

## Conservation value of a *Garua* forest in the dry season: a bird survey in Reserva Ecológica de Loma Alta, Ecuador

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La recientemente creada Reserva Loma Alta de 750 ha de superficie protege un relicto bosque húmedo premontano. La misma constituye un pilar fundamental para el sostenimiento de este tipo de ambiente cada vez más alterado y en peligro de desaparición, en especial al encontrarse a 25 km al sur del Parque Nacional Machalilla constituyendo un eslabón más en el corredor biológico que sigue de norte a sur la cordillera Chongón-Colonche con este tipo de ambiente. La reserva se encuentra amenazada de un eminente aislamiento ecológico debido a la continua actividad antrópica desconcientizada y destructiva en sus periferias como consecuencia de las invasiones de tierra para cultivo, la intromisión de cazadores y/o la presencia de madereros. Recientes relevamientos ornitológicos demuestran la necesidad de su estricta conservación especialmente dado a la existencia de especies de aves consideradas en peligro de extinción que no han sido registradas anteriormente y al considerable número de especies existentes. Este artículo trata sobre la presencia de esas aves amenazadas, aquellas nuevas en su distribución representando habitats de la nuboselva andina o del Chocó y una lista completa del inventario ornitológico efectuado.

### Introduction

On 24 August 1996, the rural community of Loma Alta, Guayas, Ecuador established an ecological reserve in the Colonche Mountains<sup>13</sup>. For the local campesinos, the impetus for protecting nearly 1,000 ha of moist premontane forest was twofold: to defend their land and to conserve water<sup>1,3</sup>. In 1937, the Law of the Comunas gave the villagers of Loma Alta legislation which has eventually led to the establishment and guarding of the new Reserva Ecológica de Loma Alta.

With the reserve established, the community and People Allied for Nature (PAN) began exploring the biological diversity of the remaining forest. For several reasons, birds were selected to monitor ecosystem health in the Loma Alta reserve. Birds are highly sensitive and responsive to changes in resource availability and habitat quality, and so useful for long-term monitoring of environmental impact from land-use decisions in and around a protected forest<sup>5</sup>. Additionally, birds are relatively easy to identify, in comparison with other taxa, well documented in the literature<sup>16</sup> and good museum collections of species occurring in the region exist. Lists of bird species of conservation concern in the Tumbesian region have been prepared<sup>4,5</sup> and other forest remnants in the Cordillera de la Costa and adjacent areas of southwest Ecuador (e.g. Colonche Mts.) have been surveyed by Conservation International's RAP team<sup>14</sup> and other workers, providing a base for comparison.

The lower reaches of the moist forests of Cerro La Torre and the riparian forests of the Río California, two distinctive ecological zones in Loma Alta's hills, were surveyed for birds during July–August of the early 1990s<sup>9</sup>. Visibility during these months is generally poor because of coastal fog. While rapid surveys of birds have been made in the Colonche hills<sup>14</sup>, no bird surveys have been made in Loma Alta during the winter months (November–January) when visibility is ideal and drought may cause local movement of birds to the highlands. To fill this gap in the conservation knowledge of the area, ornithologists and Earthwatch volunteers surveyed birds in the new reserve.

### Methods

#### Study site

The Reserva Ecológica de Loma Alta (RELA) is in the northern third of the Comuna of Loma Alta, 17 km inland from the Pacific Ocean, due west of Manglaralto. In sharp contrast to the semi-desert conditions of the lowlands, the Colonche Hills contain relict patches of forest classified as premontane moist<sup>9</sup>. At altitudes above 400 m this premontane moist forest contains more than 70 tree species and a great diversity of epiphytic orchids and bromeliads. Becker & Elao<sup>2</sup> call this low elevation cloudforest a garúa forest to denote the positive feedback loop between the forest vegetation and the formation of tropical mists (garúa). Protection of such garúa forests are important for water supply in the lowlands<sup>1</sup>.

### Mist-netting and surveys

Two teams of Earthwatch volunteers from Europe and North America assisted ornithologists from Argentina, USA and Ecuador with mist-netting and surveying of birds in the new garúa forest reserve. We mist-netted on 14 days during December 1996. Effort to sample the understory bird community was rotated among four locations in the forest by moving a set of ten 12 m x 2.6 m, 36 mm mesh mist-nets from site-to-site. Nets were spaced 25–50 m apart along little-used foot- and wildlife trails. With the exception of the fourth site, nets were operated for three consecutive mornings, closed for one week, and then operated again for three mornings. Mist-nets were operated from 06h30–12h00 and checked every 30 minutes. Birds were removed from the nets, placed in cloth bags and brought to a banding station where they were identified, photographed, banded and measured using standard methods<sup>15</sup>.

Each afternoon and on ten mornings, small teams hiked trails within a 5 km radius of the research cabin (01°49'S 80°36'W) recording birds by species, location in the canopy and activity at time of observation. Birds observed during hikes between the field site and the village of El Suspiro were also recorded. All identifications were made by the authors with the exception of three made by experienced volunteers.

### Analysis

An abundance category was given to each species recorded in the study area (above 400 m a.s.l.) based on the frequency of capture in nets and sight records. Using lists of species of concern for the Tumbesian region<sup>4,5</sup>, a preliminary assessment of the avifaunal conservation value of Loma Alta's new reserve during the driest month of the year is made. Taxonomic order in Appendix 1 follows Stotz *et al.*<sup>17</sup>.

### Results

During 204 person-hours of birdwatching and 29,040 mist-net m<sup>2</sup> hours between 10 December 1996 and 2 January 1997, 198 different species were recorded. Of these, 161 were in the premontane moist forest of the Reserva Ecológica de Loma Alta above 400 m, while the remaining 37 were observed in lowlands and transitional forests during mule treks to and from the reserve (Appendix 1). Mist-netting in the reserve resulted in 536 captures of birds: 465 new individuals of 54 different species and 71 recaptures (Appendix 1).

Seven species found in the reserve are currently listed as threatened and five are listed as near-threatened<sup>9</sup> as follows:

### Fasciated Tiger-heron *Tigrisoma fasciatum* (near-threatened)

One bird was seen at a small freshwater pool along the southern riparian boundary of the new reserve (250 m)

### Grey-backed Hawk *Leucopternis occidentalis* (endangered)

Pairs were seen daily soaring over ravines or resting in trees, usually adjacent to ravines.

All sightings were above 400 m and were associated with moist forest areas. Vocalizations, especially a high-pitched *KEEEoooooowww* cry with the first half louder than the second, were typical during soaring.

### Rufous-headed Chachalaca *Ortalis erythroptera* (vulnerable)

While heard frequently from the research cabin, they were not seen. Calls came from ravine bottoms above 300 m in transitional and premontane moist forest.

### Ochre-bellied Dove *Leptotila ochraceiventris* (vulnerable)

A single bird heard repeatedly while hiking through dry tropical forest at c. 250 m.

### Red-masked Parakeet *Aratinga erythrogenys* (near-threatened)

Flocks of up to 30 were seen on six occasions during the study. They were found roosting in trees (Lauraceae) currently being cut by ranchers invading the highlands. All sightings were above 500 m.

### Grey-cheeked Parakeet *Brotogeris pyrrhoptera* (near-threatened)

A single flock of approximately ten birds was heard and seen distantly flying over degraded pasture at 600 m.

### Little Woodstar *Acestrura bombus* and Esmeraldas Woodstar *Acestrura berlepschi* (endangered)

Woodstars were observed in large numbers (100s of birds) taking advantage of abundant nectar resources provided by flowering *Psychotria* shrubs. Identification was difficult as few birds were males in breeding plumage. Two female *Acestrura* were netted, but standard measurements (Table 1) and field marks did not lead to conclusive identification of the second bird, possibly *Acestrura berlepschi*. While the first, *Acestrura bombus* had a cinnamon-coloured superciliary and was completely tawny-cinnamon on chest and belly, the second had a white superciliary and belly with pale buffy feathers on its flanks and throat. All sightings were above 500 m on the windward (moist) side of the hills.

**Grey-breasted Flycatcher** *Lathrotriccus griseipectus* (vulnerable)

All sightings and netted birds were above 400 m in premontane moist forest. Fairly common, especially by voice once the song was known. Observed in the understory to mid-canopy often sitting stationary, once for over 10 minutes.

**Slaty Becard** *Pachyramphus spodiurus* (near-threatened)

Seen several times in the mid-canopy (c.10 m.) of premontane forest above 400 m.

**Ochraceous Attila** *Attila torridus* (vulnerable)

A pair observed in a vine tangle in premontane moist forest at 625 m. When foraging or perching separately, they called to each other like trogons.

**Scaled Fruiteater** *Ampelioides tschudii* (near-threatened)

Four sightings involved at least two individuals, a male and a female. The birds were observed feeding on fruits near the research cabin (575m). One was mist-netted on the ridge top (750 m).

During the December survey, 18 Tumbesian endemic species were found in the Reserva Ecológica de Loma Alta (Appendix 1). Eight were species of concern. Of the others, Grey-and-gold Warbler *Basileuterus fraseri* and Pacific Parrotlet *Forpus coelestis* were the most common, while the other eight species were seen only once or twice.

Thirteen bird species found in December were new to the comprehensive list of birds for the Chongon-Colonche Hills<sup>10</sup>. As indicated in Appendix 1, these were Fasciated Tiger-heron, Andean Emerald *Amazilia franciae*, Brown Violetear *Colibri delphinae*, White-necked Jacobin *Florisuga mellivora*, Tawny-throated Leaf-tosser *Sclerulus mexicanus*, Russet Antshrike *Thamisthes anabatinus*, Scaled Fruiteater, Streak-necked Flycatcher *Mionectes striatacolis*, Song Wren *Cyphorhinus phaeocephalus*, White-throated Thrush *Turdus assimilis*, Pale-vented Thrush *Turdus obsoletus*, White-lined Tanager *Tachyphonus rufus*, and Yellow-throated Bush Tanager *Chlorospingus flavigularis*. Many of these new species are more typically associated with the Chocó and South Central Andean Endemic Bird Areas (EBAs)<sup>4</sup>.

*Psychotria* sp. flowers attracted nectar-feeding birds to the ridges and western slopes of La Torre mountain. Hundreds of hummingbirds of 17 different species displayed various foraging and nectar defense strategies. Sub-adult Green-crowned Brilliants *Heliodoxa jacula* called from perches in the forest. They had buffy orange malar and chin

patches and were dark grey below heavily spotted with green, not a precise match with descriptions in field guides, evoking the temporary hypothesis that we had found a new species. Upon viewing photos, experts on hummingbirds assured us that they were immature *H. jacula*.

Northern Waterthrush *Seiurus noveboracensis* and Swainson's Thrush *Catharus ustulatus* also use the garúa forest.

**Discussion**

The forests of western Ecuador are important for conservation<sup>12</sup> because they contain many endemic species<sup>7</sup> and are rapidly being cleared for farming and ranching<sup>6</sup>. Loma Alta's garúa forest reserve provides refuge for 12 birds of critical concern<sup>5</sup> (seven threatened and five near-threatened) giving it international conservation value, in addition to its local importance as a water resource for villages in the lowlands<sup>1</sup>. In Birdlife International's recent analysis<sup>8</sup>, only seven sites in Ecuador (most much larger than RELA) and 30 in Central and South America were found to protect seven or more threatened bird species.

Populations in small reserves are vulnerable to extinction when isolated<sup>11</sup>. Loma Alta's reserve is small, but it is relatively close to other patches of moist forest in the Colonche Hills. When adjacent to larger reserves, small reserves may help maintain populations of mobile species. Machalilla National Park is only 25 km north of Loma Alta, and is currently one of two internationally recognised protected areas for birds endemic to the Tumbesian region of southern Ecuador and north-west Peru<sup>15</sup>. While small forest patches and reserves have been found to be sinks rather than sources for less mobile animals<sup>11</sup>, they appear, in this case, to play a role in sustaining regional diversity by providing seasonal food resources to mobile guilds of pollinators such as hummingbirds.

Regional and local migrations of birds are poorly described in the Neotropics<sup>17</sup>. Birds are responsive to changes in resource availability and habitat quality<sup>8</sup> so local migrations to moist forest would be expected during dry seasons. There were significant numbers of restricted-range dry forest species in RELA's moist forest suggesting that some of the dry forest endemics may move up to the highland moist forests during droughts and dry seasons. Further mist-netting and surveys in May and August (after the rains and during the mist season) should reveal which species use the garúa forest during the dry season.

The Chocó and Andean species found in the reserve may either migrate to the moist highland

forests or represent resident populations. Since many of these species are absent from lists made during July and August<sup>10</sup>, and CDB did not record them during ecological studies conducted in July and August of 1995 and 1996 they are probably migrants. Cold conditions in the Andean highlands during December–January, with abundant rain and hail, and in consequence relatively low quantities of flowers, could encourage departures of birds from the highlands. Further study is needed to verify this theory. Flowering *Psychotria* in the garúa forest ecosystem attracts many hummingbirds, a species guild known to be relatively nomadic and capable of regional migration<sup>17</sup>.

Rural communities could augment the security of birds and other species in the Tumbesian region by establishing forest preserves within the nationally declared Bosque Protector Chongon-Colonche (protective forest), a strategy that would protect both their local water resources and fauna and flora<sup>1</sup>. Currently the Colonche hill forests are severely threatened by clearance for agriculture and ranching. We encourage other communities to follow the example set by the Comuna of Loma Alta and hope that international conservation organisations and government agencies will actively support forest preservation by villagers and local conservation groups. We expect that the endemic and threatened species at RELA will attract birdwatchers and naturalists to the eco-tourism program recently established by PAN and several families in Loma Alta.

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Those wanting to visit the Loma Alta Ecological Reserve should contact Claude Nathan at People Allied for Nature, 225 West 34th St. Suite 1816, New York, NY 10122-1892 for details on access. In Ecuador, managers of Hotel Marakaya in Manglaralto will arrange personalized expeditions to the hill forest reserve. Earthwatch volunteers are needed at the Loma Alta banding station each December. For Earthwatch UK (Oxford) call tel: 01865 516366 or 01865 311600, and in the USA call tel: 1-800-776-0188.

People Allied for Nature (PAN), a grass-roots conservation charity with the mission of helping local communities preserve tropical forest, began working with Loma Alta in 1994. They studied the history of the Comuna and the conflicts over land-use in the highlands<sup>3</sup>, and completed an ecosystem-level study<sup>1</sup> comparing fog capture in the forest with that in pasture at the same elevation and orientation. The forest trapped more than ten times as much water from coastal fog banks as the pasture. It was estimated that conversion of forest to pasture cost the community about \$250,000 in water losses per annum. These findings and PAN's success at securing support for delineation of a forest reserve, for payment and training of guards, and for litigation against the ranchers revived the community's determination to protect their distant highland forests and eventually led to the establishment and safeguarding of the new Reserva Ecológica de Loma Alta tenure to a 6,842 ha watershed that included 1,650 ha in the Colonche Hills. Beginning in the late 1970s, cattle ranchers began to deforest these upper reaches of Loma Alta's watershed. Hoping to stop the theft and destruction of their forest, Loma Alta's leaders requested that the national government designate their highlands as Bosque Protector (protective forest). In 1987, the government complied and upheld the community's tenure rights. The Ecuadorian military briefly defended the community's new Bosque Protector, but when soldiers were called to Peru the cattle ranchers resumed their advance. By December 1996, they had cleared more than 200 ha of moist forest belonging legally to the Comuna of Loma Alta.

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**Table 1.** Measurements of two *Acestrura* individuals mist-netted at Loma Alta. It is suspected that the second female was *Acestrura berlepschi*.

	Female <i>Acestrura bombus</i>	Female <i>Acestrura</i> sp.
Weight (g)	1.8	2.5
Wing (mm)	29.5	30.0
Tail (mm)	15.0	14.0
Culmen (mm)	12.8	13.6

**Appendix I.** Birds seen, heard or mist-netted (n) in Reserva Ecológica de Loma Alta, Guayas, Ecuador in December 1996.

**Codes** beside the common name refer to conservation status<sup>5</sup>, range, and migratory status of the species: Ec = Tumbesian endemic (restricted-range<sup>6</sup>), E = endangered, V = vulnerable, NT = near-threatened, C = Chocó species, A = Andean montane species, Nm = Neararctic migrant.

**Conservation Priority**<sup>7</sup> is given beside the scientific name (1 = urgent, 2 = high, 3 = medium, 4 = low).

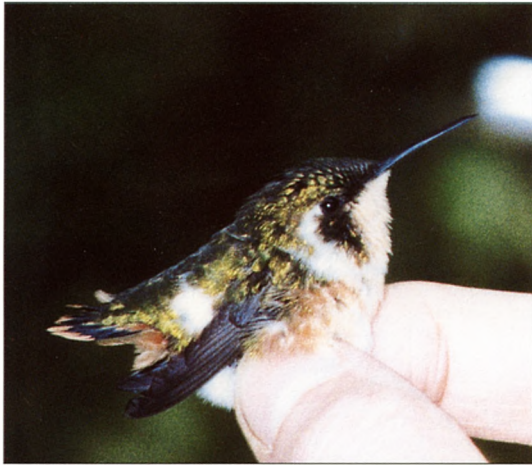
**Habitats** include "Lowlands" (degraded dry forest, pastures and scrub areas below 250 m); "Riparian" (stream or riverside forest, 200–300 m); "Transitional" (250–400 m, dry forest intergrading with premontane moist); "Uplands" (premontane moist forest above 400 m).

**Abundance:** Common species were seen or heard every day. Fairly common species were seen at least ten times during the one month study or several times in large flocks. Uncommon species had encounter rates of less than five and rare species were seen no more than twice during the survey. Additions to N. Krabbe's regional list<sup>10</sup> are indicated by (new).

English name (code)	Habitat	Abundance
Scientific name (CP)		
Little Tinamou <i>Crypturellus soui</i> (4)	uplands	common
Fasciated Tiger-heron (NT) <i>Tigrisoma fasciatum</i>	riparian	rare
Turkey Vulture <i>Cathartes aura</i> (4)	all altitudes	common

Black Vulture <i>Coragyps atratus</i> (4)	all altitudes	common	Striped Cuckoo <i>Tapera naevia</i> (4)	uplands	rare (heard)
King Vulture <i>Sarcorampus papa</i> (4)	uplands	rare	Western Peruvian Screech-owl <i>Otus roboratus</i> (4)	uplands	fairly common
Swallow-tailed Kite <i>Elanoides forficatus</i> (4)	uplands	fairly common	Crested Owl <i>Lophostrix cristata</i> (4)	uplands	uncommon
Plumbeous Kite <i>Ictinia plumbea</i> (4)	uplands	fairly common	Spectacled Owl <i>Pulsatrix perspicillata</i> (4)	uplands	uncommon
Crane Hawk <i>Geranospiza caerulescens</i> (4)	uplands	uncommon	Pacific (Ferruginous) Pygmy-owl <i>Glaucidium peruanum</i> (4)	uplands	common
Bicolored Hawk <i>Accipiter bicolor</i> (4)	uplands	rare	Mottled Owl <i>Ciccaba virgata</i> (4)	uplands	fairly common
Grey-backed Hawk (Ec, E) <i>Leucopternis occidentalis</i> (2)	uplands	common	Lesser Nighthawk <i>Chordeiles acutipennis</i> (4)	uplands	uncommon
Great Black Hawk <i>Buteogallus urubitinga</i> (4)	uplands	uncommon	Pauraque <i>Nyctidromus albicollis</i> (4)	uplands	common
Grey Hawk <i>Buteo nitidus</i> (4)	uplands	uncommon	White-collared Swift <i>Streptoprocne zonaris</i> (4)	uplands	fairly common
Ornate Hawk-eagle <i>Spizaetus ornatus</i> (4)	transitional	uncommon	Short-tailed Swift <i>Chaetura brachyura</i> (4)	uplands	common
Black Hawk-eagle <i>Spizaetus tyrannus</i> (4)	uplands	uncommon	Grey-rumped Swift <i>Chaetura cinereiventris</i> (4)	uplands	uncommon (n)
Crested Caracara <i>Caracara plancus</i> (4)	all altitudes	fairly common	Little Hermit <i>Phaethornis longuemareus</i> (4)	uplands	rare (n)
Laughing Falcon <i>Herpetotheres cachinnans</i> (4)	uplands/transitional	common	Long-tailed Hermit <i>Phaethornis superciliosus</i> (4)	transitional-uplands	common (n)
Barred Forest-falcon <i>Micrastur ruficollis</i> (4)	uplands	fairly common	White-necked Jacobin <i>Florisuga mellivora</i> (4)	uplands	rare (n) (new)
Collared Forest-falcon <i>Micrastur semitorquatus</i> (4)	uplands	fairly common	Brown Violetear (A) <i>Colibri delphinae</i> (4)	uplands	rare (n) (new)
American Kestrel <i>Falco sparverius</i> (4)	uplands	uncommon	Green-breasted Mango <i>Anthracoceros prevostii</i> (4)	uplands	uncommon
Rufous-headed Chachalaca (Ec, V) <i>Ortalis erythroptera</i> (2)	uplands	fairly common	Blue-tailed Emerald <i>Chlorostibon melisugus melanorhynchus</i> (4)	uplands	fairly common (n)
Crested Guan <i>Penelope purpurascens</i> (3)	uplands	uncommon	Green-crowned Woodnymph <i>Thalurania (furcata) fannyi</i> (4)	uplands	fairly common (n)
Rufous-fronted Wood-quail <i>Odontophorus erythrops</i> (2)	uplands	fairly common	Violet-bellied Hummingbird <i>Damophila julie</i> (4)	uplands	common (n)
Pale-vented Pigeon <i>Columba cayennensis</i> (4)	uplands	uncommon	Amazilia Hummingbird <i>Amazilia amazilia</i> (4)	uplands	common (n)
Rock Pigeon <i>Columba livia</i> (4)	lowlands	common	Andean Emerald (A) <i>Amazilia franciae</i> (4)	uplands	fairly common (n) (new)
Ruddy Pigeon <i>Columba subvinacea</i> (4)	lowlands to upland	common	Rufous-tailed Hummingbird <i>Amazilia tzacatl</i> (4)	uplands	common (n)
West Peruvian Dove <i>Zenaida (asiatica) meloda</i> (4)	uplands	uncommon	Speckled Hummingbird (A) <i>Adelomyia melanogenys</i> (4)	uplands	common (n)
Croaking Ground-dove <i>Columbina cruziana</i> (4)	lowlands	common	Green-crowned Brilliant (A) <i>Heliodoxa jacula</i> (4)	uplands	common (n)
Ecuadorian Ground-dove (Ec) <i>Columbina buckleyi</i> (4)	lowlands	common	Purple-crowned Fairy <i>Heliophryx barroti</i> (4)	uplands	rare
Ochre-bellied Dove (Ec, V) <i>Leptotila ochraceiventris</i> (2)	transitional	rare (heard once)	Long-billed Starthroat <i>Helimaster longirostris</i> (4)	uplands	rare
Pallid Dove <i>Leptotila (rufaxilla) pallida</i> (4)	uplands	uncommon	Short-tailed Woodstar (Ec) <i>Myrmia micrura</i> (4)	uplands	rare
White-tipped Dove <i>Leptotila verreauxi</i> (4)	uplands	uncommon	Little Woodstar (Ec, En) <i>Acestrura bombus</i> (3)	uplands	common (n)
Ruddy Quail-dove <i>Geotrygon montana</i> (4)	uplands	common	Esmeraldas Woodstar (Ec, En) <i>Acestrura berlepschi</i> (2)	uplands	fairly common
Red-masked Parakeet (Ec, NT) <i>Aratinga erythrogenys</i> (3)	uplands	fairly common	Collared Trogon <i>Trogon collaris</i> (4)	uplands	common (n)
Pacific Parrotlet (Ec) <i>Forpus coelestis</i> (4)	lowlands	common	Black-tailed Trogon <i>Trogon melanurus</i> (4)	uplands	uncommon
Grey-cheeked Parakeet (Ec, NT) <i>Brotogeris pyrrhopterus</i> (2)	uplands	rare	Violaceous Trogon <i>Trogon violaceus</i> (4)	transitional	fairly common
Bronze-winged Parrot <i>Pionus chalcopterus</i> (3)	transitional-uplands	common	Blue-crowned Motmot <i>Momotus momota</i> (4)	lowlands	uncommon
Squirrel Cuckoo <i>Piaya cayana</i> (4)	transitional	uncommon	White-necked Puffbird <i>Notharchus macrorhynchus</i> (4)	uplands	rare
Smooth-billed Ani <i>Crotaphaga ani</i> (4)	lowlands (scrub)	fairly common	Barred Puffbird <i>Nystalus radiatus</i> (4)	uplands	rare
Groove-billed Ani <i>Crotaphaga sulcirostris</i> (4)	lowlands (scrub)	fairly common	White-whiskered Puffbird <i>Malacaptia panamensis</i> (4)	uplands	rare

Red-headed Barbet				Immaculate Antbird		
<i>Eubucco bourcierii</i> (4)	uplands	uncommon		<i>Myrmeciza immaculata</i> (3)	uplands	rare
Crimson-rumped Toucanet(A)				Black-headed Antthrush		
<i>Aulacorhynchus haematopygus</i> (4)	uplands	common		<i>Formicarius nigricapillus</i> (3)	uplands	uncommon
Pale-mandibled Araçari				Golden-faced Tyrannulet		
<i>Pteroglossus erythropygius</i> (4)	uplands	fairly common		<i>Zimmerius viridiflavus</i> (4)	uplands	rare (n)
Chocó Toucan				Southern Beardless-tyrannulet		
<i>Ramphastos brevis</i> (3)	uplands	common		<i>Camptostoma obsoletum</i> (4)	uplands	uncommon
Chestnut-mandibled Toucan				Yellow-crowned Tyrannulet		
<i>Ramphastos swainsonii</i> (3)	uplands	common		<i>Tyrannulus elatus</i> (3)	uplands	rare
Olivaceous Piculet				Pacific Elaenia (Ec)		
<i>Picumnus olivaceus</i> (4)	uplands	uncommon		<i>Myiopagis subplacens</i> (3)	uplands	uncommon
Ecuadorian Piculet (Ec)				Greenish Elaenia		
<i>Picumnus sclateri</i> (4)	uplands	rare		<i>Myiopagis viridicata</i> (4)	uplands	uncommon (n)
Black-cheeked Woodpecker				Yellow-bellied Elaenia		
<i>Melanerpes pucherani</i> (4)	uplands	fairly common		<i>Elaenia flavogaster</i> (4)	lowlands	insufficient data
Scarlet-backed Woodpecker				Rufous-winged Tyrannulet (A)		
<i>Veniliornis callonatus</i> (4)	uplands	fairly common		<i>Mecocerculus calopterus</i> (3)	uplands	rare
Red-rumped Woodpecker				Tawny-crowned Pygmy-tyrant		
<i>Veniliornis kirkii</i> (4)	uplands	uncommon		<i>Euscarthmus meloryphus</i> (4)	uplands	uncommon
Golden-olive Woodpecker				Ochre-bellied Flycatcher		
<i>Piculus rubiginosus</i> (4)	transitional-uplands	fairly common		<i>Mionectes oleagineus</i> (4)	uplands	common (n)
Lineated Woodpecker				Olive-striped Flycatcher (A)		
<i>Dryocopus lineatus</i> (4)	uplands	common		<i>Mionectes olivaceus</i> (4)	uplands	fairly common
Guayaquil Woodpecker				Streak-necked Flycatcher (A)		
<i>Campephilus guayaquilensis</i> (3)	uplands	fairly common		<i>Mionectes striaticollis</i> (4)	uplands	fairly common(n) (new)
Plain-brown Woodcreeper				Scale-crested Pygmy-tyrant		
<i>Dendrocincla fuliginosa</i> (4)	uplands	fairly common (n)		<i>Lophotriccus pileatus</i> (4)	uplands	fairly common (n)
Olivaceous Woodcreeper				White-throated Spadebill (A)		
<i>Sittasomus griseicapillus</i> (4)	uplands	fairly common (n)		<i>Platyrinchus mystaceus</i> (4)	uplands	fairly common (n)
Wedge-billed Woodcreeper				Sulphur-rumped Flycatcher		
<i>Glyphorhynchus spirurus</i> (4)	uplands	common (n)		<i>Myiobius sulphureipygius</i> (4)	uplands	fairly common (n)
Spotted Woodcreeper				Tropical Pewee		
<i>Xiphorhynchus erythropygius</i> (4)	uplands	fairly common (n)		<i>Contopus cinereus</i> (4)	uplands	fairly common
Red-billed Scythebill				Smoke-colored Pewee (A)		
<i>Campylorhamphus trochilostrius</i> (4)	uplands	uncommon		<i>Contopus fumigatus</i> (4)	uplands	uncommon
Pale-legged Hornero				Grey-breasted Flycatcher (Ec, V)		
<i>Furnarius leucopus cinnamomeus</i> (4)	lowlands	common		<i>Empidonax griseipectus</i> (2)	uplands	fairly common (n)
Slaty Spinetail				Acadian Flycatcher (Nm)		
<i>Synallaxis brachyura</i> (4)	uplands	uncommon		<i>Empidonax virescens</i>	uplands	rare
Red-faced Spinetail (A)				Vermilion Flycatcher		
<i>Cranioleuca erythrops</i> (3)	uplands	uncommon		<i>Pyrocephalus rubinus</i> (4)	lowlands	common
Pacific Tuftedcheek (A)				Masked Water-tyrant		
<i>Pseudocolaptes lawrencii johnsoni</i> (3)	uplands	rare		<i>Fluvicola nengeta</i> (4)	lowlands	insufficient data
Scaly-throated Foliage-gleaner (A)				Ochraceous Attila (Ec, V)		
<i>Anabacerthia variegataiceps</i> (3)	uplands	fairly common		<i>Attila torridus</i> (2)	uplands	rare
Buff-throated Foliage-gleaner				Sooty-crowned Flycatcher (Ec)		
<i>Automolus ochrolaemus</i> (4)	uplands	uncommon		<i>Myiarchus phaeocephalus</i> (4)	uplands	uncommon
Plain Xenops				Dusky-capped Flycatcher		
<i>Xenops minutus</i> (4)	uplands	fairly common (n)		<i>Myiarchus tuberculifer</i> (4)	uplands	rare (n)
Streaked Xenops				Boat-billed Flycatcher		
<i>Xenops rutilans</i> (3)	uplands	uncommon		<i>Megarhynchus bitangua</i> (4)	uplands	uncommon
Scaly-throated Leaf-tosser				Social Flycatcher		
<i>Sclerurus guatemalensis</i> (3)	uplands	fairly common (n)		<i>Myiozetetes similis</i> (4)	lowlands	fairly common
Tawny-throated Leaf-tosser (C)				Baird's Flycatcher (Ec)		
<i>Sclerulus mexicanus</i> (4)	uplands	fairly common (new)		<i>Myiodynastes bairdii</i> (4)	uplands	rare
Great Antshrike				Streaked Flycatcher		
<i>Taraba major transaneanus</i> (4)	lowlands	insufficient data		<i>Myiodynastes maculatus</i> (4)	transitional	insufficient data
Collared Antshrike (Ec)				Tropical Kingbird		
<i>Sakephorus bernardi</i> (3)	lowlands	insufficient data		<i>Tyrannus melancholicus</i> (4)	lowlands	common
Western Slaty Antshrike				Snowy-throated Kingbird		
<i>Thamnophilus punctatus atrinucha</i> (4)	lowlands	insufficient data		<i>Tyrannus niveigularis</i> (4)	lowlands	common
Russet Antshrike (C)				One-colored Becard		
<i>Thamnistes anabatinus</i> (4)	uplands	rare (new)		<i>Pachyrhamphus homochrous</i> (4)	uplands	uncommon
Plain Antwren				Slaty Becard (Ec, NT)		
<i>Dysithamnus mentalis</i> (4)	uplands	fairly common (n)		<i>Pachyrhamphus spodiurus</i> (3)	uplands	rare
Slaty Antwren				Masked Tityra		
<i>Myrmotherula schisticolor</i> (4)	uplands	common (n)		<i>Tityra semifasciata</i> (4)	transitional	uncommon
Dot-winged Antwren				Thrush-like Schiffornis		
<i>Microrhoptias quixensis</i> (4)	uplands	rare		<i>Schiffornis turdinus</i> (4)	uplands	fairly common (n)
White-backed Fire-eye				White-bearded Manakin		
<i>Pyriglena leuconota pacifica</i> (3)	uplands	fairly common (n)		<i>Manacus manacus</i> (4)	uplands	fairly common (n)



Top left: Little Woodstar  
*Aeestrura bombus*.  
(C. Dustin Becker)

Top right: Grey-breasted  
Flycatcher *Lathrotriccus*  
*griseipectus*. (C. Dustin  
Becker)

Left: Scaled Fruiteater  
*Ampelioides tschudii*.  
(Tan Davis)

Bottom left: Garúa forest  
at 650 m. (C. Dustin  
Becker)





Scaled Fruiteater (A, NT)				Tropical Parula		
<i>Ampelioides tschudii</i> (3)	uplands	uncommon (n) (new)		<i>Parula pitiayumi</i> (4)	uplands	fairly common
Grey-breasted Martin				Northern Waterthrush (Nm)		
<i>Progne chalybea</i> (4)	lowlands to uplands	fairly common		<i>Seiurus noveboracensis</i> (4)	uplands	uncommon (n)
Blue-and-white Swallow				Black-lored Yellowthroat		
<i>Notiochelidon cyanoleuca</i> (4)	lowlands	insufficient data		<i>Geothlypis aequinoctialis auricularis</i> (4)	lowlands	insufficient data
Fasciated Wren				Slate-throated Whitestart (A)		
<i>Campylorhynchus fasciatus</i> (4)	lowlands	insufficient data		<i>Myioborus miniatus</i> (4)	uplands	common (n)
House Wren				Grey-and-gold Warbler (Ec)		
<i>Troglodytes aedon</i> (4)	lowlands	insufficient data		<i>Basileuterus fraseri</i> (4)	uplands	common (n)
Mountain Wren (A)				Bananaquit		
<i>Troglodytes solstitialis</i> (4)	uplands	rare (n)		<i>Coereba flaveola</i> (4)	uplands	common (n)
Grey-breasted Wood-wren (A)				Rufous-browed Peppershrike		
<i>Henicorhina leucophrys</i> (4)	uplands	common (n)		<i>Cyclarhis gujanensis</i> (4)	uplands	rare
Southern Nightingale-wren				Red-eyed Vireo		
<i>Microcerculus marginatus</i> (4)	uplands	fairly common (n)		<i>Vireo olivaceus</i> (4)	uplands	uncommon
Song Wren				Lesser Greenlet		
<i>Cyborhinus phaeocephalus</i> (4)	uplands	rare (new)		<i>Hylophilus decurtatus</i> (4)	uplands	uncommon (n)
Long-tailed Mockingbird				Yellow-tailed Oriole		
<i>Mimus longicaudatus</i> (4)	lowlands	common		<i>Icterus mesomelas</i> (4)	lowlands	insufficient data
Spotted Nightingale-thrush (A)				Yellow-rumped Cacique		
<i>Catharus dryas</i> (4)	uplands	common (n)		<i>Cacicus cela</i> (4)	uplands	uncommon
Swainson's Thrush (Nm)				Peruvian Meadowlark		
<i>Catharus ustulatus</i> (4)	uplands	uncommon (n)		<i>Sturnella bellicosa</i> (4)	lowlands	insufficient data
White-throated Thrush				Scrub Blackbird		
<i>Turdus assimilis</i> (4)	uplands	common (n) (new)		<i>Dives warszewiczii</i> (4)	lowlands	common
Ecuadorian Thrush (Ec)				Great-tailed Grackle		
<i>Turdus nudigenis maculirostris</i> (3)	uplands	uncommon		<i>Quiscalus mexicanus</i> (4)	lowlands	common
Pale-vented Thrush (A)				Shiny Cowbird		
<i>Turdus obsoletus</i> (4)	uplands	rare (new)		<i>Molothrus bonariensis</i> (4)	lowlands	insufficient data
Tropical Gnatcatcher						
<i>Polioptila plumbea</i> (4)	lowlands	common				
Variable Seedeater						
<i>Sporophila americana aurita</i> (4)	lowlands	fairly common (n)				
Dull-colored Seedeater						
<i>Sporophila obscura</i> (4)	uplands	rare (n)				
Orange-billed Sparrow						
<i>Arremon aurantirostris</i> (4)	uplands	uncommon				
Chestnut-capped Brush-finch						
<i>Atlapetes brunneinucha</i> (4)	uplands	fairly common (n)				
Southern Yellow-grosbeak						
<i>Pheucticus chrysogaster</i> (4)	lowlands	insufficient data				
Buff-throated Saltator						
<i>Saltator maximus</i> (4)	uplands	uncommon				
Ash-throated Bush-tanager (A)						
<i>Chlorospingus canigularis</i> (4)	uplands	fairly common (n)				
Yellow-throated Bush-tanager (A)						
<i>Chlorospingus flavigularis</i> (4)	uplands	fairly common (n) (new)				
White-shouldered Tanager						
<i>Tachyphonus luctuosus</i> (4)	uplands	rare				
White-lined Tanager						
<i>Tachyphonus rufus</i> (4)	uplands	rare (new)				
Hepatic Tanager						
<i>Piranga flava</i> (4)	uplands	uncommon (n)				
Summer Tanager						
<i>Piranga rubra</i> (4)	uplands	rare				
Flame-rumped Tanager						
<i>Ramphocelus flammigerus</i> (4)	uplands	fairly common				
Blue-grey Tanager						
<i>Thraupis episcopus</i> (4)	lowlands	common				
Palm Tanager						
<i>Thraupis palmarum</i> (4)	uplands	uncommon				
Thick-billed Euphonia						
<i>Euphonia lanirostris</i> (4)	uplands	uncommon				
Orange-bellied Euphonia						
<i>Euphonia xanthogaster</i> (4)	uplands	common (n)				
Bay-headed Tanager						
<i>Tangara gyrola</i> (4)	uplands	uncommon (n)				
Silver-throated Tanager						
<i>Tangara icterocephala</i> (4)	uplands	fairly common (n)				
Yellow-tufted Dacnis						
<i>Dacnis (lineata) egregia</i> (4)	uplands	uncommon				