

Birds in the Parque Estadual dos Três Picos, Rio de Janeiro state, south-east Brazil

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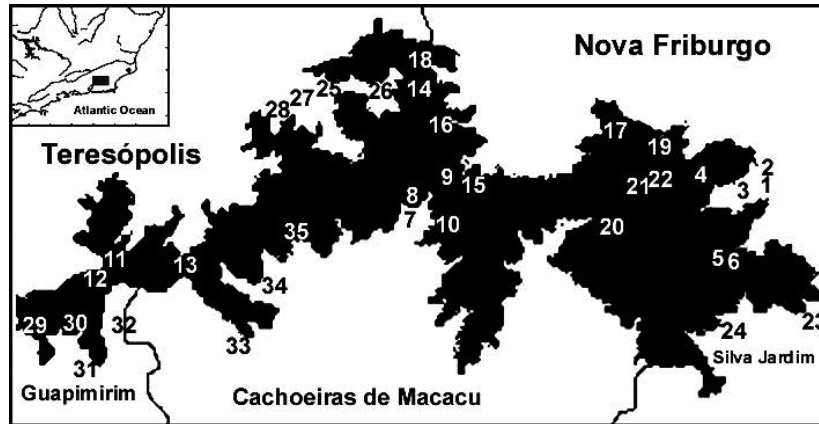
O Parque Estadual dos Três Picos (PETP), atualmente a maior unidade de conservação ambiental do Estado do Rio de Janeiro (58.000 ha) protege uma das mais importantes regiões florestadas do território fluminense. Entre novembro de 2005 e agosto de 2006 foram visitadas trinta e cinco localidades dentro do parque e em seu entorno, com o objetivo de inventariar a avifauna regional. Foram registradas 321 espécies de aves, sendo que aproximadamente metade dessa avifauna foi constituída por espécies consideradas incomuns. Cerca de um terço das espécies de aves registradas é representado por espécies endêmicas da mata atlântica. Foram encontradas 24 espécies globalmente vulneráveis ou quase ameaçadas, bem como 18 espécies ameaçadas ou provavelmente ameaçadas de extinção no Estado do Rio de Janeiro. Além de preservar uma das mais ricas faunas regionais, a criação do PETP foi uma garantia para a conservação das nascentes que abastecem de água várias cidades vizinhas e para o futuro estabelecimento de um potencial corredor ecológico entre as áreas florestadas do Parque Nacional da Serra dos Órgãos e do Parque Estadual do Desengano, duas das mais importantes unidades de conservação do Estado do Rio de Janeiro.

Parque Estadual dos Três Picos (PETP), situated in the centre of Rio de Janeiro state (encompassing parts of the municipalities of Teresópolis, Guapimirim, Cachoeiras de Macacu, Nova Friburgo and Silva Jardim), is currently the state's largest environmental conservation unit occupying 58,000 ha. PETP is named after the Três Picos mountains located on the Teresópolis / Nova Friburgo border, a majestic assemblage of three granitic peaks reaching c.2,350 m. Since its creation in 2002, the PETP protects one of the largest and most important forested areas in Rio de Janeiro, guaranteeing the preservation of the headwaters that supply water to the cities adjacent to the park. The present study provides an inventory of the bird species found in the PETP and adjacent areas, as well as a basis for the conservation policies required to preserve the natural resources of this important remnant of Atlantic Forest in south-east Brazil.

Material and methods

Bird surveys were conducted between November 2005 and August 2006 (with occasional visits since). The following 35 localities were visited in the PETP and adjacent areas (Fig. 1). (1) Hotel São João and environs (22°22'S 42°28'W; 960 m), Macaé de Cima, Nova Friburgo; second growth and secondary forest. (2) Hotel São João (22°21'S 42°28'W; 950–1,000 m), Macaé de Cima, Nova Friburgo; secondary forest. (3) Trail near the Córrego Frisia (22°22'S 42°30'W; 950–1,270 m), Macaé de Cima, Nova Friburgo; montane and secondary forests, and pasture. (4) Macaé de Cima to Teodoro de Oliveira trail (22°22'S 42°31'W; 950–1,300 m), Nova Friburgo; montane and secondary forests. (5) Trail

near Fazenda Verdin (22°24'S 42°29'W; 950–1,230 m), Macaé de Cima, Nova Friburgo; montane forest. (6) Rio das Flores region (22°24'S 42°29'W; 950 m), Macaé de Cima, Nova Friburgo; secondary forest, second growth and pasture. (7) Region between Guapiaçu and Santo Amaro (22°26'S 42°45'W; 40 m), Cachoeiras de Macacu; pasture and cultivation. (8) Reserva Ecológica Guapiaçu (REGUA) (22°25'S 42°44'W; 70–250 m), Cachoeiras de Macacu; submontane and secondary forests, second growth and wetlands. (9) Region between Fazenda Santo Antonio, Cachoeiras de Macacu, and Fazenda Campestre (22°23'S 42°42'W; 380–700 m), Nova Friburgo; montane, submontane and secondary forests, and second growth. (10) Fazenda São Miguel (22°26'S 42°42'W; 100–300 m), Cachoeiras de Macacu; submontane and secondary forests. (11) Área de Proteção Ambiental do Jacarandá (22°26'S 42°55'W; 800–1,400 m), Teresópolis; secondary forest. (12) Vale da Revolta (22°26'S 42°56'W; 1,030 m), Teresópolis; montane and secondary forests, cultivation and pasture. (13) Clube Sayonara (22°26'S 42°53'W; 900 m), Teresópolis; montane and secondary forests. (14) Três Picos and Capacete peaks (22°19'S 42°43'W; 1,550–1,750 m), Teresópolis / Nova Friburgo border; montane forest and pasture. (15) Fazenda Campestre (22°22'S 42°41'W; 1,050–1,100m), Nova Friburgo; montane forest, cultivation and pasture. (16) Mariana (22°20'S 42°41'W; 1,300 m), Nova Friburgo; montane and secondary forests, second growth and pasture. (17) São Lourenço–Cascatinha trail (22°20'S 42°36'W; 1,250–1,550 m), Nova Friburgo; secondary forest, second growth and pasture. (18) Foothills of the Pico Cabeça do Dragão (22°19'S 42°43'W; 1,500–2,040 m), Nova Friburgo; montane forest,



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Figure 1. Localities visited in the Parque Estadual dos Três Picos (in black) and adjoining areas (see Material and methods).

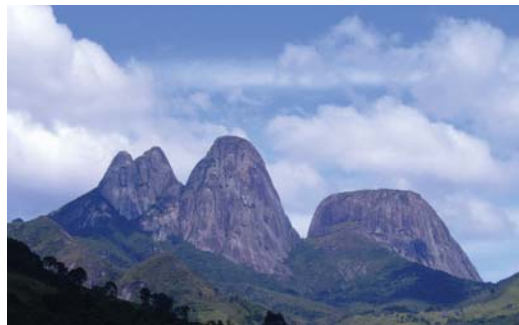
Figure 2. Central part of the Parque Estadual dos Três Picos (locality 9) (F. Mallet-Rodrigues)

Figure 3. Três Picos and Capacete mountains (locality 14) (F. Mallet-Rodrigues)

Figure 4. Fazenda Campestre (locality 15) (F. Mallet-Rodrigues)

Figure 5. Pico da Caledônia (locality 19) (F. Mallet-Rodrigues)

Figure 6. Serra dos Pirineus (locality 24) (F. Mallet-Rodrigues)



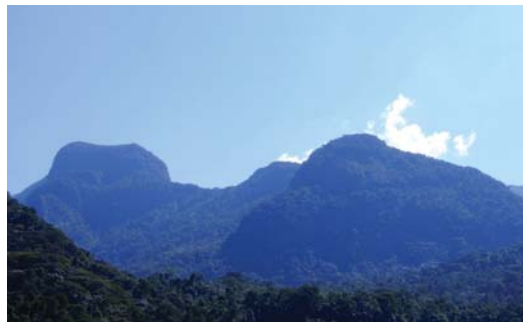
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second growth and pasture. (19) Pico da Caledônia (22°21'S 42°35'W; 2,060–2,219 m), Nova Friburgo; montane forest and high grassland. (20) Boca do Mato (22°24'S 42°36'W; 400–500 m), Cachoeiras de Macacu; submontane forest. (21) Upper rio Macacu, near the Córrego Grande (22°23'S 42°35'W; 500–600 m), Cachoeiras de Macacu; submontane and secondary forests, and second growth. (22) Trail near dam on the rio Macacu (Posto do Pena) (22°23'S 42°34'W; 550–700 m), Cachoeiras de Macacu; submontane forest. (23) Sertão de Bananeiras (22°27'S 42°26'W; 150–400 m), Silva Jardim; secondary forest, second growth and pasture. (24) Foothills of the Serra dos Pirineus (22°28'S 42°30'W; 100–300 m), Silva Jardim; submontane forest. (25) Waterfall on the rio Frades (22°20'S 42°47'W; 1,000 m), Teresópolis; scattered secondary forest, second growth and pasture. (26) Upper rio Frades (22°20'S 42°45'W; 1,220 m), Teresópolis; secondary forest, second growth and pasture. (27) Middle rio Antas (22°20'S 42°48'W; 1,100–1,150 m), Teresópolis; second growth and pasture. (28) Córrego Buraco do Ouro (22°21'S 42°49'W; 1,200–1,250 m), Teresópolis; secondary forest, second growth and pasture. (29) Region between the upper rios Iconha and Soberbo (22°28'S 42°59'W; 350–1,150 m), Guapimirim; submontane and secondary forests, and second growth. (30) Serra da Caneca Fina (22°28'S 42°56'W; 200–600 m), Guapimirim; submontane forest and second growth. (31) Caminho do Ouro (22°30'S 42°56'W; 250 m), Guapimirim; secondary forest and second growth. (32) Estação Ecológica Paraíso (22°29'S 42°54'W; 60–1,350 m), Cachoeiras de Macacu; submontane forest. (33) Serra Queimada (22°28'S 42°51'W; 15–150 m), Cachoeiras de Macacu; submontane and secondary forests, and second growth. (34) Areal (22°27'S 42°50'W; 15–200 m), Cachoeiras de Macacu; secondary forest and second growth. (35) Foothills of the Serra do Estreito (22°25'S 42°48'W; 150 m), Cachoeiras de Macacu; submontane forest.

During a total of >200 hours of field observations were visited areas of montane and submontane Atlantic Forest, second growth, pastures and high grassland. Observations were conducted from 05h00 to 18h00, with some nocturnal surveys to record owls, nightjars and potoos. In each locality visited we observed birds along foot trails, and any vocalisations not immediately identified were tape-recorded and then identified by playback, or compared later with recordings deposited at the Arquivo Sonoro Elias Coelho (ASEC), Universidade Federal do Rio de Janeiro, RJ).

The status of each species was defined using four categories: common—recorded on >75% of days; fairly common—recorded on 51–75% of days;

uncommon—recorded on 25–50% of days; and rare—recorded on <25% of days.

The status of each threatened species is defined according to BirdLife International⁴, the Brazilian list of threatened species⁵ and Alves *et al.*², whilst the status of species endemic to the Atlantic Forest is based on Parker *et al.*¹⁵. Nomenclature and sequence follow the Comitê Brasileiro de Registros Ornitológicos (CBRO)⁷. Coordinates and altitudes of the localities visited were established using a GPS (Garmin GPS 12).

Results

We detected 321 bird species from 58 families in the PETP (see Appendix). 'Uncommon' species were predominant (52%), but some of these are very common in non-forested and disturbed areas adjacent to the PETP, e.g. Rock Pigeon *Columba livia*, Swallow-tailed Hummingbird *Eupetomena macroura* and House Sparrow *Passer domesticus*. Only 11 of the 43 species 'rare' in the PETP are endemic to the Atlantic Forest (25.5% of endemics among the species 'rare' in the PETP).

Although a large proportion of the PETP is covered by well-preserved, dense tropical forest, localities predominantly covered by second growth and mature secondary forest possess the highest number of species. A total of 161 species (or 50% of the total) recorded in the PETP occurred in second growth and 150 species (46.5%) recorded in the park in mature secondary forest. Only nine species (3%) occurred in the high grasslands, most of them above 1,800–2,000 m.

Ninety-six species in the PETP are endemic to the Atlantic Forest, which represents 30% of endemics known from the region, whilst the number of endemics found in the PETP represents c.60% of Atlantic Forest endemics known from Rio de Janeiro state. The majority of endemic species occurred more frequently in forested areas, especially in mature and well-preserved forest. Only ten endemic species (or 10.5% of endemics) were 'rare' in the PETP. A significant percentage (45%) of those species restricted to high grasslands in the PETP were endemics.

Twenty-four species (7.5%) recorded in the PETP are considered globally Vulnerable or Near Threatened⁴ and four (1%) are Vulnerable in Brazil⁵, whilst 18 species (5.5%) are considered Threatened or Probably Threatened in the state of Rio de Janeiro².

Selected species accounts

Solitary Tinamou *Tinamus solitarius*

Nowadays rare or extinct in many parts of its overall range (eastern Pernambuco to northern Argentina), Solitary Tinamou is considered 'Threatened' in the state of Rio de Janeiro².

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Apparently, it was fairly common in the Nova Friburgo region in the mid-20th century^{8,14}. In the late afternoon of 27 March 2006, the species was heard in forest along the upper rio Macacu (22°23'S 42°34'W), in the municipality of Cachoeiras de Macacu, at 650 m, whilst it has been recently recorded at Paraíso Ecological Station (near the PETP), at the border of Guapimirim and Cachoeiras de Macacu municipalities¹³. A nest (with five eggs) was found in December 2007 at Boca do Mato, Cachoeiras de Macacu (P. Forrest & A. Foster *in litt.* 2008).

Spot-winged Wood Quail *Odontophorus capueira*

Now a rare bird at several localities and considered 'Probably Threatened' in the state of Rio de Janeiro², Spot-winged Wood Quail was recorded at several localities in the PETP, where we deemed it to be 'uncommon'.

White-necked Hawk *Leucopternis lacernulatus*

Endemic to the Atlantic Forest, this hawk is considered 'Vulnerable' in the state of Rio de Janeiro². Intense deforestation of the lowlands and foothills is undoubtedly a serious threat to the species. One was seen over forest along the upper rio Macacu (22°23'S 42°34'W), municipality of Cachoeiras de Macacu, at c.650 m, in the early afternoon of 27 March 2006.

Mantled Hawk *Leucopternis polionotus*

Mantled Hawk is similar to the previous species but is generally found at higher altitudes. Although rare, it is considered less threatened than White-necked Hawk. One was recorded on 22 February 2006 at Mariana (22°20'S 42°41'W), municipality of Nova Friburgo, at 1,290 m.

White-rumped Hawk *Pernohierax leucorhous*

One was recorded on 14 November 2005 at Macaé de Cima (22°22'S 42°30'W), municipality of Nova Friburgo, at 1,060 m.

Pileated Parrot *Pionopsitta pileata*

'Probably Threatened' in the state of Rio de Janeiro², the species was found on the trail from Teodoro de Oliveira to Macaé de Cima (22°23'S 42°31'W), municipality of Nova Friburgo, on 16 November 2005.

Blue-bellied Parrot *Tridaria malachitacea*

Considered globally Near Threatened⁴ and 'Vulnerable' in the state of Rio de Janeiro². The call of this parrot was heard in the canopy of forest along the upper rio Macacu (22°23'S 42°34'W), municipality of Cachoeiras de Macacu, at 650m, in the afternoon of 27 March 2006.

Black-banded Owl *Strix huhula*

Apparently scarce, the form *S. h. albomarginata*, which is restricted to the Atlantic Forest, is known from a few localities in Rio de Janeiro state¹⁰ in which the species' status is described as unknown². On 27 March 2006 the species' song was heard at Boca do Mato (22°24'S 42°36'W), municipality of Cachoeiras de Macacu, at c.400 m. Two months later, two birds, probably a pair, were tape-recorded and seen in the same area (L. P. Gonzaga pers. comm.).

White-bearded Antshrike *Biatas nigropectus*

Typically found in stands of bamboo in forests from south-east Brazil to Argentina, the species is considered 'Probably Threatened' in the state of Rio de Janeiro². A pair was observed (and tape-recorded) at a site with dense bamboo (*Merostachys* sp.) on the Teodoro de Oliveira to Macaé de Cima trail, at 1,200 m, on 28 March 2006.

Slaty Bristlefront *Merulaxis ater*

Considered globally Near Threatened⁴, Slaty Bristlefront is rare in central Rio de Janeiro state and has rarely been found there since a specimen was collected in the early 1800s. Recently it has been found on the Teodoro de Oliveira to Macaé de Cima trail, at 1,200 m, where a male was seen and tape-recorded on 28 March 2006. Slaty Bristlefront also has been recorded at Reserva Ecológica Guapiaçu (REGUA) (F. Olmos *in litt.* 2008) and at Boca do Mato (L. P. Gonzaga *in litt.* 2008).

Oustalet's Tyrannulet *Phylloscartes oustaleti*

Oustalet's Tyrannulet is considered 'Vulnerable' in the state of Rio de Janeiro² and has not recently been recorded in the Serra dos Órgãos¹³. One was observed in a mixed-species flock in forest between São Lourenço and Cascatina (22°20'S 42°36'W), municipality of Nova Friburgo, on 23 February 2006.

Swallow-tailed Cotinga *Phibalura flavirostris*

'Probably Threatened' in the state of Rio de Janeiro². A group of six (including immatures) was observed in second growth with *Pteridium aquilinum* at 1,550 m in the northern PETP (22°19'S 42°43'W) on 23 February 2006.

Elegant Mourner *Laniisoma elegans*

Occasionally recorded in central Rio de Janeiro state^{6,12,19}, the species' song was heard at Macaé de Cima, Nova Friburgo, on 17 November 2005, from where the species was already known⁶. 'Probably Threatened' in the state of Rio de Janeiro².

Giant Cowbird *Molothrus oryzivorus*

'Probably Threatened' in the state of Rio de Janeiro², one was observed in a pasture at Macaé de Cima, Nova Friburgo, on 14 November 2005.

Discussion

The creation of the PETP, encompassing the large and densely forested montane massif in central Rio de Janeiro, was an important government initiative to guarantee the conservation of the rich local fauna and flora, and to preserve the headwaters that supply water to cities adjacent to the park. The park's environment is well preserved, with dense forest covering most of the area, although adjacent regions are predominantly devoted to agriculture and residential land use. The west of the PETP is undoubtedly the most threatened by drastic human pressure from occupation of the foothills, illegal hunting and capture of passerines as cagebirds. Some passerines are now scarce, principally in the western PETP.

The predominance of 'uncommon' species in the bird community is a known feature of tropical habitats. According to Goerck⁹, 68% of birds in the Atlantic Forest in Brazil are 'rare' because of their evolutionary history, spatial distribution and genetic structure.

Although primary forests are highly diversified habitats, secondary forests are richer in bird species than primary forests^{11,16}. Apparently, birds typical of natural clearings and forest borders are commoner in secondary forests. In the PETP many bird species were recorded in secondary forest and shrubby clearings. However, greater effort should be devoted to preserving mature forests, because most birds found in secondary habitats are widely distributed in the Neotropics and their populations are less threatened than those species endemic to the Atlantic Forest. More than 50% of extinct or less-abundant species found in secondary forests in eastern Brazil are endemic to the Atlantic Forest¹. The same was true in the PETP, where more than half of bird species recorded in primary forest were endemic taxa.

High grasslands in the PETP, although of limited extent, are important for the four endemics (Plovercrest *Stephanoxis lalandi*, Rufous-tailed Antbird *Drymophila genei*, Velvety Black Tyrant *Knipolegus nigerrimus* and Bay-chested Warbling Finch *Poospiza thoracica*) among the nine species recorded in this habitat. An important species is Itatiaia Spinetail *Oreophylax moreirae*, a furnariid restricted to high montane grasslands in eastern Brazil (above 1,800 m), which is common on the Pico da Caledônia, Nova Friburgo.

Although apparently not a threat to local avifauna, some exotic or naturally invading bird species are common in areas adjoining the PETP, with Rock Pigeon *Columba livia*, House Sparrow

Passer domesticus and Common Waxbill *Estrilda astrild*, among introduced species, and Cattle Egret *Bubulcus ibis*, Picazuro Pigeon *Patagioenas picazuro*, Wing-banded Hornero *Furnarius figulus*, Rufous-fronted Thornbird *Phacellodomus rufifrons*, Masked Water Tyrant *Fluvicola nengeta*, Curl-crested Jay *Cyanocorax cristatellus* and Chalk-browed Mockingbird *Mimus saturninus*, among natural invaders. These birds, which occur in open habitats (pastures, cultivation and around habitation) although common on the periphery, are uncommon in the forested central region of the park.

The occurrence of several 'Threatened' or 'Probably Threatened' species in the state of Rio de Janeiro increases the importance of the park to local biodiversity. The large size of the PETP and the well-preserved state of its forests have guaranteed the occurrence of birds of prey, such as White-necked Hawk *Leucopternis lacernulatus*, Mantled Hawk *L. polionotus* and Black Hawk-Eagle *Spizaetus tyrannus*, which require adequate habitat and prey. The occurrence of Solitary Tinamou *Tinamus solitarius*, Spot-winged Wood Quail *Odontophorus capueira*, Dusky-legged Guan *Penelope obscura* and Rusty-margined Guan *P. supercilii* indicate that hunting is not a significant factor at least in some parts of the park. Some species are probably extinct in the region because of hunting, such as Black-fronted Piping Guan *Aburria jacutinga* (Probably Extinct in Rio de Janeiro^{2,6}) and Variegated Tinamou *Crypturellus variegatus*¹⁷. Others have not been recently recorded in the vicinity of the PETP (Purple-winged Ground Dove *Claravis godefrida*, Rio de Janeiro Antbird *Cercomacra brasiliiana*, Atlantic Royal Flycatcher *Onychorhynchus swainsoni*, Cinnamon-vented Piha *Lipaugus lanioides* and Lesser Seed Finch *Sporophila angolensis*) or are of unknown status (Kinglet *Calyptura calyptura cristata* and Rio de Janeiro Antwren *Myrmotherula fluminensis*). Another important bird species found in the PETP is Grey-winged Cotinga *Tijuca condita*, which has a restricted range and was only described in 1980¹⁸. *T. condita* has recently been found on the Pico da Caledônia³ and might also be found elsewhere in the PETP where there is suitable habitat. We were unable to find *T. condita* on the Pico da Caledônia despite using playback.

Creating the PETP, protecting one of the most extensive areas of forest in the state of Rio de Janeiro, was a very important measure to preserve the rich regional biodiversity, including several endemic and threatened species. PETP is also a potential corridor between the forested areas of the Parque Estadual do Desengano and Parque Nacional da Serra dos Órgãos, two of the most important forest reserves in Rio de Janeiro state.

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Appendix. Bird species recorded in the Parque Estadual dos Três Picos, Rio de Janeiro state, south-east Brazil. Occurrence: common (Co), fairly common (Fc), uncommon (Uc), rare (Ra), with evidence: sight record (S), tape-recorded (T). Habitats: montane forest (mo), submontane forest (sm), mature secondary forest (se), second growth, cultivated fields and gardens (sc), pasture and open areas (pa), high grassland (hg) and wetlands (we). Status: *Global status*³: Vulnerable (VGB), Near Threatened (NGB). *Status in Brazil*⁴: Vulnerable (VBR). *Status in Rio de Janeiro*²: Threatened (TRJ), Probably Threatened (PRJ), Vulnerable (VRJ), unknown status (URJ).

Family / Species	Occurrence	Habitats	Status	Endemic to the Atlantic Forest	Localities
TINAMIDAE					
Solitary Tinamou <i>Tinamus solitarius</i>	Ra (T)	sm	NGB, TRJ	X	22
Brown Tinamou <i>Crypturellus obsoletus</i>	Fc (S,T)	mo, sm, se			2-6, 8, 9, 11, 15, 17
Tataupa Tinamou <i>Crypturellus tataupa</i>	Uc (T)	se			8, 9, 11, 30, 31
ANATIDAE					
White-faced Whistling Duck <i>Dendrocygna viduata</i>	Uc (S)	we			8
Brazilian Teal <i>Amazonetta brasiliensis</i>	Uc (S)	we			7, 8, 33
CRACIDAE					
Rusty-margined Guan <i>Penelope superciliaris</i>	Ra (S)	sm			8
Dusky-legged Guan <i>Penelope obscura</i>	Uc (S)	mo			15, 17
ODONTOPHORIDAE					
Spot-winged Wood Quail <i>Odontophorus capueira</i>	Uc (S)	mo	PRJ	X	2, 20, 29
PHALACROCORACIDAE					
Neotropic Cormorant <i>Phalacrocorax brasilianus</i>	Ra (S)	we			8
ARDEIDAE					
Rufescent Tiger Heron <i>Tigrisoma lineatum</i>	Ra (S)	we			8
Black-crowned Night Heron <i>Nycticorax nycticorax</i>	Uc (S)	we			8
Striated Heron <i>Butorides striata</i>	Uc (S)	we			8
Cattle Egret <i>Bubulcus ibis</i>	Uc (S)	we			8, 33, 34
Great Egret <i>Ardea alba</i>	Uc (S)	we			8, 33, 34
Snowy Egret <i>Egretta thula</i>	Ra (S)	we			8
THRESKIORNITHIDAE					
Buff-necked Ibis <i>Theristicus caudatus</i>	Ra (S)	pa			33
CATHARTIDAE					
Turkey Vulture <i>Cathartes aura</i>	Uc (S)	sc, pa			1, 2, 8, 14, 23-27, 33, 34, 35
Black Vulture <i>Coragyps atratus</i>	Co (S)	sc, pa			1-5, 7, 8, 11, 14, 19, 23-30, 32-35
ACCIPITRIDAE					
Grey-headed Kite <i>Leptodon cayanensis</i>	Ra (S,T)	sm			8
Sharp-shinned Hawk <i>Accipiter striatus</i>	Ra (S)	se			15
White-necked Hawk <i>Leucopternis lacernulatus</i>	Ra (S)	sm	VGB, VBR, VRJ	X	22
Mantled Hawk <i>Leucopternis polionotus</i>	Ra (S)	sc	NGB, PRJ		16
Savanna Hawk <i>Heterospizias meridionalis</i>	Uc (S)	sc, pa			1, 3, 7, 8, 15, 33, 34
White-rumped Hawk <i>Pernohierax leucorrhous</i>	Ra (S)	mo, se			3
Roadside Hawk <i>Rupornis magnirostris</i>	Fc (S,T)	se, sc, pa			1, 5-9, 11, 13-16, 20, 23, 24, 30, 33-35
White-tailed Hawk <i>Buteo albicaudatus</i>	Uc (S,T)	sc, pa			18, 19
Black Hawk-Eagle <i>Spizaetus tyrannus</i>	Ra (S,T)	se	PRJ		11
FALCONIDAE					
Southern Caracara <i>Caracara plancus</i>	Uc (S)	pa			3, 6-8, 12, 18, 33, 34
Yellow-headed Caracara <i>Milvago chimachima</i>	Fc (S)	sc, pa			1, 3, 6-9, 14, 15, 23, 33-35
Laughing Falcon <i>Herpetotheres cachinnans</i>	Uc (S)	pa			33, 34
Barred Forest Falcon <i>Micrastur ruficollis</i>	Uc (S,T)	se			11, 14, 20, 29
Collared Forest Falcon <i>Micrastur semitorquatus</i>	Ra (T)	se			8
American Kestrel <i>Falco sparverius</i>	Ra (S)	pa			18
Aplomado Falcon <i>Falco femoralis</i>	Uc (S)	pa			24, 33, 34
RALLIDAE					
Slaty-breasted Wood Rail <i>Aramides saracura</i>	Fc (S,T)	se, sc, we		X	1, 3, 4, 6, 8, 13, 15
Rufous-sided Crane <i>Laterallus melanophaius</i>	Ra (T)	we			8
Ash-throated Crane <i>Porzana albicollis</i>	Ra (T)	we			8
Blackish Rail <i>Pardirallus nigricans</i>	Uc (S)	we			1, 15
Common Moorhen <i>Gallinula chloropus</i>	Ra (S)	we			8
CARIAMIDAE					
Red-legged Seriema <i>Cariama cristata</i>	Uc (S)	pa			16, 25-27

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CHARADRIIDAE					
Southern Lapwing <i>Vanellus chilensis</i>	Fc (S)	pa			1, 3, 7, 8, 12-15, 23, 24, 33, 34
JACANIDAE					
Wattled Jacana <i>Jacana jacana</i>	Uc (S)	we			7, 8
COLUMBIDAE					
Ruddy Ground Dove <i>Columbina talpacoti</i>	Co (S)	sc			1, 3, 6-8, 16, 20, 24, 33-35
Rock Dove <i>Columba livia</i>	Uc (S)	sc			7
Picazuro Pigeon <i>Patagioenas picazuro</i>	Fc (S)	sc, pa			1, 7-9, 23-27, 33, 34
Pale-vented Pigeon <i>Patagioenas cayennensis</i>	Ra (S,T)	se			15, 17
Plumbeous Pigeon <i>Patagioenas plumbea</i>	Uc (S)	mo, se			2, 3, 5, 11
White-tipped Dove <i>Leptotila verreauxi</i>	Fc (S,T)	sc			7, 8, 10, 23, 24, 30-35
Grey-fronted Dove <i>Leptotila rufaxilla</i>	Fc (S,T)	se			1-9, 11-13, 15, 16, 30
Ruddy Quail-Dove <i>Geotrygon montana</i>	Uc (T)	se			4, 14, 30, 32
PSITTACIDAE					
White-eyed Parakeet <i>Aratinga leucophthalma</i>	Co (S)	se, sc			14, 18, 25-29
Maroon-bellied Parakeet <i>Pyrrhura frontalis</i>	Co (S)	se, sc	X		2-5, 8, 9, 13, 15, 20, 22, 29
Blue-winged Parrotlet <i>Forpus xanthopterygius</i>	Fc (S)	sc			7, 9, 20, 23
Plain Parakeet <i>Brotogeris tirica</i>	Co (S)	sm, se, sc	X		2, 3, 5, 6, 8-11, 20-24, 32, 33, 35
Pileated Parrot <i>Pionopsitta pileata</i>	Ra (T)	se	PRJ	X	4
Scaly-headed Parrot <i>Pionus maximiliani</i>	Co (S)	sm, se, sc			2-4, 8, 9, 11, 13-15, 20-23, 25-31, 33-35
Blue-bellied Parrot <i>Triclaria malachitacea</i>	Ra (S)	mo	NGB, VRJ	X	22
CUCULIDAE					
Squirrel Cuckoo <i>Piaya cayana</i>	Fc (S,T)	sm, se, sc			5, 8, 15, 17, 18, 21, 23, 24, 30, 31
Smooth-billed Ani <i>Crotophaga ani</i>	Fc (S)	pa			1, 7, 8, 9, 15, 23, 24, 33, 34
Guira Cuckoo <i>Guira guira</i>	Fc (S)	sc, pa			7, 8, 15, 23-28, 33, 34
Striped Cuckoo <i>Tapera naevia</i>	Ra (S)	sc			12
TYTONIDAE					
Barn Owl <i>Tyto alba</i>	Ra (S)	sc			24
STRIGIDAE					
Tropical Screech Owl <i>Megascops choliba</i>	Uc (S)	sc			15, 30, 31
Tawny-browed Owl <i>Pulsatrix koeniswaldiana</i>	Uc (S)	se	X		9, 20-22, 30
Black-banded Owl <i>Strix huhula</i>	Ra (S,T)	sc	URJ		20
Ferruginous Pygmy Owl <i>Glaucidium brasilianum</i>	Uc (S,T)	sc			23, 31
Burrowing Owl <i>Athene cucularia</i>	Uc (S)	pa			7, 8, 15, 16, 23, 24, 33, 34
Striped Owl <i>Rhinoptynx clamator</i>	Uc (S,T)	sc			8, 24
NYCTIBIIDAE					
Common Potoo <i>Nyctibius griseus</i>	Uc (T)	sm			29-31
CAPRIMULGIDAE					
Short-tailed Nighthawk <i>Lurocalis semitorquatus</i>	Uc (S,T)	sc			1, 29
Pauraque <i>Nyctidromus albicollis</i>	Fc (S,T)	sc			7, 8, 15, 24, 31
APODIDAE					
White-collared Swift <i>Streptoprocne zonaris</i>	Uc (S)	se, sc			1, 5, 6, 8, 13, 24, 29, 30, 33, 34
Grey-rumped Swift <i>Chaetura cinereiventris</i>	Uc (S)	se, sc			5, 9, 10, 15, 20, 23
Sick's Swift <i>Chaetura meridionalis</i>	Uc (S)	se, sc			6-8, 10, 11, 13, 29, 33, 34
TROCHILIDAE					
Saw-billed Hermit <i>Ramphodon naevius</i>	Fc (S,T)	sm, se	NGB, PRJ	X	8, 9, 20, 22-24, 29, 30, 32, 33, 35
Reddish Hermit <i>Phaethornis ruber</i>	Uc (S,T)	se, sc			8, 21, 32
Planalto Hermit <i>Phaethornis pretrei</i>	Uc (S)	sc			14
Scale-throated Hermit <i>Phaethornis eurynome</i>	Fc (S,T)	mo, se, sc	X		1, 3, 4-6, 11, 13-15, 20
Swallow-tailed Hummingbird <i>Eupetomena macroura</i>	Uc (S)	sc			16
Sombre Hummingbird <i>Aphantochroa cirrochloris</i>	Uc (S)	sc	X		20, 21
Black Jacobin <i>Florisuga fusca</i>	Uc (S)	se, sc	X		1-4, 7, 8, 13
Plovercrest <i>Stephanoxis lalandi</i>	Uc (S,T)	se, sc, hg	X		5, 14, 19
Frilled Coquette <i>Lophornis magnificus</i>	Ra (S)	sc			29
Glittering-bellied Emerald <i>Chlorostilbon aureoventris</i>	Uc (S)	sc			15, 25-27
Violet-capped Woodnymph <i>Thalurania glaucopis</i>	Co (S)	se, sc	X		1, 2, 7, 8, 10, 11, 20, 30
White-chinned Sapphire <i>Hylocharis cyanus</i>	Uc (S,T)	se, sc			8
White-throated Hummingbird <i>Leucochloris albicollis</i>	Co (S,T)	sc, pa	X		1, 3-5, 14, 17, 18
Versicoloured Emerald <i>Amazilia versicolor</i>	Uc (S)	sc			8
Glittering-throated Emerald <i>Amazilia fimbriata</i>	Ra (S)	sc			7
Brazilian Ruby <i>Clytolaema rubricauda</i>	Fc (S,T)	mo, se, sc	X		1, 3-5, 14, 15, 17, 29
Amethyst Woodstar <i>Calliphlox amethystina</i>	Ra (S)	sc			1
TROGONIDAE					
White-tailed Trogon <i>Trogon viridis</i>	Uc (S)	sm, se			8, 20, 32, 33

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Surucua Trogon <i>Trogon surrucura</i>	Uc (S)	se, sc		X		3-6, 22
Black-throated Trogon <i>Trogon rufus</i>	Uc (S)	sm, se, sc				8, 9, 11, 13, 14, 30
ALCEDINIDAE						
Ringed Kingfisher <i>Megaceryle torquata</i>	Uc (S)	sc, we				6, 7
Amazon Kingfisher <i>Chloroceryle amazona</i>	Uc (S)	we				11, 23
Green Kingfisher <i>Chloroceryle americana</i>	Uc (S)	sc, we				6, 8, 33
MOMOTIDAE						
Rufous-capped Motmot <i>Baryphthengus ruficapillus</i>	Uc (S,T)	se		X		5, 20, 23, 29, 31
GALBULIDAE						
Rufous-tailed Jacamar <i>Galbula ruficauda</i>	Uc (S,T)	sm				32
BUCCONIDAE						
White-eared Puffbird <i>Nystalus chacuru</i>	Uc (S,T)	sc, pa				7, 15
Crescent-chested Puffbird <i>Malacoptila striata</i>	Uc (S,T)	sm		X		20, 29
RAMPHASTIDAE						
Channel-billed Toucan <i>Ramphastos vitellinus</i>	Fc (S)	sm, se				7-9, 20-23, 29-33
Spot-billed Toucanet <i>Selenidera maculirostris</i>	Uc (S)	mo, sm		X		4, 8, 15, 20, 21, 30
Saffron Toucanet <i>Pteroglossus bailloni</i>	Uc (S)	sm	NGB	X		20
PICIDAE						
White-barred Piculet <i>Picumnus cirratus</i>	Co (S)	mo, se, sc				7-9, 11, 17, 20, 23, 24, 30
White Woodpecker <i>Melanerpes candidus</i>	Uc (S)	pa				7, 25-28
Yellow-fronted Woodpecker <i>Melanerpes flavifrons</i>	Uc (S)	sm		X		7, 8
Yellow-eared Woodpecker <i>Veniliornis maculifrons</i>	Co (S)	mo, sm, se				2, 5, 8, 15, 25-28, 30, 33
Yellow-throated Woodpecker <i>Piculus flavigula</i>	Uc (S)	sm				8, 29, 30, 33
Yellow-browed Woodpecker <i>Piculus aurulentus</i>	Uc (S,T)	mo, se	NGB	X		3-5, 15, 17
Campo Flicker <i>Colaptes campestris</i>	Co (S)	pa				1, 3, 6-9, 14, 15, 23, 25, 26, 33, 34
Blond-crested Woodpecker <i>Celeus flavescens</i>	Uc (S,T)	sm, se				8, 21, 29, 30, 32
THAMNOPHILIDAE						
Spot-backed Antshrike <i>Hypodaedalus guttatus</i>	Uc (S)	sm		X		7-9, 20, 30
Giant Antshrike <i>Batara cinerea</i>	Uc (S,T)	mo				4, 5, 15, 17, 18
Large-tailed Antshrike <i>Mackenziaena leachii</i>	Uc (S,T)	mo, sc		X		14, 17, 18
Tufted Antshrike <i>Mackenziaena severa</i>	Uc (S,T)	sc		X		16, 30
Rufous-capped Antshrike <i>Thamnophilus ruficapillus</i>	Uc (S,T)	sc				14, 16, 18
Chestnut-backed Antshrike <i>Thamnophilus palliatus</i>	Uc (S,T)	sc				8, 30
Sooretama Slaty Antshrike <i>Thamnophilus ambiguus</i>	Uc (S,T)	sc				8, 31, 33
Variable Antshrike <i>Thamnophilus caeruleus</i>	Uc (S,T)	se, sc				4, 11, 14, 15, 17, 25, 27, 28
White-bearded Antshrike <i>Biatas nigropectus</i>	Ra (S,T)	mo	VGB, VBR, PRJ			4
Spot-breasted Antwreos <i>Dysithamnus stictothorax</i>	Fc (S,T)	sm, se	NGB	X		7-10, 20
Plain Antwreos <i>Dysithamnus mentalis</i>	Fc (S,T)	se				4-6, 11, 13, 15, 20
Rufous-backed Antwreos <i>Dysithamnus xanthopterus</i>	Uc (S,T)	mo		X		4, 17
Star-throated Antwren <i>Myrmotherula gularis</i>	Co (S,T)	mo, sm, se		X		2-9, 11-13, 15, 20-22, 24, 29, 30, 33
White-flanked Antwren <i>Myrmotherula axillaris</i>	Uc (S,T)	se				8, 32, 33, 35
Unicoloured Antwren <i>Myrmotherula unicolor</i>	Uc (S,T)	se	NGB	X		8, 30, 33
Rufous-winged Antwren <i>Herpsilochmus rufimarginatus</i>	Uc (S,T)	se				8, 20
Ferruginous Antbird <i>Drymophila ferruginea</i>	Uc (S,T)	sc		X		11, 13
Berton's Antbird <i>Drymophila rubricollis</i>	Fc (S,T)	mo, se		X		2-5, 11, 15, 17
Rufous-tailed Antbird <i>Drymophila genei</i>	Uc (S,T)	hg	NGB	X		19
Ochre-rumped Antbird <i>Drymophila ochropyga</i>	Uc (S,T)	se, sc	NGB	X		2, 4, 5, 11, 15
Dusky-tailed Antbird <i>Drymophila malura</i>	Uc (S,T)	se, sc		X		3, 4, 6, 14, 15, 17
Scaled Antbird <i>Drymophila squamata</i>	Fc (S,T)	sm, se		X		7, 8, 10, 20
Streak-capped Antwren <i>Terenura maculata</i>	Fc (S,T)	sm, se		X		7-10, 20, 22-24, 29, 30
White-shouldered Fire-eye <i>Pyriglena leucoptera</i>	Co (S,T)	sm, se, sc		X		2-4, 6-12, 14, 15, 22, 23, 27-29, 31
White-bibbed Antbird <i>Myrmeciza loricata</i>	Uc (S,T)	se		X		11-13
CONOPOPHAGIDAE						
Rufous Gnateater <i>Conopophaga lineata</i>	Fc (S,T)	mo, se, sc		X		2-4, 11, 14, 15, 17
Black-cheeked Gnateater <i>Conopophaga melanops</i>	Fc (S,T)	sm, se, sc		X		7-9, 22, 24, 29
GRALLARIIDAE						
Variiegated Antpitta <i>Grallaria varia</i>	Uc (T)	mo, se				3-5, 11, 15, 17, 29
RHINOCRYPTIDAE						
Spotted Bamboo-wren <i>Psilorhamphus guttatus</i>	Ra (T)	sm, se	NGB	X		8, 11
Slaty Bristlefront <i>Merulaxis ater</i>	Ra (S,T)	mo	NGB	X		4
Serra do Mar Tapaculo <i>Scytalopus notorius</i>	Uc (S,T)	mo, sc		X		3-5, 14, 17-19
FORMICARIIDAE						
Rufous-capped Antthrush <i>Formicarius colma</i>	Uc (S,T)	sm				8, 9
Such's Antthrush <i>Chamaeza meruloides</i>	Fc (T)	mo, se		X		2-6, 11-13

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Rufous-tailed Anthrush <i>Chamaeza ruficauda</i>	Fc (S,T)	mo, se		X		3, 4, 14, 17
SCLERURIDAE						
Rufous-breasted Leaf-tosser <i>Sclerurus scansor</i>	Uc (S,T)	mo, sm, se		X		4, 7, 9, 12, 15, 30
DENDROCOLAPTIDAE						
Plain-winged Woodcreeper <i>Dendrocincla turdina</i>	Uc (S,T)	sm, se		X		7, 8, 10, 24, 30, 33, 35
Olivaceous Woodcreeper <i>Sittasomus griseicapillus</i>	Co (S,T)	mo, sm, se				2-9, 11-13, 15, 21-24, 29, 32, 33, 35
White-throated Woodcreeper <i>Xiphocolaptes albicollis</i>	Uc (S,T)	mo, sm, se				3-5, 7, 9, 13-15, 20, 29
Lesser Woodcreeper <i>Xiphorhynchus fuscus</i>	Co (S,T)	mo, sm, se		X		4-9, 11-13, 15, 17, 20, 22-24, 30, 31, 33, 35
Scaled Woodcreeper <i>Lepidocolaptes squamatus</i>	Uc (S)	sm		X		29, 30
Black-billed Scythebill <i>Campylorhamphus falcularius</i>	Uc (S,T)	mo, sm, se		X		20, 22
FURNARIIDAE						
Wing-banded Hornero <i>Furnarius figulus</i>	Uc (S)	sc				7, 30
Rufous Hornero <i>Furnarius rufus</i>	Co (S)	sc, pa				1, 7-10, 12, 15, 18, 23-27, 30
Itatiaia Spinetail <i>Oreophylax moreirae</i>	Ra (S,T)	hg				19
Rufous-capped Spinetail <i>Synallaxis ruficapilla</i>	Fc (S)	se, sc		X		2-6, 11, 14, 15, 17
Grey-bellied Spinetail <i>Synallaxis cinerascens</i>	Uc (S,T)	mo, se				15, 17
Spix's Spinetail <i>Synallaxis spixi</i>	Fc (S)	sc, hg				1, 3, 8, 12-14, 18, 19, 21, 25, 27, 28
Pallid Spinetail <i>Cranioleuca pallida</i>	Uc (S,T)	se, sc		X		3-5, 14, 15, 20
Yellow-chinned Spinetail <i>Certhiopsis cinnamomeus</i>	Uc (S)	we				23, 35
Rufous-fronted Thornbird <i>Phacellodomus rufifrons</i>	Fc (S)	pa				8, 15, 16, 25-27, 33, 34
Red-eyed Thornbird <i>Phacellodomus erythrophthalmus</i>	Uc (S,T)	se, sc		X		7, 9, 11, 15, 17, 27, 28
Buff-browed Foliage-gleaner <i>Syndactyla rufosuperciliata</i>	Uc (S,T)	se, sc				1, 4, 5, 15
Ochre-breasted Foliage-gleaner <i>Philydor lichtensteini</i>	Uc (S)	sm		X		29
Black-capped Foliage-gleaner <i>Philydor atricapillus</i>	Uc (S)	sm		X		20, 24, 29
Buff-fronted Foliage-gleaner <i>Philydor rufum</i>	Fc (S,T)	sm, se				1-9, 11, 12, 20, 22, 30, 32
White-collared Foliage-gleaner <i>Anabazenops fuscus</i>	Uc (S)	se, sc		X		2-6, 11, 13, 15, 17
Pale-browed Treehunter <i>Cichlocolaptes leucophrus</i>	Uc (S)	mo, sm, se		X		3-5, 8, 11, 15, 29, 30
White-eyed Foliage-gleaner <i>Automolus leucophthalmus</i>	Uc (S)	sm, se		X		7-10, 13, 20, 33, 35
Sharp-tailed Streamcreeper <i>Lochmias nematura</i>	Uc (S)	se, sc				4, 6, 11, 13-15, 17, 18, 23, 25, 28, 29, 32
Sharp-billed Treehunter <i>Heliobletus contaminatus</i>	Uc (S,T)	mo, se		X		3, 4, 6, 12, 15, 17
Plain Xenops <i>Xenops minutus</i>	Uc (S,T)	sm, se, sc				7-10, 12, 13, 24, 30, 32
Streaked Xenops <i>Xenops rutilans</i>	Uc (S,T)	sm, se				5, 8, 11, 15, 22, 23, 30
TYRANNIDAE						
Ochre-bellied Flycatcher <i>Mionectes oleagineus</i>	Ra (S,T)	sm, se				8
Grey-hooded Flycatcher <i>Mionectes rufiventris</i>	Fc (S,T)	sm, se		X		7-9, 17, 20, 22, 24
Sepia-capped Flycatcher <i>Leptopogon amaurocephalus</i>	Fc (S)	sm, se				2, 3, 5-9, 20, 24, 30
Southern Antpiper <i>Corythopis delalandi</i>	Uc (S,T)	se				8, 30
Drab-breasted Bamboo Tyrant <i>Hemitriccus diops</i>	Uc (S,T)	se		X		2, 4, 5, 11, 15
Eye-ringed Tody-Tyrant <i>Hemitriccus orbitatus</i>	Fc (S,T)	sm, se, sc	NGB	X		4, 7-9, 11, 24, 30, 32
Eared Pygmy Tyrant <i>Myiornis auricularis</i>	Uc (S,T)	se		X		4, 8, 21
Ochre-faced Tody-Flycatcher <i>Poecilotriccus plumbeiceps</i>	Fc (S,T)	se, sc				2-4, 11, 14, 15, 17, 25, 27, 28
Yellow-lored Tody-Flycatcher <i>Todirostrum poliocephalum</i>	Fc (S)	sc		X		7, 24, 25, 27-29
Common Tody-Flycatcher <i>Todirostrum cinereum</i>	Uc (S)	sc				23, 35
Rough-legged Tyrannulet <i>Phyllomyias burneisteri</i>	Uc (S,T)	sm				20, 30, 32
Planalto Tyrannulet <i>Phyllomyias fasciatus</i>	Fc (S)	se, sc				1, 11, 14, 15, 25, 27, 28
Grey-capped Tyrannulet <i>Phyllomyias griseocapilla</i>	Uc (S,T)	se	NGB	X		14, 15
Yellow-bellied Elaenia <i>Elaenia flavogaster</i>	Co (S)	sc				1, 7, 8, 10, 14, 16, 24, 30, 31, 33, 35
Olivaceous Elaenia <i>Elaenia mesoleuca</i>	Uc (S,T)	sc				14
Highland Elaenia <i>Elaenia obscura</i>	Uc (S,T)	sc				18
Southern Beardless Tyrannulet <i>Camptostoma obsoletum</i>	Uc (S)	sc				2-4, 14, 24
White-crested Tyrannulet <i>Serpophaga subcristata</i>	Uc (S)	sc				25, 27, 28, 30
Mottle-cheeked Tyrannulet <i>Phylloscartes ventralis</i>	Uc (S)	se, sc				2, 4-6, 13, 14, 16
Oustalet's Tyrannulet <i>Phylloscartes oustaleti</i>	Ra (S)	se	NGB, VRJ	X		17
Serra do Mar Tyrannulet <i>Phylloscartes difficilis</i>	Uc (S,T)	mo	NGB	X		14, 18
Yellow-olive Flycatcher <i>Tolmomyias sulphureus</i>	Co (S)	sm, se, sc				2-4, 6-11, 13-17, 20-25, 27-30, 32, 33, 35
White-throated Spadebill <i>Platyrinchus mystaceus</i>	Fc (S,T)	se, sc				4-6, 8, 11, 13, 15, 17, 20, 22, 29
Bran-coloured Flycatcher <i>Myiophobus subcristatus</i>	Fc (S)	sc				15, 21, 25-27, 31
Whiskered Flycatcher <i>Myiobius barbatus</i>	Uc (S)	se				23, 24
Black-tailed Flycatcher <i>Myiobius atricaudus</i>	Uc (S)	se				5, 15
Cliff Flycatcher <i>Hirundinea ferruginea</i>	Uc (S)	sc				1, 21
Euler's Flycatcher <i>Lathrotriccus euleri</i>	Co (S)	se				2, 5, 6, 8, 11, 14, 15, 21, 30
Blue-billed Black Tyrant <i>Knipolegus cyanostris</i>	Uc (S)	sc				15, 16, 18
Velvety Black Tyrant <i>Knipolegus nigerrimus</i>	Uc (S)	sc, hg		X		18, 19, 25, 26
White-rumped Monjita <i>Xolmis velatus</i>	Uc (S)	pa, hg				14, 18, 19, 25, 26
Shear-tailed Grey Tyrant <i>Muscipipra vetula</i>	Ra (S)	sc		X		18
Masked Water Tyrant <i>Fluvicola nengeta</i>	Co (S)	sc, pa				1, 7, 8, 20, 23, 24, 30
White-headed Marsh Tyrant <i>Arundinicola leucocephala</i>	Uc (S)	we				8, 34
Long-tailed Tyrant <i>Colonia colonus</i>	Fc (S)	se				8, 33, 35

Cotinga 31**Birds in the Parque Estadual dos Três Picos, Rio de Janeiro state, south-east Brazil**

Cattle Tyrant <i>Machetornis rixosa</i>	Fc (S)	pa			1, 7, 15, 33, 34
Piratic Flycatcher <i>Legatus leucophaeus</i>	Uc (S,T)	se, sc			7, 8, 11, 29
Social Flycatcher <i>Myiozetetes similis</i>	Co (S)	sc			1, 3, 6-8, 11, 14-16, 20-33, 35
Great Kiskadee <i>Pitangus sulphuratus</i>	Co (S)	sc			1, 3-9, 11, 14-16, 20, 21, 23-35
Streaked Flycatcher <i>Myiodynastes maculatus</i>	Fc (S)	sc			1, 3, 5-8, 11, 13
Boat-billed Flycatcher <i>Megarynchus pitangua</i>	Co (S)	se, sc			3, 4, 6-11, 14-16, 20, 21, 23, 30, 32, 33, 35
Variiegated Flycatcher <i>Empidonomus varius</i>	Co (S)	sc, pa			1, 3, 4, 7-11, 15, 16
Tropical Kingbird <i>Tyrannus melancholicus</i>	Co (S)	sc, pa			1, 3, 4, 6-9, 11, 14, 15, 20, 21, 23, 24, 30, 32-35
Fork-tailed Flycatcher <i>Tyrannus savana</i>	Uc (S)	pa			3, 7, 8, 10
Greyish Mourner <i>Rhytipterna simplex</i>	Uc (S)	se			8
Sirystes <i>Sirystes sibilator</i>	Uc (S)	se			8
Dusky-capped Flycatcher <i>Myiarchus tuberculifer</i>	Uc (S)	se			11, 30
Short-crested Flycatcher <i>Myiarchus ferox</i>	Fc (S)	sc			1, 3, 7-10, 15, 18
Large-headed Flatbill <i>Ramphotrigon megalcephalum</i>	Uc (S,T)	se, sc			4, 6, 8
Rufous-tailed Attila <i>Attila phoenicurus</i>	Uc (S,T)	se			15
Grey-hooded Attila <i>Attila rufus</i>	Co (S)	mo, se	X		1-9, 11, 13, 17, 29-32
COTINGIDAE					
Swallow-tailed Cotinga <i>Phibalura flavirostris</i>	Ra (S)	sc	NGB, PRJ		18
Hooded Berryeater <i>Carpornis cucullata</i>	Uc (S,T)	mo	NGB	X	2-6, 15
Bare-throated Bellbird <i>Procnias nudicollis</i>	Fc (S,T)	mo, sm, se	VGB, PRJ	X	1-6, 11, 13, 15, 32, 33
Black-and-gold Cotinga <i>Tijuca atra</i>	Uc (S,T)	mo		X	3-5, 12, 15, 17, 18
PIPRIDAE					
Serra do Mar Tyrant-Manakin <i>Neopelma chrysolophum</i>	Uc (S,T)	se			14
Pin-tailed Manakin <i>Ilicura militaris</i>	Fc (S)	sm, se		X	4, 8, 12, 13
White-bearded Manakin <i>Manacus manacus</i>	Co (S)	se			7-10, 23, 31-33, 35
Blue Manakin <i>Chiroxiphia caudata</i>	Co (S)	mo, sm, se, sc		X	2-9, 11-13, 15, 17, 20, 23, 24, 29, 30, 32, 33, 35
TITYRIDAE					
Sharpbill <i>Oxyruncus cristatus</i>	Uc (S,T)	mo, se			3-5
Greenish Schiffornis <i>Schiffornis virescens</i>	Uc (S,T)	se		X	3-5, 15
Elegant Mourner <i>Laniisoma elegans</i>	Ra (S)	se	PRJ		5
Black-tailed Tityra <i>Tityra cayana</i>	Uc (S)	sm, se			8, 20, 21
Chestnut-crowned Becard <i>Pachyramphus castaneus</i>	Fc (S,T)	se, sc			3-6, 11, 20, 23, 30
White-winged Becard <i>Pachyramphus polychopterus</i>	Co (S)	mo, sm, se, sc			1, 3-5, 7-9, 13-15, 17, 30, 33, 35
Black-capped Becard <i>Pachyramphus marginatus</i>	Uc (S,T)	sm			8, 24, 30
Crested Becard <i>Pachyramphus validus</i>	Uc (S)	se, sc			8, 10
VIREONIDAE					
Rufous-browed Peppershrike <i>Cyclarhis gujanensis</i>	Co (S,T)	se, sc			1-6, 11, 13-18, 20, 22-25, 27, 28
Red-eyed Vireo <i>Vireo olivaceus</i>	Co (S)	se, sc			5-10, 13, 16, 24, 30, 33, 35
Rufous-crowned Greenlet <i>Hylophilus poicilotis</i>	Co (S,T)	se, sc		X	3-6, 11, 13-15, 17, 18
Grey-eyed Greenlet <i>Hylophilus amaurocephalus</i>	Ra (S,T)	se, sc			17
CORVIDAE					
Curl-crested Jay <i>Cyanocorax cristatellus</i>	Uc (S)	pa			25, 26
HIRUNDINIDAE					
Blue-and-white Swallow <i>Pygochelidon cyanoleuca</i>	Co (S)	sc, pa			1, 3, 4, 7-9, 11, 12, 20, 22, 23, 25-28, 30, 33-35
Southern Rough-winged Swallow <i>Stelgidopteryx ruficollis</i>	Co (S)	sc, pa			7-9, 23-29, 32-35
Brown-chested Martin <i>Progne tapera</i>	Uc (S)	sc, pa			24, 25, 27, 28, 32
Grey-breasted Martin <i>Progne chalybea</i>	Uc (S)	sc			24, 35
Barn Swallow <i>Hirundo rustica</i>	Ra (S)	sc, pa			11
TROGLODYTIDAE					
Southern House Wren <i>Troglodytes musculus</i>	Co (S)	sc			1, 3, 7-9, 11, 14, 15, 20, 21, 23, 25-30, 32-35
Moustached Wren <i>Pheugopedius genibarbis</i>	Uc (S)	sc			8, 12, 30
Long-billed Wren <i>Cantorchilus longirostris</i>	Fc (S)	sc			7, 9, 31
TURDIDAE					
Yellow-legged Thrush <i>Turdus flavipes</i>	Co (S,T)	mo, se			1-6, 12, 15, 17, 24, 30-33
Rufous-bellied Thrush <i>Turdus rufiventris</i>	Co (S,T)	se, sc			1, 3-9, 11, 13, 15, 20, 21, 25, 27-31, 33, 34
Pale-breasted Thrush <i>Turdus leucomelas</i>	Co (S)	se, sc			1, 4, 8, 13, 15, 20, 23, 29, 30, 32, 33
Creamy-bellied Thrush <i>Turdus amaurochalinus</i>	Uc (S)	sc			1, 7
White-necked Thrush <i>Turdus albicollis</i>	Co (S,T)	se			2-5, 8, 20, 29, 30, 32, 33, 35
MIMIDAE					
Chalk-browed Mockingbird <i>Mimus saturninus</i>	Fc (S)	pa			7, 9, 15, 23, 25-27, 33, 34
COEREVIDAE					
Bananaquit <i>Coereba flaveola</i>	Co (S,T)	se, sc			1, 5, 8, 20, 23, 29, 30
THRAUPIDAE					
Cinnamon Tanager <i>Schistochlamys ruficapillus</i>	Uc (S,T)	sc, hg			18, 19, 25-27

Cotinga 3 I**Birds in the Parque Estadual dos Três Picos, Rio de Janeiro state, south-east Brazil**

Olive-green Tanager <i>Orthogonys chloricterus</i>	Uc (S,T)	sm		X		8, 30
Orange-headed Tanager <i>Thlypopsis sordida</i>	Uc (S,T)	sc				8, 10, 23, 31
Chestnut-headed Tanager <i>Pyrrhocomma ruficeps</i>	Ra (S)	se				17
Black-goggled Tanager <i>Trichothraupis melanops</i>	Co (S)	se, sc				4-7, 9, 12, 13, 15, 20, 22-24, 27-30
Red-crowned Ant Tanager <i>Habia rubica</i>	Co (S)	se				5, 7-9, 12, 20, 23, 24, 29, 33, 35
Flame-crested Tanager <i>Tachyphonus cristatus</i>	Fc (S)	sm, se				7-9, 22, 24, 29, 30
Ruby-crowned Tanager <i>Tachyphonus coronatus</i>	Co (S)	se, sc		X		1-13, 20, 21
Brazilian Tanager <i>Ramphocelus bresilius</i>	Fc (S)	sc		X		1, 5, 7, 8, 16, 23, 25, 27-31
Sayaca Tanager <i>Thraupis sayaca</i>	Co (S)	sc				1, 3-5, 7-9, 11, 13, 15, 16, 18, 20, 21-23, 29, 30, 33-35
Azure-shouldered Tanager <i>Thraupis cyanoptera</i>	Fc (S,T)	se, sc	NGB	X		1-6, 11, 32
Golden-chevroned Tanager <i>Thraupis ornata</i>	Fc (S,T)	se, sc		X		1-6, 15, 16, 29
Palm Tanager <i>Thraupis palmarum</i>	Fc (S,T)	sc				16, 29, 32
Diademed Tanager <i>Stephanophorus diadematus</i>	Fc (S,T)	sc, hg				14, 18, 19
Fawn-breasted Tanager <i>Pipraeidea melanonota</i>	Uc (S,T)	sc				5, 6, 30
Green-headed Tanager <i>Tangara seledon</i>	Co (S)	sm, se, sc		X		7-9, 20, 23, 24, 29, 30, 32
Red-necked Tanager <i>Tangara cyanocephala</i>	Fc (S)	sm, se		X		7-9, 21, 29
Brassy-breasted Tanager <i>Tangara desmaresti</i>	Co (S)	se, sc		X		1, 2, 4-6, 11, 13, 14, 17, 18, 24, 25, 27, 28
Burnished-buff Tanager <i>Tangara cayana</i>	Co (S)	sc				1, 7, 9, 14, 16, 25-28
Swallow Tanager <i>Tersina viridis</i>	Uc (S)	mo				4, 12
Blue Dacnis <i>Dacnis cayana</i>	Fc (S)	se, sc				7-9, 14, 20, 25, 27-29
Green Honeycreeper <i>Chlorophanes spiza</i>	Ra (S)	sm	VRJ			20
Rufous-headed Tanager <i>Hemithraupis ruficapilla</i>	Fc (S,T)	sm, se		X		5, 7-9, 22, 24, 29, 32
Yellow-backed Tanager <i>Hemithraupis flavicollis</i>	Uc (S,T)	se, sc				8, 24, 30, 32
Chestnut-vented Conebill <i>Conirostrum speciosum</i>	Uc (S)	sc				8, 24, 30
EMBERIZIDAE						
Rufous-collared Sparrow <i>Zonotrichia capensis</i>	Co (S)	sc, pa				1-3, 5-7, 9, 13-16, 18, 19, 25-27
Uniform Finch <i>Haplospiza unicolor</i>	Uc (S,T)	sc		X		8, 11
Bay-chested Warbling Finch <i>Poospiza thoracica</i>	Uc (S)	hg		X		19
Saffron Finch <i>Sicalis flaveola</i>	Co (S)	sc, pa				1, 3, 7-9, 15, 18, 25-27, 30, 33, 34
Wedge-tailed Grass Finch <i>Emberizoides herbicola</i>	Uc (S,T)	pa				7, 9
Blue-black Grassquit <i>Volatinia jacarina</i>	Fc (S)	sc, pa				7, 8, 13, 15
Buffy-fronted Seedeater <i>Sporophila frontalis</i>	Ra (S)	mo, sc	VGB, VBR, TRJ	X		29
Temminck's Seedeater <i>Sporophila falcirostris</i>	Ra (S)	mo, sc	VGB, VBR, TRJ	X		29
Lined Seedeater <i>Sporophila lineola</i>	Uc (S)	sc, pa				7, 8
Double-collared Seedeater <i>Sporophila caerulescens</i>	Co (S)	sc, pa				1, 3, 7, 8, 11-13, 15, 20, 21, 23, 25-27, 33, 34
Sooty Grassquit <i>Tiaris fuliginosus</i>	Uc (S,T)	sc				11, 32
Half-collared Sparrow <i>Arremon semitorquatus</i>	Uc (S,T)	mo, sc		X		11, 30
CARDINALIDAE						
Yellow-green Grosbeak <i>Caryothraustes canadensis</i>	Uc (S,T)	se				8, 30, 32
Black-throated Grosbeak <i>Saltator fuliginosus</i>	Uc (S,T)	se		X		20, 22
Buff-throated Saltator <i>Saltator maximus</i>	Uc (S,T)	sc				7, 8
Green-winged Saltator <i>Saltator similis</i>	Uc (S,T)	se				2-6, 30
PARULIDAE						
Tropical Parula <i>Parula pitayumi</i>	Co (S)	se				7-9, 20, 24, 30, 32
Masked Yellowthroat <i>Geothlypis aequinoctialis</i>	Uc (S)	sc				25-28
Golden-crowned Warbler <i>Basileuterus culicivorus</i>	Co (S)	se, sc				2-7, 10-18, 21, 22, 25, 27-29, 31
White-browed Warbler <i>Basileuterus leucoblepharus</i>	Fc (S,T)	mo, se		X		1, 3-6, 14-18
ICTERIDAE						
Crested Oropendola <i>Psarocolius decumanus</i>	Uc (S)	se				1-6, 21, 22, 29
Red-rumped Cacique <i>Cacicus haemorrhous</i>	Uc (S)	se, sc				7, 8, 23, 24, 30, 32, 33, 35
Chopi Blackbird <i>Gnorimopsar chopi</i>	Uc (S)	pa				7, 33, 34
Chestnut-capped Blackbird <i>Chrysomus ruficapillus</i>	Uc (S)	we				8
Giant Cowbird <i>Molothrus oryzivorus</i>	Ra (S)	pa	PRJ			3
Shiny Cowbird <i>Molothrus bonariensis</i>	Uc (S)	sc, pa				1, 3
White-browed Blackbird <i>Sturnella superciliaris</i>	Uc (S)	pa				7, 8
FRINGILLIDAE						
Hooded Siskin <i>Carduelis magellanica</i>	Uc (S)	sc				1, 25-27
Purple-throated Euphonia <i>Euphonia chlorotica</i>	Uc (S)	sc				7, 8
Violaceous Euphonia <i>Euphonia violacea</i>	Co (S)	se, sc				7, 8, 23, 24, 30-32
Orange-bellied Euphonia <i>Euphonia xanthogaster</i>	Fc (S,T)	sm, se				7, 8, 10, 20, 23, 29, 30, 32
Chestnut-bellied Euphonia <i>Euphonia pectoralis</i>	Co (S)	sm, se, sc		X		2-5, 8, 11, 21, 22, 24, 29, 30
Blue-naped Chlorophonia <i>Chlorophonia cyanea</i>	Ra (S)	sm				20
ESTRILDIDAE						
Common Waxbill <i>Estrilda astrild</i>	Uc (S)	pa				12, 15, 30
PASSERIDAE						
House Sparrow <i>Passer domesticus</i>	Uc (S)	sc				7