

Avifauna of a relict mangrove forest in San Pedro, dpto. Piura, Peru

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El relicto de manglar de San Pedro se encuentra en el desierto noroeste peruano y representa una asociación boscosa con una superficie total de 1.200 ha que se constituye como el límite sur del ecosistema de manglares de la costa Pacífica en la América continental. Se ha caracterizado la vegetación y la zonificación ecológica del área de estudio para establecer la preferencia de las especies por los diferentes hábitats. En esta área se ha encontrado 139 especies de aves, 102 residentes y 37 migratorias; cinco son endémicas para el Perú, y 15 están restringidas para la costa del Ecuador y Perú. Se mencionan a las especies más notables, incluyendo a las visitantes durante los eventos de El Niño. Se presenta una lista de las aves con información sobre su preferencia por los diferentes hábitats, abundancia, estatus estacional y evidencias sobre la ocurrencia de la especie.

In the Americas mangroves occur at lagoons, estuaries and rivers on the Atlantic coast, from Florida (USA) and Tamaulipas (Mexico) south to Bahia (Brazil), as far as 12°S. On the Pacific seaboard, they are known from Sonora (Mexico) to 03°30'S in Peru¹³. The mangroves of Tumbes and Zarumilla (MTZ) were declared a National Sanctuary in 1987 and are the most intact representative of this ecosystem in Peru, as well as the southern limit of the range of mangrove on the Pacific coast, though two relict mangroves further south have been identified: Bocapan, near Zorritos (03°44'S) and San Pedro, near Sechura (05°30'S)². That of San Pedro (RMSP) is the subject of the study reported here.

The austral limit of mangrove forest on the Pacific coast coincides with the zone where two important ocean currents meet, the Humboldt and the El Niño. The equatorial El Niño Current consists of warm waters from the north that influence the Pacific coastline as far south as 06°S. The Humboldt Current flows from the south, pushing cold waters north to 06°S, at Cerro Illescas in northern Peru. In this region where mixed water temperatures maintain a mean 22°C, a very notable change in the flora and fauna occurs. Mangrove forests thrive in this region, harbouring a great variety of birds as the soils provide good habitat for molluscs, crabs and other invertebrates, which are important food for birds.

Study site

The zoogeographic region 'Equatorial Pacific Coast' (EPC) comprises arid and semi-arid areas of Ecuador, the Galápagos and north-west Peru, and is influenced by the warm El Niño Current. In Peru, this region is located between 03°56'–13°11'S and 76°09'–81°21' W, with an area of c.4,267,000 ha. The EPC has a median annual temperature of 22°C. It

receives scarce rain in December–March, which rarely exceeds 100 mm p.a. Vegetation is xerophytic with the communities of *Prosopis pallida*, *Acacia macracantha*, *Parkinsonia aculeata*, *Capparis angulata* and *C. ovalifolia* being the most important. Also, extensive stands of plants adapted to salty soil exist, such as *Distichlis spicata*, *Batis maritima*, *Salicornia fruticosa* and *Sesuvium portulacastrum*. Within the region, two ecosystems overlap: one distinctly marine in nature, influenced by the El Niño Current, and the other a wooded littoral, such as the mangrove forest. A total of 289 bird species, 73 of them endemic¹² have been registered here. The RMSP is located in this desert and extends 1,200 ha, representing 0.03% of the EPC in Peru.

The RMSP (05°30'–05°34'S 80°51'–80°53'W) lies 50 km south-west of Piura and 9 km north-east of Sechura, in dpto. Piura. Of the total area of 1,200 ha, mangrove covers c.350 ha. Studies on the north-west coast of Peru by Frizzell⁴ and Koepcke⁵ indicate that, during prehistoric times, the mangrove ecosystem extended from the MTZ to the RMSP, but now a strip of desert c.350 km wide separates them. During El Niño events, heavy rainfall of up to 1,000 mm turns the desert green.

The río Piura does not reach the sea directly but forms a delta: one branch discharges into the Ramon and Ñapique lagoons, another flows occasionally towards the Virilla estuary and a third flows south-west towards Sechura; the final branch forms the main channel through mangrove forest, with a length of c.4 km, and flows north-west finally reaching the sea at a site known locally as 'Bocana de Arena.' In the RMSP, vegetation covers both shores of the main channel and is mostly black mangrove *Avicennia germinans* and some white mangrove *Laguncularia racemosa*.

Methods

Mangrove forest was visited on 16 occasions between February 1993 and December 2004, to cover winter and summer seasons. Each visit involved 8–10 days of field research. Visits included those years of El Niño events (1997–98), in order to observe presence or absence of residents, as well as arrival and departure of migrants. Species were identified by direct observation, their vocalisations, capture in mist-nets and interviews with local people. In addition, the vegetation and ecological zones of the study site were characterised to establish species' preferences for particular habitats.

Results

Habitat zoning

The ecological zoning determined ten habitats and two transitional zones, starting in the semi-desert plain and ending at the mouth of the main channel where this branch of the río Piura flows into the sea, which marks the southernmost limit of mangrove. The ecological zoning of Peruvian mangrove proposed by Peña⁹ was used to classify habitats of the RMSP.

Semi-desert plain. The highest and most distant land from the mangroves; soils are sandy and dry. The associated vegetation is characterised by isolated communities of species such as *Prosopis pallida*, *Acacia macracantha*, *Parkinsonia aculeata*, *Capparis angulata* and *C. ovalifolia*. **Coastal dunes.** These fringe the mangrove forest but, compared to the large dunes of the coastal deserts of Peru, are limited in extent and height. They have also formed inland of the beach and mangroves, some distance from the ocean. The coastal dunes can be partially covered by a dense association of *Distichlis spicata*, *Batis maritima*, *Salicornia fruticosa* and *Sesuvium portulacastrum*. **Salt grassland I.** Located immediately seaward of the semi-desert plain, the sandy soils are overgrown with associations of *Distichlis spicata*, *Batis maritima*, *Salicornia fruticosa* and *Sesuvium portulacastrum*. Some dispersed trees characteristic of the semi-desert plain also occur. The area is slightly influenced by tides that reach the margins of the mangrove, permitting the presence of crabs and some gastropods which attract many birds to feed. **Ecotone between salt grassland and mangrove forest.** A rather narrow zone with associations of *Distichlis spicata*, *Batis maritima*, *Salicornia fruticosa* and *Sesuvium portulacastrum*, though it generally lacks vegetation. The soil is saturated with water due to strong tidal action, and many wading birds use this area. **Mangrove forest.** Grows densely reaching up to 8 m, whilst soils are waterlogged and accumulate a heavy

ground layer of detritus. The ground is overgrown with green algae and foliage, which provide cover for gastropods and crustaceans that attract foraging birds. The aerial roots of black mangrove also create a favourable environment for several gastropods and, in particular, an *Aratus* crab. Some birds use the mangrove branches and foliage to rest and breed. **Ecotone between mangrove forest and the main channel.** A very narrow zone; the waterlogged land lacks vegetation and is strongly influenced by tides. **Main channel.** The río Piura harbours a small islet, and larval forms of saltwater shrimp and fish occur. **Isla San Pedro.** An area of c.24 ha covered almost entirely by black mangrove whilst shores are overgrown with salt grass. Associations of *Schoenoplectus* and *Typha* are also present, these being notably quite rare in mangrove ecosystems. Such associations are, however, numerous upstream in the río Piura and have probably invaded the coast. **Salt grassland II.** Situated immediately behind the mangrove, it appears as a strip of dry sand but is more extensive than Salt grassland I and is not subject to tidal action. Stands of *Distichlis spicata* cover the sandy soil, whilst other plants such as *Batis maritima*, *Salicornia fruticosa* and *Sesuvium portulacastrum* are fewer in number. **Beach.** This zone offers abundant food for wading birds. A biocoenosis is formed, with a fragile balance based upon the organic matter washed ashore, primarily huge masses of seaweed and gastropod shells. In addition, fish and carcasses of marine birds, sometimes even dolphins and seals, provide food for carrion hunters. **Sea.** An exclusively marine environment influenced by the Humboldt and El Niño currents. **Mouth of the main channel.** The sandbanks at the mouth serve as resting areas for many bird species.

Birds

A total of 139 species was recorded, of which five are endemic to Peru and 15 restricted to coastal Ecuador and Peru; 102 are residents and 37 migrants. The latter originate from the following areas: 26 from North America, three from southern South America, five from tropical America and three from the Peruvian high Andes. Indicator species also were found: 13 of the EPC and six of mangrove. The appendix lists all bird species with indications of their habitats, abundance, seasonal status and evidence of occurrence.

Notable species

Endemics to Peru^{10–12}

The following are common / fairly common characteristic species of the Peruvian north coast: Tumbes Hummingbird *Leucippus baeri*, Coastal Miner

Geositta peruviana, Tumbes Tyrant *Tumbezia salvini*, Rufous Flycatcher *Myiarchus semirufus* and Cinereous Finch *Piezorhina cinerea*.

Typical of the Humboldt Current⁶

The following are common and characteristic species of the cold Humboldt Current (some of which make local migrations as far as northern Ecuador): Peruvian Pelican *Pelecanus thagus*, Peruvian Booby *Sula variegata*, Guanay Cormorant *Phalacrocorax bougainvillii*, Blackish Oystercatcher *Haematopus ater*, Band-tailed Gull *Larus belcheri* and Peruvian Tern *Sterna lorata*.

Restricted to the coasts of Ecuador and Peru¹²

Scrub Nightjar *Caprimulgus anthonyi*, Amazilia Hummingbird *Amazilia amazilia*, Short-tailed Woodstar *Myrmia micrura*, Necklaced Spinetail *Synallaxis stictothorax*, Pacific Elaenia *Myiopagis subplacens*, Grey-and-white Tyrannulet *M. leucospodia*, Short-tailed Field-tyrant *Muscigralla brevicauda*, Baird's Flycatcher *Myiodynastes bairdii*, Fasciated Wren *Campylorhynchus fasciatus*, Long-tailed Mockingbird *Mimus longicaudatus*, White-edged Oriole *Icterus graceannae*, Sulphur-throated Finch *Sicalis taczanowskii*, Crimson-breasted Finch *Rhodospingus cruentus*, Tumbes Sparrow *Aimophila stolzmanni* and Collared Warbling-finch *Poospiza hispaniolensis*.

Visitors during El Niño events

White-necked Heron *Ardea cocoi*

Uncommon: seen frequently during the study period; but commoner during the summer or during El Niño events.

Roseate Spoonbill *Platalea ajaja*

An occasional visitor during El Niño events: two on 27 November 1997 and one on 14 December 2002. According to local fishermen a pair stayed one week during May 2002.

White Ibis *Eudocimus albus*

Rare: three on 27 November 1997 and two on 14 December 2002. An occasional visitor during El Niño events, but fairly common in mangrove forests of the MTZ.

Andean Coot *Fulica ardesiaca*

Rare: a group of 10–15 and other dispersed individuals on 28 November 1997 and 3 January 1998. The pale-fronted morph with a white bill and a white or yellow frontal shield visits the area. Some members of Andean populations regularly migrate to the central and south coasts of Peru in summer (where the species is also a common breeding resident), but others may reach as far as the north-west coast.

Andean Gull *Larus serranus*

Rare: a group of 11 on 7 October 1997 during an El Niño event, and another on 5 July 2002. This is a typical Andean species that occasionally migrates to the central and south Peruvian coast in summer.

Masked Water-tyrant *Fluvicola nengeta*

Rare: one on 8 October 1997 and another on 11 December 2002. Fairly common in the MTZ further north¹¹, and these two sightings probably represent a range extension.

Crimson-breasted Finch *Rhodospingus cruentus*

Rare: two small flocks observed on 27 November and 16 December 1997, and a single bird on 12 December 2002. Although this species prefers arid scrub with dense grass cover, during the heavy rains of El Niño most of the semi-desert plain turns green offering a much larger suitable foraging area.

Other noteworthy species

Great Grebe *Podiceps major*

Common; usually on open waters near the mouth of the main channel but also in the latter. According to Fjeldså & Krabbe³ the population on Peruvian coasts warrants naming subspecifically, but it has yet to be so described.

Tricoloured Heron *Egretta tricolor*

Rare: singles on 3 January 1994, 5 August 2000 and 13–14 June 2002. Generally rare on the north coast of Peru, though it is fairly common in mangroves forest of the MTZ, and regular in the southern wetlands of Peru.

Purple Gallinule *Porphyryla martinica*

Rare: five during visits on 3 January 1994, 6 August 2000 and 14 June 2002. According to local people, this species is much commoner in the rice fields of Piura and the species makes seasonal movements to Ramon and Napique lagoons.

Blue-winged Teal *Anas discors*

Uncommon: a group of five remained during an El Niño event, between 28 November 1997 and 4 January 1998. A migrant from North America in September–March.

Wren-like Rushbird *Phleocryptes melanops* /

Many-coloured Rush-tyrant *Tachuris rubrigastra*

Considered uncommon and rare, respectively, these species inhabit a small area of habitat dominated by *Schoenoplectus* sp. and *Typha* sp.

Yellow Warbler *Dendroica petechia*

There are two forms of this species known in Peru, one migratory (*D. p. aestiva*) and the other resident (*D. p. peruviana*). The latter is fairly common in the

RMSP, though it was previously thought to range only as far south as dpto. Tumbes, Peru, in the MTZ¹⁰. Thus, sightings of this species in the RMSP extend its range further south.

Concluding remarks

Due to the overlap of a distinctly marine ecosystem and a wooded littoral zone with relict mangrove forest, the RMSP represents a favourable area for many birds resident in the EPC and a strategic point for many migrants that are native to North America, southern South America, tropical America and the Andean highlands of Peru. Despite this, the area has received very little attention from ornithologists, or local government. Potential threats include fish meal factories and the probable construction of a factory to produce phosphorus fertilisers due to a very rich deposit of rock phosphate close to the mangrove forest. The year-round activities of fisherman and crustacean collectors, as well as saltwater shrimp larvae collectors in November–May, including the establishment of permanent and temporary camps, have led to the loss of some forested areas. Short-term measures are required to permit the sustainable utilisation of natural resources in the RMSP by the local population.

The present study forms part of a technical proposal that is being developed with the primary purpose of implementing a municipal conservation area of 1,200 ha at the RMSP, due to its considerable biological and ecological importance, and strategic location on the north-west Peruvian coast. The proposal will include an integrated plan that will: (1) preserve the RMSP, (2) create social and economic benefits for the local population, (3) develop a research programme directed at understanding the biological diversity, ecosystems and landscape, (4) manage sustainably mangrove resources, and (5) provide training in the management and conservation of natural resources for a new generation of biologists, ecologists, technicians and community leaders.

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Appendix: Avifaunal inventory of relict mangrove forest in San Pedro, dpto. Piura, Peru.

Taxonomy generally follows Meyer de Schauensee⁷, Parker et al.⁸ and Stotz et al.¹².

Habitats: Semi-desert plain (1), Coastal dunes (2), Salt grassland I (3), Ecotone between salt grassland and mangrove forest (4), Mangrove forest (5), Ecotone between mangrove forest and main channel (6), Main channel (7), San Pedro island (8), Salt grassland II (9), Beach (10), Sea (11), and Mouth of main channel (12). Codes: Abundance C = common (seen or heard daily in moderate to large numbers); F = fairly common (seen or heard daily in small numbers); U = uncommon (seen or heard once in three days), in small numbers; R = rare (seen or heard once in six days or less frequently), in small numbers; X = uncertain (includes rare migrants and probable vagrants with fewer than five sightings). Seasonal status r = resident; mn = migrant from North America (September–March); ms = migrant from South America (March–October); at =

migrant from tropical America; aa = migrant from the high Andes. Evidence of occurrence S = sight record; H = vocalisation heard but not recorded; M = mist-netted; P = photographed. Indicator species * = Equatorial Pacific coast; ** = Mangrove ecosystem.

English name	Scientific name	Habitats	Abundance	Status	Evidence
White-tufted Grebe	<i>Podiceps rolland</i>	7	C	r	S
Great Grebe	<i>Podiceps major</i>	7	F	r	S
Pied-billed Grebe	<i>Podilymbus podiceps</i>	7	U	r	S
Brown Pelican	<i>Pelecanus occidentalis</i>	5-7,9,11,12	F	r	S
Peruvian Pelican	<i>Pelecanus thagus</i>	5-7,9,11,12	C	r	S
Peruvian Booby	<i>Sula variegata</i>	11,12	C	r	S
Blue-footed Booby	<i>Sula nebouxii</i>	11,12	C	r	S
Masked Booby	<i>Sula dactylatra</i>	11	R	r	S
Neotropic Cormorant	<i>Phalacrocorax olivaceus</i>	7,10-12	C	r	S
Guanay Cormorant	<i>Phalacrocorax bougainvillii</i>	10-12	C	r	S
Magnificent Frigatebird	<i>Fregata magnificens</i>	5,9,11,12	C	r	S
White-necked Heron	<i>Ardea cocoi</i>	6,7	R	r	S
Snowy Egret	<i>Egretta thula</i>	5,6,8,10	C	r	S
Great Egret	<i>Egretta alba</i>	5-8	C	r	S
Little Blue Heron**	<i>Egretta caerulea</i>	5-8	F	r	S
Tricoloured Heron	<i>Egretta tricolor</i>	6,7	R	r	S
Striated Heron	<i>Butorides striatus</i>	5,8	U	r	S
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	5,6,8	U	r	S
Wood Stork	<i>Mycteria americana</i>	6,7	R	at	S
W. Ibis**	<i>Eudocinus albus</i>	5-7	X	at	S
Roseate Spoonbill	<i>Platalea ajaja</i>	5,6,7	X	at	S
Chilean Flamingo	<i>Phoenicopterus chilensis</i>	6,7,12	C	r	S
White-cheeked Pintail	<i>Anas bahamensis</i>	5-7	C	r	S
Blue-winged Teal	<i>Anas discors</i>	5-7	U	mn	S
Cinnamon Teal	<i>Anas cyanoptera</i>	5-7	C	r	S
Black Vulture	<i>Coragyps atratus</i>	1-3,10	C	r	S
Turkey Vulture	<i>Cathartes aura</i>	1,2,9,10	C	r	S
Red-backed Hawk	<i>Buteo polyosoma</i>	1-3	F	r	S
Harris's Hawk*	<i>Parabuteo unicinctus</i>	1-3	U	r	S
Cinereous Harrier	<i>Circus cinereus</i>	1-3,10	R	r	S
Osprey	<i>Pandion haliaetus</i>	2,3,5,10,11	F	mn	S
Crested Caracara	<i>Polyborus plancus</i>	1-3,10	F	r	S
Peregrine Falcon	<i>Falco peregrinus</i>	1-3,10	R	mn	S
American Kestrel	<i>Falco sparverius</i>	1,3	U	r	S
Plumbeous Rail	<i>Rallus sanguinolentus</i>	4-6,8	C	r	S
Clapper Rail**	<i>Rallus longirostris</i>	4-6	F	r	S
Common Moorhen	<i>Gallinula chloropus</i>	4-6,8	C	r	S
Purple Gallinule	<i>Porphyryla martinica</i>	4-6,8	X	at	S
Andean Coot	<i>Fulica ardesiaca</i>	6-8	X	aa	S
American Oystercatcher	<i>Haematopus palliatus</i>	2,6,9,10	F	r	S
Blackish Oystercatcher	<i>Haematopus ater</i>	4-6,10	U	r	S
Black-bellied Plover	<i>Pluvialis squatarola</i>	6,9,12	C	mn	S
Semipalmated Plover	<i>Charadrius semipalmatus</i>	6,9,12	C	mn	S
Snowy Plover	<i>Charadrius alexandrinus</i>	2,6,9,12	F	r	S
Collared Plover	<i>Charadrius collaris</i>	6,9,12	U	at	S
Killdeer	<i>Charadrius vociferus</i>	2,4,6,8,12	C	r	S
Wilson's Plover	<i>Charadrius wilsonia</i>	6,10,12	U	mn	S
Tawny-throated Dotterel	<i>Oreophilus ruficollis</i>	1,3,4	U	r	S
Ruddy Turnstone	<i>Arenaria interpres</i>	6,10,12	F	mn	S
Lesser Yellowlegs	<i>Tringa flavipes</i>	6,8,12	C	mn	S
Greater Yellowlegs	<i>Tringa melanoleuca</i>	6,8,12	C	mn	S
Spotted Sandpiper	<i>Actitis macularius</i>	6,8,12	F	mn	S
Willet	<i>Catoptrophorus semipalmatus</i>	6,10,12	F	mn	S
Least Sandpiper	<i>Calidris minutilla</i>	6,8,12	C	mn	S
Baird's Sandpiper	<i>Calidris bairdii</i>	6,10,12	U	mn	S
Semipalmated Sandpiper	<i>Calidris pusilla</i>	6,10,12	C	mn	S
Western Sandpiper	<i>Calidris mauri</i>	6,10,12	C	mn	S
Sanderling	<i>Calidris alba</i>	2,6,10,12	C	mn	S
Whimbrel	<i>Numenius phaeopus</i>	4,6,7,10,12	F	mn	S
Short-billed Dowitcher	<i>Limnodromus griseus</i>	4,6,7,10,12	C	mn	S
Black-necked Stilt	<i>Himantopus mexicanus</i>	6-8,12	C	r	S
Peruvian Thick-knee	<i>Burhinus superciliosus</i>	1-4	U	r	S
Least Seedsnipe	<i>Thinocorus rumicivorus</i>	2,3	R	r	S
skua sp.	<i>Catharacta</i> sp.	10,12	U	ms	S
Grey Gull	<i>Larus modestus</i>	4,7,10,12	C	ms	S
Band-tailed Gull	<i>Larus belcheri</i>	4,7,10-12	C	r	S
Kelp Gull	<i>Larus dominicanus</i>	4,7,10-12	C	r	S
Laughing Gull	<i>Larus atricilla</i>	4,7,10-12	F	r	S
Grey-hooded Gull	<i>Larus cirrocephalus</i>	4,7,10-12	F	ms	S
Andean Gull	<i>Larus serranus</i>	7,10,12	X	aa	S
Franklin's Gull	<i>Larus pipixcan</i>	4,7,10,12	C	mn	S
Common Tern	<i>Sterna hirundo</i>	4,7,10-12	C	mn	S
Peruvian Tern	<i>Sterna lorata</i>	4,7,10,12	U	r	S
Royal Tern	<i>Sterna maxima</i>	4,7,10,12	F	mn	S
Elegant Tern	<i>Sterna elegans</i>	4,7,10,12	C	mn	S
Sandwich Tern	<i>Sterna sandvicensis</i>	4,7,10,12	U	mn	S
Black Skimmer	<i>Rynchops niger</i>	6,7,12	C	r	S
Eared Dove	<i>Zenaida auriculata</i>	1,3	F	r	S
White-winged Dove	<i>Zenaida asiatica</i>	1,3	C	r	S
Croaking Ground-dove	<i>Columbina cruziana</i>	1,3	C	r	S
Dark-billed Cuckoo	<i>Coccyz melacoryphus</i>	1,5	R	aa	S
Groove-billed Ani	<i>Crotophaga sulcirostris</i>	1,3,8	C	r	S
Barn Owl	<i>Tyto alba</i>	1	R	r	SH
Burrowing Owl	<i>Athene cucularia</i>	1	F	r	S
Scrub Nightjar*	<i>Caprimulgus anthonyi</i>	1,3	U	r	SHM
Chimney Swift	<i>Chaetura pelagica</i>	1,5	X	mn	S
Tumbes Hummingbird*	<i>Leucippus baeri</i>	1,5	F	r	S
Amazilia Hummingbird	<i>Amazilia amazilia</i>	1,5	C	r	S
Long-billed Starthroat	<i>Heliomaster longirostris</i>	1,5	U	r	S
Short-tailed Woodstar*	<i>Myrmia micrura</i>	1,5	U	r	S
Ringed Kingfisher	<i>Ceryle torquata</i>	5,7	U	r	S
Coastal Miner*	<i>Geositta peruviana</i>	1-3	C	r	SM
Pale-legged Hornero	<i>Furnarius leucopus</i>	1	C	r	SH
Wren-like Rushbird	<i>Phleocyptes melanops</i>	8	X	r	SH
Necklaced Spinetail*	<i>Synallaxis stictothorax</i>	1	C	r	SM
Southern Beardless Tyrannulet	<i>Camptostoma obsoletum</i>	1,5	C	r	S
Mouse-coloured Tyrannulet*	<i>Phaeomyias murina</i>	1,5	C	r	SM
Pacific Elaenia	<i>Myiobagis subplacens</i>	1,5	U	r	S
Grey-and-white Tyrannulet*	<i>Myiobagis leucospada</i>	1,3	F	r	SM
Many-coloured Rush-tyrant	<i>Tachuris rubrigastra</i>	8	X	r	S
Bran-coloured Flycatcher	<i>Myiophobus fasciatus</i>	1,5,8	F	r	S
Vermilion Flycatcher	<i>Pyrocephalus rubinus</i>	1,5,8	C	r	S

Masked Water-tyrant <i>Fluvicola nengeta</i>	5	U	r	S	Great-tailed Grackle** <i>Quiscalus mexicanus</i>	5	F	r	S
Tumbes Tyrant <i>Tumbezia salvini</i>	1,5	F	r	S	White-edged Oriole <i>Icterus graceanae</i>	1	C	r	S
Short-tailed Field-tyrant* <i>Muscigralla brevicauda</i>	1,3	F	r	S	Yellow-tailed Oriole <i>Icterus mesomelas</i>	1	F	r	S
Rufous Flycatcher* <i>Myiarchus semirufus</i>	1	F	r	S	Peruvian Red-breasted Meadowlark <i>Sturnella bellicosa</i>	1,3	C	r	S
Baird's Flycatcher <i>Myiodynastes bairdi</i>	1,5	C	r	S	Yellow Warbler** <i>Dendroica petechia</i>	4-6,9	F	r	SM
Tropical Kingbird <i>Tyrannus melancholicus</i>	1,5	F	r	S	Masked Yellowthroat <i>Geothlypis aequinoctialis</i>	1,5	U	r	S
Mangrove Swallow** <i>Tachycineta albilinea</i>	3,7	F	r	S	Bananaquit <i>Coereba flaveola</i>	1	C	r	S
Blue-and-white Swallow <i>Notiochelidon cyanoleuca</i>	3,7,8,12	C	r	S	Cinereous Conebill <i>Conirostrum cinereum</i>	1	F	r	S
Barn Swallow <i>Hirundo rustica</i>	3,7	R	mn	S	Streaked Saltator <i>Saltator albicollis</i>	1	C	r	S
Chestnut-collared Swallow <i>Hirundo rufocollaris</i>	3,7,8	R	mn	S	Blue-black Grassquit <i>Volatinia jacarina</i>	1	U	r	S
Fasciated Wren <i>Campylorhynchus fasciatus</i>	1	C	r	S	Cinereous Finch* <i>Piezorhina cinerea</i>	1,5	C	r	SM
Superciliated Wren <i>Thryothorus superciliaris</i>	1	C	r	S	Variable Seed-eater <i>Sporophila americana</i>	1,8	U	r	S
House Wren <i>Troglodytes aedon</i>	1,5,8	C	r	S	Sulphur-throated Finch* <i>Sicalis taczanowskii</i>	1,5	C	r	S
Long-tailed Mockingbird <i>Mimus longicaudatus</i>	1	C	r	S	Saffron Finch <i>Sicalis flaveola</i>	1,5	U	r	S
Long-billed Gnatwren <i>Ramphocenus melanurus</i>	1	C	r	S	Crimson-breasted Finch <i>Rhodospingus cruentus</i>	1	X	r	S
Tropical Gnatcatcher <i>Poliopitila plumbea</i>	1,5	C	r	S	Tumbes Sparrow* <i>Aimophila stolzmanni</i>	4-6,9	F	r	S
Yellowish Pipit <i>Anthus lutescens</i>	1-3	X	r	S	Rufous-collared Sparrow <i>Zonotrichia capensis</i>	1,3,4,5	F	r	S
Shiny Cowbird <i>Molothrus bonariensis</i>	1,5	C	r	S	Collared Warbling-finch <i>Poospiza hispaniolensis</i>	1	U	r	S
Scrub Blackbird <i>Dives warszewiczi</i>	1	C	r	S					