fork-tailed Flycatcher *Tyrannus savana*
Eastern Kingbird *Tyrannus tyrannus* (N)
Tropical Kingbird *Tyrannus melancholicus*
White-winged Swallow *Tachycineta albiventer*
Brown-chested Martin *Progne tapera fusca* (A)
White-banded Swallow *Atticora fasciata*
White-thighed Swallow *Neochelidon tibialis*
Southern Rough-winged Swallow *Stelgidopteryx ruficollis*
Violaceous Jay *Cyanocorax violaceus*
Black-capped Donacobius *Donacobius atricapillus*
Thrush-like Wren *Campylorhynchus turdinus*
Coraya Wren *Thryothorus coraya*
House Wren *Troglodytes aedon*
White-breasted Wood-wren *Henicorhina leucosticta*
Southern Nightingale-wren *Microcerclus marginatus*
Tropical Mockingbird *Mimus gilvus*
Swainson's Thrush *Catharus ustulatus* (N)
Pale-eyed Thrush *Platycichla leucops**
Black-billed Thrush *Turdus ignobilis*
Lawrence's Thrush *Turdus lawrencii**
Bare-eyed Thrush *Turdus nudigenis**
White-necked Thrush *Turdus albicollis*
Long-billed Gnatwren *Ramphocanurus melanurus**
Tropical Gnatcatcher *Polioptila plumbea**
Rufous-browed Peppershrike *Cyclarhis gujanensis*
Red-eyed Vireo *Vireo olivaceus* (N)
Brown-headed Greenlet *Hylophilus brunneiceps**
Tawny-crowned Greenlet *Hylophilus ochraceiceps*
Shiny Cowbird *Molothrus bonariensis*

Giant Cowbird *Molothrus oryzivora*
 Crested Oropendola *Psarocolius decumanus*
 Green Oropendola *Psarocolius viridis*
 Russet-backed Oropendola *Psarocolius angustifrons*
 Amazonian Oropendola *Gymnostinops bifasciatus*
 Yellow-rumped Cacique *Cacicus cela*
 Red-rumped Cacique *Cacicus haemorrhouss* *
 Solitary Cacique *Cacicus solitarius*
 Ecuadorian Cacique *Cacicus sclateri* *
 Yellow-hooded Blackbird *Agelaius icterocephalus* *
 Moriche Oriole *Icterus chrysocephalus*
 Blackpoll Warbler *Dendroica striata* (N)
 American Redstart *Setophaga ruticilla* (N)
 Northern Waterthrush *Seiurus noveboracensis* (N)
 Mourning Warbler *Oporornis philadelphica* (N)
 Canada Warbler *Wilsonia canadensis* (N)
 Buff-rumped Warbler *Basileuterus fulvicauda* *
 Bananaquit *Coereba flaveola*
 Green Honeycreeper *Chlorophanes spiza*
 Purple Honeycreeper *Cyanerpes caeruleus* *
 Blue Dacnis *Dacnis cayana*
 Black-faced Dacnis *Dacnis lineata*
 Yellow-bellied Dacnis *Dacnis flaviventer* *
 Swallow Tanager *Tersina viridis*
 White-vented Euphonia *Euphonia minuta*
 Thick-billed Euphonia *Euphonia laniirostris*
 Rufous-bellied Euphonia *Euphonia rufiventris*
 White-lored Euphonia *Euphonia chrysopasta* *
 Opal-rumped Tanager *Tangara velia*
 Opal-crowned Tanager *Tangara callophrys* *
 Paradise Tanager *Tangara chilensis*
 Green-and-gold Tanager *Tangara schrankii* *

Yellow-bellied Tanager *Tangara xanthogastra*
 Masked Tanager *Tangara nigrocincta*
 Turquoise Tanager *Tangara mexicana*
 Blue-grey Tanager *Thraupis episcopus*
 Palm Tanager *Thraupis palmarum*
 Silver-beaked Tanager *Ramphocelus carbo*
 Masked Crimson Tanager *Ramphocelus nigrogularis*
 Summer Tanager *Piranga rubra* (N)
 Scarlet Tanager *Piranga olivacea* (N)
 Red-crowned Ant-tanager *Habia rubica*
 White-lined Tanager *Tachyphonus rufus* *
 Fulvous-crested Tanager *Tachyphonus surinamus*
 White-shouldered Tanager *Tachyphonus luctuosus*
 Yellow-backed Tanager *Hemithraupis flavicollis*
 Magpie Tanager *Cissopis leveriana*
 Blue-black Grosbeak *Cyanocompsa cyanoides* *
 Buff-throated Saltator *Saltator maximus*
 Greyish Saltator *Saltator coerulescens*
 Slate-colored Grosbeak *Saltator grossus* *
 Red-capped Cardinal *Paroaria gularis*
 Black-striped Sparrow *Arremonops conirostris* *
 Pectoral Sparrow *Arremon taciturnus* *
 Lesser Seed-finch *Oryzoborus angolensis*
 Lined Seedeater *Sporophila lineola* *
 Lesson's Seedeater *Sporophila bouvronides* *
 Black-and-white Seedeater *Sporophila luctuosa*
 Yellow-bellied Seedeater *Sporophila nigricollis*
 Ruddy-breasted Seedeater *Sporophila minuta*
 Chestnut-bellied Seedeater *Sporophila castaneiventris*
 Yellow-browed Sparrow *Ammodramus aurifrons*
 Blue-black Grassquit *Volatinia jacarina*