A bird survey of Torcillo-Sarayoj, the lower Yungas of Madidi National Park, Bolivia

A. Bennett Hennessey

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Mediante observación y grabación, realicé un estudio extenso de aves en el sitio prístino Torcillo-Sarayoj del bosque Yungas inferiores (EBA 054) de Parque Nacional Madidi del 6 al 17 de octubre de 2003, entre 1.600–1.800 msnm. Registré 156 especies de aves. El sitio tenía una posibilidad de 276 especies en relación a su ubicación y hábitat. El bajo nivel de diversidad encontrado puede ser un resultado de la ausencia de Yungas arriba de 2.000 msnm. Por encima de Torcillo-Sarayoj se encuentra el bosque seco y sabanas de la región de Apolo. En cuyo lugar no encontré las posibles especies amenazadas en el área de *Pauxi unicornis* (ni tampoco obtuve información local del pueblo de Sarayoj) y *Terenura sharpei*. La única especie amenazada en el lugar es la Paraba *Ara militaris*, que es común en los Yungas de Madidi. Además, encontré seis especies de rango-restringido de de 12 especies posibles. En conclusión, dado el pobre nivel de diversidad existente de aves en el lugar, es de gran prioridad realizar estudios en el oeste de la región de Torcillo-Sarayoj para verificar la zona más viable de los Yungas inferiores en Madidi y Bolivia.

In recent years the Yungas of Madidi have produced a number of avian range extensions and other discoveries not predicted for the area^{3,5,10}. Though some unpublished research has been conducted in the lower Yungas of Madidi, no intensive single-site ornithological study has been undertaken within the park. Given the conservation priority of the lower Yungas EBA¹⁴, it was imperative to conduct an initial rapid ornithological survey of the Torcillo-Sarayoj site.

Methods

On 6-17 October 2002, I surveyed the lower Yungas forest at Torcillo-Sarayoj (Fig.1; 14°37'S 68°11'W, c.20 km east of Apolo), at 1,600-1,800 m. Torcillo-Sarayoj is a pristine lower Yungas forest, with the eastern, higher slopes above 2,000 m reaching Apolo valley dry savannas and dry forests. Part of the study area is on a slightly sloping plateau area at 1,700-1,800 m with old-growth forest. Below 1,700 a fairly steep slope had younger forest. The area was accessed via a trail to the village of Sarayoj, on the valley floor (1,200 m). Three camps were established for the survey: at 1,750 m, on 6-9 October, 1,700 m, on 10-13 October, and 1,800, on 14-17 October. I followed the trail to 1,600 m. Survey work was conducted on the main trail and two additional trails, opened at 1,700 m and 1,800 m, with a total length of c.7 km.

Each morning, I surveyed different points at least 200 m apart⁹, arriving before sunrise and identifying and sound-recording vocalisations of the dawn chorus. Thereafter, I surveyed different trails, covering 1–3 km, and usually halting field work between 12h00 and 15h00. I used binoculars, sound-recorders and pre-recorded reference tapes. The pre-recorded reference tapes were designed for the Bolivian Yungas, with examples of songs and calls indicative of individual and regional variation.

Birds were observed, sound-recorded and identifications verified using pre-recorded tapes or playback, including 'rebound' playback (i.e. broadcasting the first response to playback). For rapid assessment surveys, bird vocalisations are the best evidence to verify identification. I endeavoured to tape-record all species at least once. Each evening I completed a checklist of the day's observations, noting estimated abundances, field time, distance

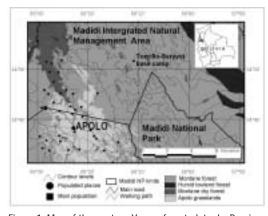


Figure 1. Map of the western Yungas forest, dpto. La Paz, in Madidi National Park, showing the location of Torcillo-Sarayoj.

walked and evidence (sight records, heard or taperecorded). Taxonomy follows Hennessey et al.⁵ based on work by the South American Checklist Committee of the American Ornithologists' Union (www.museum.lsu.edu/~Remsen/SACCBaseline.ht ml, version 13/09/2002).

Results and discussion

A total of 156 species was found at 1,600–1,800 m at Torcillo-Sarayoj (Appendix 1). The Torcillo-Sarayoj site appears to be poor in species diversity, compared to the 276 bird species possible for the area, according to those known from dpto. La Paz, in relevant-elevation Yungas forest (not aquatic or open habitats), and not including austral migrants⁵. I observed 57% of the possible birds for the area, which is more or less consistent with 50% of the restricted-range, and 47% of the zoogeographic regional endemic, species possible for the area.

I believe that the rapid census covered at least 90% of the birds present at the site at this season. Based on the list of possible birds, and other Yungas studies in Bolivia^{3,5}, the site could hold at least 70 additional species. The paucity of biological diversity might be explained by the lack of immediately adjacent viable moist Yungas forest above 2,000 m (Fig. 1). Yungas forests in Bolivia can range to 3,600 m⁵. The mountain range above Torcillo-Sarayoj grades into Apolo inter-montane dry forest and grassy savanna plateaux. Therefore, species that require or prefer a higher altitudinal gradient may not occur in the area. Also, although precipitation levels appear normal, with a high abundance of epiphytes including bromeliads, yearround the area may experience a lower level of precipitation or an extended dry season, suggested by its proximity to drier areas of Apolo.

Species accounts

Grey Tinamou Tinamus tao

At 17h05 on 9 October 2003, at 1,700 m, I soundrecorded a 257-second song (Macaulay Library of Natural Sounds, Cornell 105894, 105895) of Tinamus tao. The song commenced with a typical call note (1.1-1.3 kHz, 1 second), with repetitions equally paced, averaging every c.5 seconds (47 calls). The call notes change progressively through the song, becoming more warbled but remaining at the same frequency and spatial pattern. This long song and the transition in call types were previously unknown for T. tao in the Bolivian lowlands (pers. obs) or in any habitat outside of Bolivia. I heard this long song five times, always at dusk or dawn. Short sections of the warble calls had previously been sound-recorded in Carassco and Amboro National Parks (dptos. Cochabamba and Santa Cruz)^{7,8} and also on the Serranía Eslabon, Madidi (B. Whitney pers. comm.). T. tao of the Bolivian Yungas may be one of several taxa, currently categorised as subspecies, in the eastern Andean foothills that vocalise quite differently from populations in the Amazonian lowlands (B. Whitney pers. comm.). Future research should focus on vocal and plumage variation within *T. tao*.

Southern Horned Curassow Pauxi unicornis

In the isolated Yungas town of Sarayoj, near our study site, H. Aranibar and I conducted local knowledge interviews, seeking any information regarding the globally threatened Pauxi unicornis. Local hunters were unfamiliar with the species, even after we described the bird. Such people and indigenous communities are usually very familiar with cracids, as they are commonly hunted, and their knowledge has been demonstrated to be most accurate². I have conducted over 40 local knowledge interviews for *P. unicornis* with many communities and hunters in north-west Bolivia, i.e. in the area between Peruvian populations and the southernmost known populations, in Carrasco and Amboro National Parks. There has been no indication of the species within this area, particularly in Madidi and Pilón Lajas protected areas. The species requires urgent research, regarding historical sites, population distribution and existing population viability.

screech-owl Otus sp.

S. K. Herzog, S. R. Ewing and R. MacLeod collected and tape-recorded a presently unidentified *Otus* in Cochabamba, in September 2001 (S. Herzog pers. comm.). The bird may represent a new endemic *Otus* or variation within Cloud-forest Screech-owl *O. marshalli*. I did not record individuals of this form at Torcillo-Sarayoj but tape-recorded it at 2,300 m, at Inciensal Sauce, on 26 June 2002 (14°25′S 68°42′W), the first record for dpto. La Paz and Madidi. Inciensal Sauce is c.35 km from Torcillo-Sarayoj.

Andean Potoo Nyctibius maculosus

The first record for Madidi involved one that was sound-recorded on the nights of 15 and 16 October 2002, at 1,800 m. R. & C. Cuevas commented that in July-August, in the town of Virgen del Rosario (14°36'S 68°41'W), on the río Tuichi in Madidi (900 m) the local community recognises the song of this potoo as a signal to start seeding their crops. They consider that the species is only present for c.2 months each year, and the time of its arrival is an indicator of the seasonal variation in precipitation. August is the height of the dry season in Bolivia. This suggests the species might be an altitudinal migrant in response to the dry season in the upper Yungas, which is suspected to be the case for many species in the La Paz area. There is also the possibility that Andean Potoo only sings for a short period each year, but this is not supported by the singing behaviour of other potoos.

Rufous Motmot Baryphthengus martii

A pair observed and sound-recorded at 11h00, on 6 October 2002, at 1,750 m, was an unusually high altitude record. Both individuals were seen well

and had complete tails, without missing barbs of the tail to produce a pendulum effect.

Yellow-rumped Antwren Terenura sharpei

I did not record the globally threatened Yellowrumped Antwren TerenurasharpeiTorcillo-Sarayoj despite specific daily searches using playback. Recently, the species has been discovered to be more common than previously perceived along the Manu road in central Peru (B. Walker pers. comm.). The distribution and conservation status of this species is mysterious, with only five recent records in Bolivia: a sight record from the Cochabamba-Villa Tunari road, Chaparé, Cochabamba, in 1979¹; a specimen from the Chaparé area, in 2001 (R. Brumfield pers. comm.); sight records and two specimens from km 35 and km 47 on the road north-northwest of Carañavi, La Paz, in 1979-198011; and at least two observed at Serrania Bellavista c.15-20 km north-east of Carañavi, in 1997 (S. Herzog pers. comm.). The Armonía (BirdLife Bolivia) bird database contains no other records of this species, other than that of the type specimen, despite many visits by bird tours to relevant areas and specific field expeditions to Yungas sites. The species requires specific attention, as there is no known viable population site in Bolivia and it has not been found in any protected

Silver-backed Tanager Tangara viridicollis

On 15 October 2002, a female was observed feeding a fledged immature at 1,800 m, and a group of three (a bright-coloured male, a dull female and another, even duller, individual) foraging together at 1,700 m. This, elsewhere fairly common, canopyforaging flock species is now known from two sites in Bolivia, the first being Tokoaque, also in Madidi³.

Silver-backed Tanager / Green-throated Tanager T. argyrofenges hybrid

On 15 October 2002, at 1,800 m, I observed a male Tangara viridicollis/argyrofenges hybrid foraging in an early successional fruiting tree that was attracting many canopy-foraging flock species. The individual had a T. viridicollis-like rufous throat patch and grey sides to the breast and belly, but like T. argyrofenges had black wings and a bright cream/yellow back (the rump was not seen). It was followed by a dull female with a rufous-tinged throat like T. viridicollis. The Torcillo-Sarayoj area appears to represent the hybrid zone between the northern-distributed T. a. argyrofenges and the southerly T. v. viridicollis⁶. The two forms of T. argyrofenges are separated by a c.1,000 km gap, with T. viridicollis inhabiting the intervening region⁶.

Table 1. Restricted-range bird species possible in the Torcillo-Sarayoj area of the Bolivian and Peruvian Lower Yungas (EBA 054)¹⁴ and those recorded at Torcillo-Sarayoj and within Madidi National Park.

Species	Torcillo-Sarayoj	Madidi
Bolivian Recurvebill Simoxenops striatus		Х
Upland Antshrike Thamnophilus aroyae	Х	Х
White-throated Antpitta Grallaria albigula	Х	Х
Ashy (Yungas) Antwren Myrmotherula gris	sea	Х
Yellow-rumped Antwren Terenura sharpe	i	
Hazel-fronted Pygmy-tyrant Pseudotriccus	simplex	Х
Bolivian Tyrannulet Zimmerius bolivianus	Х	Х
Yungas Tody-tyrant Hemitriccus spodiops		Х
Unadorned Flycatcher Myiophobus inornat	us x	Х
Yungas Manakin Chiroxiphia boliviana	Х	Х
Slaty Tanager Creurgops dentata	Х	Х
Green-throated Tanager Tangara argyrofe	nges	Х

Conservation

The only globally threatened species recorded in the area was Military Macaw *Ara militaris*, which is categorised as Vulnerable¹, and was uncommon in the area, with fewer observations than in the Machariapo and Tuichi valleys⁴ c.30 km from Torcillo-Sarayoj. All observations were of pairs in high flight.

Six restricted-range species were found at Torcillo-Sarayoj, i.e. 50% of the 12 restricted-range species possible for the area (Table 1). I have excluded *Pauxi unicornis* for reasons explained above. *Simoxenops striatus*, *Myrmotherula grisea* and *Hemitriccus spodiops* have been previously recorded in Madidi, and the park is suspected to protect viable populations. *H. spodiops* is a bamboo specialist, which is not abundant at Torcillo-Sarayoj. *P. simplex* has been recorded once at Tokoaque, Madidi³. *T. sharpei* and *T. argyrofenges* are discussed above.

An analysis of regional zoogeographic endemics ¹⁵ revealed a similar low diversity, with 17 zoogeographic endemic species present out of 36 possible for the area, ten of which have been recorded in other parts of Madidi^{3,5}.

Given the relatively low diversity of the pristine Torcillo-Sarayoj area and the large expanse of cleared Yungas south-east of the park, priority should be placed on the lower Yungas of western Madidi. The upper Yungas of this sector of Madidi, near the Peruvian border, was found to be species rich and to contain many restricted-range species³, suggesting that the lower Yungas of this area might be equally diverse. Study of the lower Yungas of western Madidi is a high priority, in order to locate the most viable area of such habitat in Bolivia.

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A. Bennett Hennessey

Asociación Armonía/BirdLife International, Av. Lomas de Arena 400, Casilla 3566, Santa Cruz de la Sierra, Bolivia. E-mail: tangara@unete.com.

Appendix 1. Bird species recorded in the Torcillo-Sarayoj area, Madidi National Park, Bolivia.

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Relative abundance (definition based on Stotz et al. 15): C = common; F = fairly common: U = uncommon: R = rare.

Sociability: 1 = single individuals; 2 = pairs; 3 = family groups; 4 = gregarious; CF = canopy foraging flock; UF = understorey foraging flock; ? = data unknown

Evidence: O = visual identification; A = acoustic identification; C = taperecording

recording.	elative abundance	ibility	m (1,700 m	m (ence
Family/Species Scientific Name	Relat	Socia	1,800	1,700	1,600	Evide
TINAMIDAE (2) Grey Tinamou Tinamus tao Brown Tinamou Crypturellus obsoletus	F F	1	Χ	X	X X	C C
CRACIDAE (1) Spix's Guan Penelope jacquacu	R	?			Χ	С
PHASIANIDAE (2) Stripe-faced Wood-quail Odontophorus balliviani Rufous-breasted Wood-quail	?	?	Χ			Α
Odontophorus speciosus	F?	3	Χ	Χ	Χ	С
ACCIPITRIDAE (2) Swallow-tailed Kite Elanoides forficatus Plumbeous Kite Ictinia plumbea	U U	1	X X			0
FALCONIDAE (2) Barred Forest-falcon <i>Micrastur ruficollis</i> Orange-breasted Falcon <i>Falco deiroleucus</i>	U R	1	X X	Χ		C C
COLUMBIDAE (4) Band-tailed Pigeon Columba fasciata Plumbeous Pigeon Columba plumbea Large-tailed Dove Leptotila megalura White-throated Quail-dove Geotrygon frenata	R C F	1 2 1 1	X X X	X X X	Χ	O C C
PSITTACIDAE (6) Military Macaw <i>Ara militaris</i> Green-cheeked Parakeet <i>Pyrrhura molinae</i>	R C	2	Χ	X	Χ	C C

							<u> </u>						
Barred Parakeet Bolborhynchus lineola	С	4	Χ	Χ	Χ	С	DENDROCOLAPTIDAE (5)						
Red-billed Parrot Pionus sordidus	F	4		Χ		С	Olivaceous Woodcreeper						
Plum-crowned Parrot Pionus tumultuosus	?	4		Χ		С	Sittasomus griseicapillus	С	CF	Χ	Χ	Χ	С
Scaly-naped Parrot Amazona mercenaria	F	2,4	Χ			С	Strong-billed Woodcreeper						
							Xiphocolaptes promeropirhynchus	U	1			Χ	Α
CUCULIDAE (1)							Black-banded Woodcreeper						
Squirrel Cuckoo Piaya cayana	R	1			Χ	С	Dendrocolaptes picumnus	U	1,CF	Χ	Χ		С
							Olive-backed Woodcreeper						
STRIGIDAE (2)	_						Xiphorhynchus triangularis	F	CF	Χ	Χ	Χ	С
3.	F	1,2	X	Χ	Χ	С	Montane Woodcreeper Lepidocolaptes lacrymiger	F	CF	Χ	Χ		С
Rufous-banded Owl Ciccaba albitarsus	F	1	Χ			С	FURNARIIDAE (10)						
STEATORNITHIDAE (1)							Azara's Spinetail <i>Synallaxis azarae</i>	F	1,3	Χ			С
` '	R	1	Χ			Α	Ash-browed Spinetail Cranioleuca curtata	F	CF	Χ	Χ	Χ	C
							Spotted Barbtail Premnoplex brunnescens	U	UF		Χ	Χ	С
NYCTIBIIDAE (1)							Streaked Tuftedcheek	-	-				-
* *	R	1	Χ			С	Pseudocolaptes boissonneautii	R	?	Χ			С
,							Montane Foliage-gleaner Anabacerthia striaticollis	F	CF,UF	Χ	Χ	Χ	0
CAPRIMULGIDAE (1)							Buff-browed Foliage-gleaner						
* *	F	1		Χ	Χ	С	Syndactyla rufosuperciliata	C 3	,CF,UI	FΧ	Χ	Χ	С
- / -							Striped Woodhaunter Hyloctistes subulatus	R	?	Χ			Α
APODIDAE (2)							Buff-fronted Foliage-gleaner Philydor rufus	F	CF		Χ	Χ	С
	R	4		Χ		С	Striped Treehunter Thripadectes holostictus	R	1			Χ	C
White-collared Swift Streptoprocne zonaris	F	4	Χ	Χ	Χ	С	Streaked Xenops Xenops rutilans	R	CF		Χ		0
TROCHILIDAE (8)							FORMICARIIDAE (8)						
• •	R	1	Χ			0	Fasciated Antshrike Cymbilaimus lineatus	R	UF		Χ		0
	F	1	٨		Χ	0	Upland Antshrike Thamnophilus aroyae	U	1		Χ		A
j	R	1		Χ	^	0	Plain Antvireo Dysithamnus mentalis	F	2,UF	Χ	X	Χ	C
'	Ü	1		Χ	Χ	С	White-backed Fire-eye Pyriglena leuconota	F		Х	Χ	Х	С
	R	1	Χ	Χ	^	0	Short-tailed Antthrush Chamaeza campanisona	C	1,01	Х	Χ	Х	С
	F	1	X	Χ	Χ	C	White-throated Antpitta Grallaria albigula	F	1	Х	Χ	^	С
-p	U	1	Х	^	^	0	Scaled Antpitta Grallaria guatimalensis	U	1	Х	Χ	Χ	
	F	1	Х			0	odalod 7 thipitta oranana gadiimalonsis	0		^	^	^	
							CONOPOPHAGIDAE (1)						
TROGONIDAE (3)							Slaty Gnateater Conopophaga ardesiaca	R	2			Χ	С
	F	1,2	Χ	Χ	Χ	С							
	F	1,2	Χ	Χ	Χ	С	RHINOCRYPTIDAE (1)						
Golden-headed Quetzal Pharomachrus auriceps	R	1	Χ			A	Bolivian Tapaculo Scytalopus bolivianus	F	1	Χ	Χ	Χ	С
MOMOTIDAE (1)							TYRANNIDAE (23)						
. ,	F	2		Χ	Χ	С	Rough-legged Tyrannulet <i>Phyllomyias burmeisteri</i>	F	CF			Χ	С
and the state of t							Sclater's Tyrannulet Phyllomyias sclateri	U	CF			Χ	0
CAPITONIDAE (1)							Sierran Elaenia Elaenia pallatangae	F	1	Χ			С
• •	С	1,2	Χ	Χ	Χ	С	Southern Beardless-tyrannulet						
							Camptostoma obsoletum	R	UF	Χ			0
RAMPHASTIDAE (3)							White-throated Tyrannulet						
Blue-banded Toucanet							Mecocerculus leucophrys	R	CF		Χ		0
	F	1,4	Χ			С	Bolivian Tyrannulet Zimmerius bolivianus	R	CF			Χ	0
Chestnut-tipped Toucanet							Slender-footed Tyrannulet Zimmerius gracilipes	R	CF			Χ	С
Aulacorhynchus derbianus	F	1	Χ	Χ	Χ	С	Marble-faced Bristle-tyrant						
rialacerry rioriae acresianae	Г				Χ	С	Phylloscartes ophthalmicus	С	CF	Χ	Χ	Χ	С
*	r R	1					01 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_					0
*		1					Streak-necked Flycatcher Mionectes striaticollis	R	UF	Χ			0
Yellow-ridged Toucan Ramphastos vitellinus		1					Streak-necked Flycatcher Mionectes striaticollis Slaty-capped Flycatcher Leptopogon superciliaris	R C	UF CF	X	Χ	Χ	С
Yellow-ridged Toucan Ramphastos vitellinus PICIDAE (6)		1			Χ	0	,	С			Χ	X X	
Yellow-ridged Toucan Ramphastos vitellinus PICIDAE (6) Bar-breasted Piculet Picumnus aurifrons	R				X X	0	Slaty-capped Flycatcher Leptopogon superciliaris	C U	CF		Χ		С
Yellow-ridged Toucan Ramphastos vitellinus PICIDAE (6) Bar-breasted Piculet Picumnus aurifrons Ocellated Piculet Picumnus dorbygnianus	R R	1					Slaty-capped Flycatcher Leptopogon superciliaris White-bellied Pygmy-tyrant Myiornis albiventris	C U R	CF 1,CF		Х	Χ	C C
Yellow-ridged Toucan Ramphastos vitellinus PICIDAE (6) Bar-breasted Piculet Picumnus aurifrons Ocellated Piculet Picumnus dorbygnianus Red-stained Woodpecker Veniliornis affinis	R R R	1 CF	X	X	Χ	0	Slaty-capped Flycatcher Leptopogon superciliaris White-bellied Pygmy-tyrant Myiornis albiventris Yellow-olive Flycatcher Tolmomyias sulphurescen:	C U R	CF 1,CF 1	Χ	X	Χ	C C
Yellow-ridged Toucan Ramphastos vitellinus PICIDAE (6) Bar-breasted Piculet Picumnus aurifrons Ocellated Piculet Picumnus dorbygnianus Red-stained Woodpecker Veniliornis affinis Crimson-mantled Woodpecker Piculus rivolii Golden-olive Woodpecker Piculus rubiginosus	R R R R F	1 CF 1	X X	X X	X	O A	Slaty-capped Flycatcher Leptopogon superciliaris White-bellied Pygmy-tyrant Myiornis albiventris Yellow-olive Flycatcher Tolmomyias sulphurescen: White-throated Spadebill Platyrinchus mystaceus	C U R R	CF 1,CF 1 UF	X		X	C C C
Yellow-ridged Toucan Ramphastos vitellinus PICIDAE (6) Bar-breasted Piculet Picumnus aurifrons Ocellated Piculet Picumnus dorbygnianus Red-stained Woodpecker Veniliornis affinis Crimson-mantled Woodpecker Piculus rivolii Golden-olive Woodpecker Piculus rubiginosus	R R R R F	1 CF 1			X	O A A	Slaty-capped Flycatcher Leptopogon superciliaris White-bellied Pygmy-tyrant Myiornis albiventris Yellow-olive Flycatcher Tolmomyias sulphurescen: White-throated Spadebill Platyrinchus mystaceus Unadorned Flycatcher Myiophobus inornatus Cinnamon Flycatcher Pyrrhomyias cinnamomea Fuscous Flycatcher Cnemotriccus fuscatus	C U R R U R	CF 1,CF 1 UF 1,2	X X X	X X	X X X X	C C C C
Yellow-ridged Toucan Ramphastos vitellinus PICIDAE (6) Bar-breasted Piculet Picumnus aurifrons Ocellated Piculet Picumnus dorbygnianus Red-stained Woodpecker Veniliornis affinis Crimson-mantled Woodpecker Piculus rivolii	R R R R F	1 CF 1 1	Χ	Χ	X X X	O A A A	Slaty-capped Flycatcher Leptopogon superciliaris White-bellied Pygmy-tyrant Myiornis albiventris Yellow-olive Flycatcher Tolmomyias sulphurescen: White-throated Spadebill Platyrinchus mystaceus Unadorned Flycatcher Myiophobus inornatus Cinnamon Flycatcher Pyrrhomyias cinnamomea	C U R R F U	CF 1,CF 1 UF 1,2 CF	X X X	Χ	X X X X	C C C C C

Myiodynastes chrysocephalus	F	1	Χ			С	Purple Honeycreeper Cyanerpes caeruleus	R	CF			Χ	0
Sulphur-bellied Flycatcher							Capped Conebill Conirostrum albifrons	R	CF	Χ			0
Myiodynastes luteiventris	R	CF			Χ	0	Deep-blue Flowerpiercer Diglossa glauca	F	CF	Χ	Χ		0
Pale-edged Flycatcher Myiarchus cephalotes	R	1	Χ			0	Hepatic Tanager Piranga flava	U	CF	Χ	Χ	Χ	0
Large-headed Flatbill Ramphotrigon megacephala		?			Χ	С	White-winged Tanager Piranga leucoptera	U	CF			Χ	0
Masked Tityra Tityra semifasciata	F	1,3	Χ	Χ	Χ	С	Red-crowned Ant-tanager Habia rubica	F	UF			Χ	С
Thrush-like Schiffornis Schiffornis turdinus	F	1,2		Χ	Χ	С	Thick-billed Euphonia Euphonia laniirostris	R	1			Χ	С
							Bronze-green Euphonia Euphonia mesochrysa		4,CF		Χ	Χ	С
COTINGIDAE (3)	_						Orange-bellied Euphonia Euphonia xanthogaster		3,CF		Χ	Χ	С
Scarlet-breasted Fruiteater Pipreola frontalis	R	CF			Χ	0	Blue-naped Chlorophonia Chlorophonia cyanea	F 2	,UF,C	FX	Χ	Χ	С
Andean Cock-of-the-rock Rupicola peruviana	С	1,4	Χ	Χ	Χ	С							
Amazonian Umbrellabird Cephalopterus ornatus	R	1	Χ			0	EMBERIZINAE (2)						_
DIDDID 45 (0)							Stripe-headed Brush-finch Buarremon torquatus		UF		.,	.,	С
PIPRIDAE (2)							Rufous-naped Brush-finch Atlapetes rufinucha	F	1,3,UF	· X	Χ	Χ	С
3	С	1,4	Χ	Χ	Χ	С							
Wing-barred Piprites Piprites chloris	С	1	Χ	Χ	Χ	С	CARDINALINAE (1)						_
VIDEONIDAE (1)							Black-backed Grosbeak Pheucticus aureoventris	U	CF	Χ	Χ	Χ	С
VIREONIDAE (1)	г	1.00	V	V	V	0							
Brown-capped Vireo Vireo leucophrys	F	1,CF	Х	Χ	Χ	С	PARULINAE (5)						
CORVIDAE (2)							Tropical Parula Parula pitiayumi	U	CF	Χ	Χ	Χ	0
White-collared Jay Cyanolyca viridicyana	R	1			Χ	Α	Slate-throated Whitestart Myioborus miniatus	С	1,CF	Χ	Χ	Χ	С
Green Jay Cyanocorax yncas		1,2,3,4	Χ	Χ	Х	С	Russet-crowned Warbler Basileuterus coronatus	F	3,UF			Χ	С
Green say Cyanocorax yricas	'	1,2,3,4	^	٨	٨	C	Pale-legged Warbler Basileuterus signatus	U	UF	Χ			С
TROGLODYTIDAE (4)							Three-striped Warbler Basileuterus tristriatus	С	UF	Χ	Χ	Χ	С
Grey-mantled Wren Odontorchilus branickii	F	CF	Χ	Χ	Χ	С							
Mountain Wren Troglodytes solstitialis	F	1,CF	Χ			С	ICTERIDAE (3)						
Grey-breasted Wood-wren							Dusky-green Oropendola Psarocolius atrovirens	С	4	Χ	Χ	Χ	С
Henicorhina leucophrys	F	1,2	Χ	Χ	Χ	С	Crested Oropendola Psarocolius decumanus	U	4			Χ	С
Chestnut-breasted Wren Cyphorhinus thoracicus	F	1		Χ		С	Mountain Cacique Cacicus chrysopterus	R	1	Χ	Χ		0
,,													
TURDINAE (6)													
Andean Solitaire Myadestes ralloides	F	1	Χ	Χ	Χ	С							
Spotted Nightingale-thrush Catharus dryas	F	1	Χ	Χ		0							
White-eared Solitaire Entomodestes leucotis	F	1	Χ	Χ		С							
Pale-eyed Thrush Platycichla leucops	F	1	Χ	Χ		C							
White-necked Thrush Turdus albicollis	F		Χ	Χ	Χ	C							
Black-billed Thrush Turdus ignobilis	R	1	Χ			С							
v													
THRAUPINAE (31)													
Slaty Tanager Creurgops dentata	R	CF	Χ			0							
Black-eared Hemispingus Hemispingus melanotis	F	UF	Χ	Χ		0							
Black-goggled Tanager Trichothraupis melanops	R	UF			Χ	0							
White-lined Tanager Tachyphonus rufus	R	CF		Χ		0							
White-winged Shrike-tanager Lanio versicolor	U	CF	Χ	Χ		0							
Palm Tanager Thraupis palmarum	F	CF	,,	,,	Χ	C							
Blue-winged Mountain-tanager		0.			,,								
Anisognathus flavinucha	F	CF	Χ	Χ	Χ	С							
Fawn-breasted Tanager Pipraeidea melanonota	U	CF	Х	Х	/	0							
Common Bush-tanager	0	01	^	^		0							
	C 3	,CF,UI	FΥ	Χ	Χ	С							
Orange-eared Tanager Chlorochrysa calliparaea	U	CF	Х	X	٨	C							
Golden Tanager Tangara arthus	U	CF	Χ	X	Χ	Ö							
Golden-eared Tanager Tangara chrysotis	R	CF	Χ	Х	٨	0							
Blue-necked Tanager Tangara cyanicollis	F	CF	Χ	X	Χ	С							
Blue-browed Tanager Tangara cyanotis	F	CF	Χ	X	X	С							
Beryl-spangled Tanager Tangara nigroviridis	F	CF	X	X	X	0							
	11			Χ	Χ	0							
Spotted Tanager Tangara punctata	U	CF	٨		V	\cap							
Golden-naped Tanager Tangara ruficervix	F	CF	٨	Χ	X	0							
Golden-naped Tanager Tangara ruficervix Green-and-gold Tanager Tangara schrankii	F R	CF CF	٨		Χ	0							
Golden-naped Tanager Tangara ruficervix Green-and-gold Tanager Tangara schrankii Blue-and-black Tanager Tangara vassorii	F R U	CF CF		Χ		0							
Golden-naped Tanager Tangara ruficervix Green-and-gold Tanager Tangara schrankii	F R U F	CF CF	X		Χ	0							