

Avifauna of North-western Peru Biosphere Reserve and its environs

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Summary

The avifauna of the environs of North-western Peru Biosphere Reserve (NPBR) is herein catalogued. This reserve embraces the largest example of protected Neotropical Pacific xeric forests, a habitat complex much scarcer than rainforests. NPBR is very important conservationally because much of the adjoining dry-forest region of south-western Ecuador has been denuded. Exact locality records and their specific literature sources are furnished for North American migrants and those species which have inhabited the vicinity of NPBR but have not been reported there by the authors of reference books that address avian geography. For each tabulated avian species, the earliest attribution or one of the earliest attributions for a specific record of that taxon in the environs of NPBR is provided. Also, 16 species that are threatened, or are endemic to a short strip of extreme south-western Ecuador and north-western Peru, are noted.

La avifauna del entorno de la Reserva de la Biósfera del Nor-Oeste Peruano (RBNO) es registrado aquí. Esta reserva abarca el ejemplo más grande de bosques secos Neotropicales Pacíficos que están protegidos. Este complejo único de hábitats es mucho más escaso que selvas húmedas. La RBNO es muy importante de la punta de vista de conservación porque mucha de la región de los bosques secos colindantes en Ecuador sudoeste ha sido talada. Este escrito facilita registros exactos de localidad y sus fuentes bibliográficas específicas tocante a las especies emigrantes norteamericanas y aquellas aves que han habitado en las inmediaciones de la RBNO pero cuya existencia allá no se ha asentado por los autores de libros ornitológicos de consulta que tratan sobre la geografía avícola. Por cada especie de ave tabulada, es proporcionada la atribución más antigua o una de las atribuciones más antiguas para un registro específico de ella en el entorno de la RBNO. También, son indicadas en el apéndice las 16 especies que están amenazadas con extinción o que son endémicas a una faja terrestre corta de Ecuador sudoeste extremo y el Perú noroeste extremo.

Description of North-western Peru Biosphere Reserve and its resources

The North-western Peru Biosphere Reserve (NPBR) – Reserva de la Biósfera del Nor-Oeste Peruano (RBNO) – was ratified by the International Committee of the Man and the Biosphere Programme of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) on 1 March 1977 (Anon. 1988). This Peruvian reserve comprises 234,374 ha in the hooked digitation of extreme north-western Peru (Figure 1). Situated in the political departments of Tumbes and Piura, the coterminous NPBR (3°41' to 4°26'S 80°08' to 80°57'W) encompasses the Reserved Zone of Tumbes (Zona Reservada de Tumbes; formerly

Tumbes National Forest) on the north with an area of 75,102 ha, Hills of Amotape National Park (Parque Nacional Cerros de Amotape) in the centre with an area of 91,300 ha, and El Angolo Hunting Reserve (Coto de Caza El Angolo) on the south with an area of 65,000 ha (sites 1–3, Figure 1). Mangroves of Tumbes National Sanctuary (Santuario Nacional Manglares de Tumbes; 3°24' to 3°27'S 80°13' to 80°19'W), which embraces 2,972 ha on the coast of the Pacific Ocean (site 4, Figure 1), has recently become a part of NPBR.

NPBR is the largest protected example of Neotropical Pacific dry forests. Such forests in adjoining Ecuador have largely been cleared. The reserve's varied topography includes mangroves, desert scrub, and multiple dry-forest communities in the Brea chain of low (largely <1,400 m) mountains (Anon. 1988). Mean annual precipitation ranges from 125 to 2,000 mm. Averaging 800 mm in Hills of Amotape National Park, rainfall is lower in El Angolo Hunting Reserve and Mangroves of Tumbes National Sanctuary, but higher in the Reserved Zone of Tumbes. About 85% of it falls from January to April (Anon. 1988).

The exploitation of natural resources in NPBR needs to be ameliorated. Of the live birds that are captured in Peru for future sale, c.70% are Grey-cheeked Parakeets *Brotogeris pyrrhopterus* and 25% are Red-masked Parakeets *Aratinga erythrogenys* (Anon. 1988). In 1987, seizures of psittacids equalled 5,700 about Tutumo Hill and 9,000 about El Chailo (Figure 1). In 1974, Peru established a moratorium against the felling of healthy trees in the departments of Tumbes and Piura (Balmaceda 1986). Despite the prohibition, much surreptitious logging has occurred near roads, particularly near Rica Playa and Matapalo (Figure 1) (Anon. 1988). Several logging roads bisect the access road bordering the Reserved Zone of Tumbes and La Angostura Creek. There is a threat that illegal logging could extend into the zone.

Thirteen species of threatened birds have been reported in the vicinity of NPBR (Figure 1) including three that are also endemic to a stretch of south-western Ecuador and north-western Peru (see Appendix). Collar *et al.* (1992) give the locality records for these taxa. One of these species is the White-winged Guan *Penelope albipennis*, which J. Stolzmann declared had been common in the Tumbes vicinity around 1846, but which owing to persecution had retreated to mangroves (Taczanowski 1886: 271–273). In 1876, the species could always be found on Condesa Islet in Tumbes River delta. A male specimen was collected by Stolzmann at Santa Lucía (Taczanowski 1877b) on 18 December 1876. A female specimen from Antonio Raimondi's collection (Taczanowski 1886: 271–273) was taken at Pabur Hacienda, to the east (Vaurie 1972) or south-east (de Macedo-Ruiz 1979) of Piura city (Figure 1). During the next century, the White-winged Guan was not detected but then, in September 1977, it was rediscovered at 5°35'S 79°48'W (de Macedo-Ruiz 1979) in southern Piura Department (see Peñaherrera del Aguila 1989: 229, 273). A more recent record of the White-winged Guan at 5°31'S (Collar *et al.* 1992: 115–119) was actually also in Piura Department. Peñaherrera del Aguila (1989) showed the tip of the northernmost projection of Lambayeque Department to be at 5°32.2'S (p.229) or 5°32.0'S (p.273). In this century, the species has not been confirmed in the area shown in Figure 1.

Objectives

It is hoped that the cataloguing of the avifauna of the environs of NPBR will attract professional and amateur ornithologists there, and that the augmented interest in the reserve will enhance its conservation. The avifaunal list that has been developed uses a symbol to show those avian species that have occurred in the immediate Ecuadorian surroundings of NPBR but not in extreme north-western Peru. Perhaps some people will be inspired to search for these species in NPBR (and in Peru).

Also, it is my aim to contribute to Neotropical avian geography. Omitted records (not all are recent), and errors in ornithological reference books that treat the ranges of taxa that inhabit the environs of NPBR, are delineated so that the readers of these publications will be aware of them, but also in the anticipation that the authors of future volumes addressing South American avian distributions will use the data provided.

Former avian collection sites

Several avian collection sites in the vicinity of NPBR have been assigned by ornithologists to the wrong country, department or province. This confusion has partially resulted from ornithologists earlier in this century using imprecise maps. Another source of misunderstanding is the duplication of names for towns that exist (or existed) across a border from each other, or in the same department or province. The marked loop in the Ecuador/Peru frontier a short distance south-east of south-eastern Hills of Amotape National Park (Figure 1) has also probably led to errors in ascribing collection sites to a specific country.

Carriker's (1935, Bond 1945) La Laja (V1) collection site (3°50'S 80°10'W), located along Zarumilla River and the border of Ecuador and Peru (Figure 1), is not situated in northern Piura Department but rather in Tumbes Department, Peru (Vaurie 1972). La Laja (V1), as well as Laja (V2) north-eastward in Ecuador, was derived from Vaurie's (1972) gazetteer since the American Geographical Society's Hispanic America topographic map entitled Quito: South (S.) A-17 (1938), which Vaurie used to examine the part of Figure 1 that is north of 4°S, is out of print. Figure 1 gives reference sources for the localities of avian collection shown in that map.

A perusal of the itinerary of Harry Watkins (Chapman 1926: 77–79), who collected birds within the border area of Peru and Ecuador in 1919, aids in the elucidation of several ambiguous collection sites. Watkins followed an indirect route from Paita, Piura Department, Peru, to Tumbes, Peru (Figure 1).

He journeyed from Paita to Sullana and thence 61 km along Chira River to Lamor (= Alamor, Peru; see Zimmer 1950: 4). Then he walked the short stretch of Alamor River between Chira River and Pilares River, and travelled up Pilares River to the town of Pilares (Figure 1). Some distance south of Pilares on the 1979 Ecuadorian map, *República del Ecuador: Mapa Geográfico* (REMG), the Ecuador-Peru border veers westward 1 km from Pilares River; Pilares (E) (Figure 1) sits immediately east of the river, well inside Ecuador on that map. Pilares (B) (Figure 1) lies even farther east (Chapman 1926, plate 30). However, Peñaherrera del Aguila (1989: 229) placed Hito Papayo Pilares (= Pilares) in the

middle of Pilares River and the international border. According to the Operational Navigational Chart (ONC) M-25 (1990) of the Defense Mapping Agency Aerospace Center (St Louis, Missouri, U.S.A.), Pilares lies largely west of Pilares River. The American Geographical Society's Piura Map S. B-17 shows Pilares (G) (Figure 1) on the west side of Pilares River within Peru. Thus, avian locality labels of "Pilares, Peru" may indeed be valid.

From the village of Pilares, Watkins followed Pilares River 29 km upstream to its source (at the north-west border of the Ecuadorian protrusion into Peru; Figure 1). Then he proceeded to his next collection site of Paletillas [E1] (Figure 1; nearly agreeing with Paynter and Traylor's 1977 coordinates which place it only 1.5 km farther south) situated beside a small stream (Paletillas Creek) in the Tumbes River watershed. From around 1921 to 1977 (see Paynter and Traylor 1977), Chapman and other authors erroneously placed this camp and Milagros (see below) in Piura Department, Peru. Vaurie (1972) mistakenly noted that on the American Geographical Society's Piura S. B-17 map, Paletillas is located at 4°15'S 80°25'W in Piura Department. Paletillas does not occur anywhere in western Piura Department, Peru, or Loja Province, Ecuador, on the latest version (1948) of map S. B-17. After leaving Paletillas, Watkins tortuously hiked 29 km to the base of Cerro Verde and an additional 16 km to the Milagros (E) collection site (Figure 1).

From Milagros (E), Watkins presumably proceeded north-eastward along Alamor River, traversing it and its tributaries many times. His log states that he crossed "innumerable quebradas". After a 39-km trek, Watkins reached a camp near Alamor, Ecuador, that was located on the highest ridge between Alamor River and Tumbes (= Puyango) River (Figure 1) (Chapman 1926: 78, 703). The elevation (1,326 m) of the Alamor camp (Chapman 1926: 78, plate 17) suggests that it was situated a few kilometres east or north-east of the city of Alamor. An apparent typographical error in the appendix of Chapman's (1926: 703) monograph, noting the Alamor camp elevation as 4,550 feet (1,387 m), was repeated by Zimmer (1950). Finally, Watkins journeyed to Puyango, and thence to Tumbes via Lajilla (south of Figueroa) (Figure 1).

Because land elevations significantly influence avian ranges, the elevations of the former localities of avian collection shown in Figure 1 are indicated below. Elevations were provided by Wiedenfeld *et al.* (1985) for El Caucho and Campo Verde; by Peñaherrera del Aguila (1989) for Tumbes, Zorritos, Talara, Sullana, Piura and Paita; by Paynter and Traylor (1977) for Palmales, Arenillas and Santa Rosa; by Best *et al.* (1992: 148) for Alamor (in part) and Vicentino; by Bloch *et al.* (1991) for the "wetland"; and by Chapman (1926) for many sites. Elevations of a few collection localities were estimated using the lines of topography on REMG, map S. B-17, or map ONC M-25. The elevation of El Angolo was reported to be 700 m by Schulenberg and Parker (1981), and shown to be 500–700 m by Map S. B-17 and 900–1,200 m by REMG.

The elevation of NPBR ranges from sea level in Mangroves of Tumbes National Sanctuary and from 200 m in northern Hills of Amotape National Park to 1,618 m at Carrizal Mountain (Figure 1) (Anon. 1988). Few mountains exceed 1,400 m in elevation. Avian survey sites and their elevations in Tumbes Department, Peru, were Santa Lucía (or Santa Luzia) and Puerto Pizarro: c.0 m; Zorritos (or Sorritos): 6 m, Tumbes (or Túmbez): 7 m; Lechugal and Rica Playa:

<150 m; El Caucho: c.400 m; La Laja: 610 m; Campo Verde: 750 m; and Lajilla (or La Lajilla) (south of Figueroa): 700–900 m. Collection sites in Piura Department, Peru, were Paita (or Payta): 3 m; Talara: 7 m; Piura: 29 m; Sullana: 60 m; Somate (=Samate in Chapman 1926): <100 m; Romeros: c.100 m; Alamor (=Chapman's [1926] Lamor or La Lamor): 107 m; Pilares: 230 m; Chilaco: 100–400 m; and El Angolo (or Angolo): 500–1,200 m. Collection sites from Loja Province, Ecuador, were Puyango (= Pullango or Rio Pullango): 275 m and/or 305 m; Paletillas: 472 m; Milagros: 670 m; La Puente: 760 m; Cebollal: 945 m; Guainche: 975 m; Las Piñas: 1,100 m; Vicentino: 900–1,450 m; and Alamor: 1,325 m and 1,200–1,450 m. Collection sites in El Oro Province, Ecuador, were the "wetland": <50 m, Palmales (or Palmal): 93 m, Santa Rosa and Arenillas: c.100 m, and Piedras: <150 m.

Updating the ranges of the avifauna of NPBR's environs (area in Figure 1)

The avifauna of the area depicted in Figure 1 is taxonomically arranged in the Appendix. However, the foremost reference books treating avian distributions there fail to place (or else misplace) many taxa appearing in the Appendix in the area of Figure 1. Exact observational or collection sites of these omitted or misplaced species and specific attributions for these avian records are provided below. It is hoped that this information will benefit many investigators as well as the authors of future publications addressing South American avian geography. Reference books treating multiple orders of birds that are particularly useful in examining ranges of South American taxa are Ridgely and Tudor's (1989, 1994) two volumes dealing with South American passerines, Blake's (1977) reference on Neotropical members of the parvclasses Ratitae and Galloanserae and the orders Gruiformes and Ciconiiformes (systematics and nomenclature accord with Sibley and Monroe 1990, 1993), as well as Sibley and Monroe's (1990, 1993) tomes on birds of the world, which can furnish ranges for remaining non-passerines. Use of "threatened" in the following account is based on global evaluations in Collar *et al.* (1992).

With respect to birds treated in Blake (1977), the following points apply. Taczanowski (1877a) specified that the Muscovy Duck *Cairina moschata* existed both at Palmal (=Palmales) in the Santa Rosa District of Guayaquil (now El Oro) Province, Ecuador, and at Tumbes, Peru (Figure 1). Also, Taczanowski (1886: 472–473) cited Johann Jacob von Tschudi's records of it on Peruvian ponds and coast, and reports of it in north-eastern Peru. J. Stolzmann (also spelled Sztolcman; see Vaurie 1972) collected three Cinnamon Teal *Anas cyanoptera* and three Black-necked Stilts *Himantopus mexicanus* at Santa Lucía (Figure 1) (Taczanowski 1877b, 1886: 383–384, 474–476). In Tumbes Department, A. Raimondi took a male Rufescent Tiger-heron *Tigrisoma lineatum* (Taczanowski 1886: 404–405) and Parker *et al.* (1989) observed the Rufous-necked Wood-rail *Aramides axillaris*. The Collared Plover *Charadrius collaris* was sighted west of Sullana and at Puerto Pizarro, Tumbes, and Piura (Figure 1) (Schulenberg and Parker 1981). Pierret and Hofmann (1967) observed the Black Skimmer *Rynchops niger* and South American Tern *Sterna hirundinacea* at or about Mangroves of Tumbes National Sanctuary (Figure 1). The Kelp Gull *Larus dominicanus* was noted at that sanctuary and at Paita (Figure 1) (Brooks 1917, O'Neill *et al.* 1988).

Blake (1977: 87–88) indicated that the Great Grebe *Podiceps major* occurs in coastal Piura (Department) but because he gave no specific location this species does not appear in the Appendix. The Peruvian Booby *Sula variegata* has nested at Talara (Figure 1) (Chapman 1926: 214). At the “wetland” in the north-eastern corner of Figure 1, Bloch *et al.* (1991) observed the Least Bittern *Ixobrychus exilis* farther north along the Peruvian coast, and the Pinnated Bittern *Botaurus pinnatus* farther south (in Ecuador), than Blake (1977: 157–160) reported them.

Updating the ranges of members of the infraorder Falconides in Blake (1977), Wiedenfeld *et al.* (1985) sighted the Swallow-tailed Kite *Elanoides forficatus*, Grey-backed Hawk *Leucopternis occidentalis* (threatened), Short-tailed Hawk *Buteo brachyurus*, Zone-tailed Hawk *Buteo albonotatus* and Black Hawk-eagle *Spizaetus tyrannus* in the Reserved Zone of Tumbes (Figure 1). Parker *et al.* (1989) heard the Barred Forest-falcon *Micrastur ruficollis* and saw the Bat Falcon *Falco ruficularis* there. Swainson’s Hawk *Buteo swainsoni* has been seen about Tumbes and Piura (Figure 1) (Schulenberg and Parker 1981). In 1876 (Taczanowski 1877a,b, 1884a: 124–126, 138–140), J. Stolzmann collected an immature Plumbeous Kite *Ictinia plumbea* in Lechugal and an immature Black-chested Buzzard-eagle *Geranoaetus melanoleucus* in Tumbes. Taczanowski described examples of the Black-collared Hawk *Busarellus nigricollis* that had been collected in Santa Lucía (Figure 1) by A. Raimondi (Taczanowski 1884a: 111–113) and the Orange-breasted Falcon *Falco deiroleucus* that had been provided by Konstanty Jelski (Taczanowski 1884a: 149). Jelski reported that during his six-year stay in Peru he encountered the Orange-breasted Falcon only twice, once in Tumbes (Figure 1). Each collected falcon was eating a pigeon.

Concerning the avian distributions in Sibley and Monroe (1990, 1993), the following information applies. J. Stolzmann took a female Violaceous Trogon *Trogon violaceus* in Lechugal (Figure 1) but otherwise never encountered the species in Peru (Taczanowski 1877a, 1886: 173–175). The Olivaceous Piculet *Picumnus olivaceus*, Striped Cuckoo *Tapera naevia*, Lesser Swallow-tailed Swift *Panyptila cayennensis* and Green-crowned Woodnymph *Thalurania fannyi* (for nomenclature see Sibley and Monroe 1993: 28) have been recorded in Tumbes Department, Peru (Schulenberg and Parker 1981, Wiedenfeld *et al.* 1985, Parker *et al.* 1989). The Golden-headed Quetzal *Pharomachrus auriceps* and White-bellied Woodstar *Acestrura mulsant* were collected in Alamor, Ecuador (elevation: 1,325 m; Figure 1) (Chapman 1926: 329; Zimmer 1953). Occurring as far south as south-western Loja Province, Ecuador, are the Violet-tailed Sylph *Agelaiocercus coelestis* (Alamor) and Purple-crowned Fairy *Heliathryx barroti* (La Puente and Puyango) (Chapman 1925, 1926: 323). Zimmer’s (1952) *Agelaiocercus kingii aethereus* equals *A. coelestis aethereus* (see Sibley and Monroe 1990: 162–163, Howard and Moore 1991: 159). The West Peruvian Screech-owl *Otus roboratus* has been recorded at elevations ≤ 400 m in Tumbes Department, Peru (Taczanowski 1884a: 185–187, Wiedenfeld *et al.* 1985). A. Raimondi collected a male Striped Owl *Asio clamator* in Tumbes (Taczanowski 1884a: 192–193).

With regard to the ranges of columbids provided by Sibley and Monroe (1990, 1993), it should be noted that in the Reserved Zone of Tumbes Wiedenfeld *et al.* (1985) reportedly observed the Plumbeous Pigeon *Columba plumbea* and Parker *et al.* (1989) sighted the Scaled Pigeon *Columba speciosa*, Ruddy Pigeon *Columba subvinacea* and Ochre-bellied Dove *Leptotila ochraceiventris*. There are Ecuadorian

reports of the White-throated Quail-dove *Geotrygon frenata* in Alamor, Loja Province, and the Ruddy Quail-dove *G. montana* in Santa Rosa, El Oro Province (Figure 1) (Chapman 1922, 1926: 171–172). On 8 August 1899, Perry O. Simons collected a White-tipped Dove *Leptotila verreauxi* in Piura (Department) at an elevation of 30 m (Chubb 1919). This place may be in the vicinity of Catacaos, a short distance south-west of the city of Piura (Figure 1) (Vaurie 1972), where collections occurred on 4 August 1899.

To update Ridgely and Tudor's (1994) range data (text or maps), the following nine tyrannids have occurred in Tumbes Department, Peru (roughly north of Madre de Agua Creek, Figure 1): Ochre-bellied Flycatcher *Mionectes oleagineus*, Slaty-capped Flycatcher *Leptopogon superciliaris*, Golden-faced Tyrannulet *Zimmerius chrysops*, Rufous-winged Tyrannulet *Mecocerculus calopterus*, Tawny-crowned Pygmy-tyrant *Euscarthmus meloryphus*, White-throated Spadebill *Platyrinchus mystaceus*, Royal Flycatcher *Onychorhynchus coronatus*, Smoke-coloured Pewee *Contopus fumigatus* and Golden-winged Manakin *Manacus manacus* (Taczanowski 1877a, 1884b: 235, Bond 1947, Wiedenfeld *et al.* 1985, Parker *et al.* 1989). There are records of the White-crested Elaenia *Elaenia albiceps* in Alamor, Peru (Figure 1) (Zimmer 1941) and the Piratic Flycatcher *Legatus leucophaeus* in Alamor, Ecuador (Best *et al.* 1992: 198). The Rusty-margined Flycatcher *Myiozetetes cayanensis* was taken in Cebollal (Figure 1) (Chapman 1926: 509–510). The specimen which Taczanowski labelled *Myiozetetes similis* (Social Flycatcher) in 1877 (1877a) was later renamed *M. granadensis* (Grey-capped Flycatcher) by him (1884b: 276–277). Chapman (1926: 509–510), who never referred to Taczanowski's 1884 and 1886 works in cataloguing any species, assigned that specimen to *M. cayanensis*. That action has not been supported by other ornithologists (see Cory and Hellmayr 1927: 145–146, Zimmer 1937, Sibley and Monroe 1990: 366–367, Ridgely and Tudor 1994: 659).

The following thamnophilid and furnariid ranges provide corrections to Ridgely and Tudor (1994). Inhabiting the Reserved Zone of Tumbes (Figure 1) are Chapman's Antshrike *Thamnophilus zarumae* and the threatened Grey-headed Antbird *Myrmeciza griseiceps* (Wiedenfeld *et al.* 1985). The Russet Antshrike *Thamnistes anabatinus* has been recorded in Las Piñas, Ecuador (Figure 1) (Chapman 1926: 385). J. Stolzmann (Taczanowski 1877a) collected a male Cinereous Antshrike *Thamnomanes caesius* at Palmales (Figure 1). To my knowledge, there is no report of the Coastal Miner *Geositta peruviana* in Tumbes Department, Peru. Present there, however, are Azara's Spinetail *Synallaxis azarae*, the threatened Rufous-necked Foliage-gleaner *Syndactyla ruficollis*, Plain Xenops *Xenops minutus*, Plain-brown Woodcreeper *Dendrocincla fuliginosa* and Strong-billed Woodcreeper *Xiphocolaptes promeropirhynchus* (Zimmer 1934, Wiedenfeld *et al.* 1985, Parker *et al.* 1989).

In the superfamily Muscicapodea, the following taxa have been noted in Tumbes Department (*contra* Ridgely and Tudor 1989): Spotted Nightingale-thrush *Catharus dryas*, Swainson's Thrush *Catharus ustulatus*, Grey-breasted Wood-wren *Henicorhina leucophrys* and Long-billed Gnatwren *Ramphocaenus melanurus* (Wiedenfeld *et al.* 1985, Parker *et al.* 1989). Within Ecuador, the Andean Solitaire *Myadestes ralloides* has been recorded in Alamor

and the Whiskered Wren *Thryothorus mystacalis* has occurred in Alamor, Las Piñas and Vicentino (Chapman 1926: 565–566, 578; Best *et al.* 1992: 200).

Reports of these 18 fringillids in Tumbes Department, Peru, update Ridgely and Tudor's (1989) maps or textual descriptions of ranges: Black-striped Sparrow *Arremonops conirostris*, White-headed Brush-finch *Atlapetes albiceps*, Stripe-headed Brush-finch *Atlapetes torquatus*, Slate-throated Redstart *Myioborus miniatus*, Three-banded Warbler *Basileuterus trifasciatus*, Black-faced Tanager *Schistochlamys melanopis*, Black-and-white Tanager *Conothraupis speculigera*, Ashy-throated Bush-tanager *Chlorospingus canigularis*, Guira Tanager *Hemithraupis guira*, White-shouldered Tanager *Tachyphonus luctuosus*, Fawn-breasted Tanager *Pipraeidea melanonota*, Orange-bellied Euphonia *Euphonia xanthogaster*, Bay-headed Tanager *Tangara gyrola*, Collared Warbling-finch *Poospiza hispaniolensis*, Chestnut-throated Seedeater *Sporophila telasco*, Dull-coloured Grassquit *Tiaris obscura*, Blue-black Grosbeak *Cyanocompsa cyanoides* and Yellow-rumped Cacique *Cacicus cela* (Taczanowski 1877a,b; 1884b: 411–412, 547–548, 554; 1886: 14–15, 30–31; Wiedenfeld *et al.* 1985; Parker *et al.* 1989). The Orange-billed Sparrow *Arremon aurantirostris*, Buff-rumped Warbler *Basileuterus fulvicauda* and Green Honeycreeper *Chlorophanes spiza* were not reported by Taczanowski (1877a, 1884a: 435–436) to be in Tumbes, but in Palmales (Figure 1). The Chestnut-capped Brush-finch *Atlapetes brunneinucha* was taken in El Oro Province, Ecuador (Santa Rosa) (Chapman 1926: 635). Occurring as far south-west as southern Loja Province, Ecuador, are the Common Bush-tanager *Chlorospingus ophthalmicus* (Vicentino), Palm Tanager *Thraupis palmarum* (Las Piñas, Cebollal, Alamor and Vicentino), Blue-winged Mountain-tanager *Anisognathus somptuosus* (Alamor), Golden Tanager *Tangara arthus* (Puyango, Las Piñas, Alamor and Vicentino), Golden-naped Tanager *Tangara ruficervix* (Alamor), Swallow Tanager *Tersina viridis* (Cebollal and Alamor), Black-and-white Seedeater *Sporophila luctuosa* (Vicentino) and Russet-backed Oropendola *Psarocolius angustifrons* (Las Piñas) (Chapman 1926: 648, 657, 670, 673, 692; Zimmer 1943; Best *et al.* 1992: 205–206, 208).

Taczanowski (1886: 50–51) related that J. Stolzmann did not collect *Chrysomitris siemiradzkii* (Saffron Siskin) in the environs of Tumbes, where it was abundant, because he mistakenly thought that it was *Chrysomitris capitalis*. Chapman indicated that his *Spinus peruanus paulus* (1926: 621), represented by Ecuadorian specimens (including six from Milagros and Alamor), equals both von Berlepsch and Taczanowski's *Chrysomitris capitalis* (1883: 551) and *Chrysomitris siemiradzkii* (1884: 313). However, von Berlepsch and Taczanowski (1883: 551–52) did not make reference to *C. capitalis* but rather described *C. siemiradzkii*. Exacerbating the discrepancy, Chapman (1926: 622–623) indicated that his *Spinus siemiradzkii* equals von Berlepsch and Taczanowski's (1883: 536, 551) *Chrysomitris siemiradzkii* (sp.). Chapman (1926: 621–622) did not synonymize either *C. capitalis* or *C. siemiradzkii* of von Berlepsch and Taczanowski with his *Spinus* (= *Carduelis* [see Sibley and Monroe 1990]) *capitalis* which had been recorded in Santa Rosa. Howard and Moore (1991: 502) regarded *capitalis* as a subspecies of the Hooded Siskin *Carduelis magellanica*, which ranges from southern Colombia to north-western Peru, *paula* as a subspecies that exists in southern Ecuador and western Peru, and *peruana* as a subspecies that inhabits

central Peru. Wiedenfeld *et al.* (1985) collected one adult male and two immature siskins in the Reserved Zone of Tumbes, and tentatively identified them and sighted flocks of siskins as *C. siemiradzkii*.

North American migrants

Although Howard and Moore (1991) noted that one subspecies of Fulvous Whistling-duck *Dendrocygna bicolor helva* inhabits the southern U.S.A. and northern Mexico and another *D. b. bicolor* inhabits northern South America, Bellrose (1976) believed that the members of this species which invaded the U.S. Atlantic coast for more than a decade beginning in 1955 originated from northern South America. The migratory behaviour of this declining species (Scott 1987) needs to be understood. Parker *et al.* (1982) considered it to be rare in Peru but Marchant (1958) noted flocks of as many as 400 birds in the Santa Elena Peninsula of south-western Ecuador, an area located 122–157 km north-west of Mangroves of Tumbes National Sanctuary (Figure 1). At the latter site, O'Neill *et al.* (1988) recorded the migrant Blue-winged Teal *Anas discors*.

J. Stolzmann collected the Black-billed Cuckoo *Coccyzus erythrophthalmus* in Lechugal, and observed it along a road between Tumbes and Lechugal (Figure 1) during the rainy season (Taczanowski 1877a, 1886: 189–190). Stolzmann stated that K. Jelski collected two specimens that had eaten spiny caterpillars. Parker *et al.* (1982) indicated that this cuckoo is rare in Peru, where it occurs only in tropical habitats. Also, Stolzmann took the migrant Sora *Porzana carolina* at Santa Lucía (Taczanowski 1877b, 1886: 320–321).

Fourteen migrant scolopacids (Appendix) have occurred within the area delineated in Figure 1. J. Stolzmann collected eight of these species in Tumbes and two of the same species in Santa Lucía, and K. Jelski collected a ninth “somewhat rare” species (Marbled Godwit *Limosa fedoa*) in Tumbes River delta (Taczanowski 1877a,b; 1886: 354–356, 358–359, 364–365, 368–370, 373–375, 379–383). Stolzmann stated that the Whimbrel *Numenius phaeopus* was fairly common. O'Neill *et al.* (1988) encountered three other tringines (Appendix) in what is now Mangroves of Tumbes National Sanctuary, and Bloch *et al.* (1991) recorded an additional pair of species (Appendix) in the wetland of Figure 1. Parker *et al.* (1982) indicated that in coastal Peru 11 of these 14 tringines were common or fairly common, the Red-necked Phalarope *Phalaropus lobatus* was uncommon, and the Marbled Godwit and Solitary Sandpiper *Tringa solitaria* were rare. At Santa Elena Peninsula, Ecuador, the Short-billed Dowitcher *Limnodromus griseus* and Least Sandpiper *Calidris minutilla* were abundant; the Lesser Yellowlegs *Tringa flavipes*, Spotted Sandpiper *T. macularia* and Willet *Catoptrophorus semipalmatus* were common; and the Whimbrel, Greater Yellowlegs *Tringa melanoleuca*, Solitary Sandpiper, Sanderling *Calidris alba*, Western Sandpiper *C. mauri* and Pectoral Sandpiper *C. melanotos* were uncommon (Marchant 1958). Hellmayr and Conover (1948b: 140–142) synonymized Taczanowski's (1877b, 1886: 373–375) *Macrorhamphus griseus* with the Long-billed Dowitcher *Limnodromus scolopaceus*. However, Blake (1977: 580–582) and Sibley and Monroe (1990: 239) considered the dowitcher that migrates to Peru to be the Short-billed Dowitcher.

J. Stolzmann collected a Grey Plover *Pluvialis squatarola* in Tumbes which Taczanowski (1877a, 1886: 338–340) described. O'Neill *et al.* (1988) recorded this species and the Semipalmated Plover *Charadrius semipalmatus* in Mangroves of Tumbes National Sanctuary (Figure 1). These migrant plovers are reportedly common in coastal Peru (Parker *et al.* 1982) and the Santa Elena Peninsula (Marchant 1958).

Eight migrant larids (Appendix) have been reported in the area of Figure 1. There have been collections of Franklin's Gull *Larus pipixcan* and the Royal Tern *Sterna maxima* in Paíta by Captain Albert Hastings Markham, Sabine's Gull *Xema sabini* in Tumbes by J. B. Steere, and the Laughing Gull *Larus atricilla*, Royal Tern and Arctic Tern *Sterna paradisaea* in Santa Lucía by J. Stolzmann (Taczanowski 1877b, 1886: 439, 441–442, 450–452, 456–457; Saunders 1882). The Common Tern *S. hirundo* was noted in Talara (Hellmayr and Conover 1948b: 304–306) and the Black Tern *Chlidonias niger* was recorded about Mangroves of Tumbes National Sanctuary (Pierret and Hofmann 1967). The Gull-billed Tern *Sterna nilotica* and Sandwich Tern *S. sandvicensis* were reported in Piura Department by Plenge (1974) and Blake (1977: 636) respectively, but no specific localities were given. Later, O'Neill *et al.* (1988) recorded the Gull-billed Tern in Mangroves of Tumbes National Sanctuary. However, the Sandwich Tern is not included in the Appendix. Parker *et al.* (1982) indicated that in coastal Peru the Gull-billed Tern and Black Tern were rare, Sabine's Gull was uncommon, and the other five migrant larids (Appendix) were common or fairly common. At Santa Elena Peninsula, the Black Tern was rare, the Laughing Gull, Common Tern, and Arctic Tern were uncommon, the Gull-billed Tern and Royal Tern were common, and Franklin's Gull was abundant (Marchant 1958).

Although Parker *et al.* (1982) considered Swainson's Hawk to be rare in Peru, this migrant species and the migrant Osprey *Pandion haliaetus* have been recorded in the area shown in Figure 1 (Taczanowski 1877b, 1884a: 127–128, Schulenberg and Parker 1981, O'Neill *et al.* 1988). The Western Wood-pewee *Contopus sordidulus* (*Myiochanes richardsoni* of Chapman 1926: 525) was collected in Santa Rosa and Swainson's Thrush was observed in the Reserved Zone of Tumbes (Parker *et al.* 1989). Three swallow species (Appendix) migrate to the area delineated in Figure 1 (Schulenberg and Parker 1981). Parker *et al.* (1982) considered Swainson's Thrush and the three swallows to be rare in arid tropical habitats of Peru.

Recommendations for the conservation of North-western Peru Biosphere Reserve

The Reserved Zone of Tumbes comprises forests that are denser and more mesic than those in the other units of NPBR, and probably has the highest level of endemism and biological diversity. Moreover, this zone constitutes the terminus of the ranges of many avian species. Thus, it is the premier unit of NPBR and ought to be treated as such. Under the Sustained Use Plan for the Reserved Zone of Tumbes and its Buffer Zone (Fundación Peruana para la Conservación de la Naturaleza [FPCN] *in litt.*), most of the zone is designated as a strictly protected sector. Those parts of the zone where grazing or cultivation is allowed are its north-west wing, the upper part of its north-east wing, and a strip along

its southern border (Figure 1). It is crucial that the strictly protected sector of the Reserved Zone of Tumbes, together with an abutting strip of land several kilometres wide, be ratified as a Category I (strict national reserve) or II (national park) sector by the Peruvian government's Instituto Nacional de Recursos Naturales.

All livestock in the strictly protected sector should be removed with the possible exception of burros that are used to carry the equipment of special visitors to the Reserved Zone of Tumbes. Cowboys who have livestock in or about this sector should be notified that they have a certain period of time in which to remove their animals. Thereafter, the border police should have permission to hunt livestock for food. The pack animals that graze and defecate near El Caucho Biological Station should be kept >2 km from the station.

Members of the Republican Guard should receive a governmental food stipend so that they do not feel a need to hunt birds such as Rufous-headed Chachalacas *Ortalis erythroptera* and Pale-browed Tinamous *Crypturellus transfasciatus* (see Best 1992: 228). Logging by the Republican Guard must be discontinued along the few roads that bisect the graded access road leading to the Reserved Zone of Tumbes. The police must help make regular and extensive patrols of the zone to protect its natural resources. One of the goals of FPCN, which manages NPBR, is to augment environmental awareness. Thus, it would be ideal for FPCN to instil in the Republican Guard a conservation ethic via seminars that would be attended by the commandant as well as rank-and-file police. To further reduce poaching and logging, other instructional sessions should be held for villagers and cowboys who live in the vicinity of the Reserved Zone of Tumbes.

In my view, at least six forest rangers (guardaparques) are needed in the Reserved Zone of Tumbes. In 1994, there was only one. The forest rangers should be conservationists who possess some college education, a basic understanding of ecology, and a conservation ethic. Their salary needs to be sufficient to attract applicants with these qualifications. Forest rangers need to follow a specific schedule each day and week, and keep a log of all their activities. They need to patrol remote areas as well as the vicinity of their lodging quarters. It is desirable that the rangers be transferred periodically so that they do not form close friendships with the neighbouring residents, cowboys or police.

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Appendix. Taxonomically ordered list of birds inhabiting elevations $\leq 1,450$ m in the environs of North-western Peru Biosphere Reserve.

Nomenclature and taxonomic arrangement accord with Sibley and Monroe (1990, 1993). Chapman's Antshrike *Thamnophilus zarumae* and the Western Slaty-antshrike *Thamnophilus atrinucha* are considered to be full species (Ridgely and Tudor 1994: 229, 240–241; see Sibley and Monroe 1990: 381; 1993: 49).

Key:

- * Within the region shown in Figure 1, these species have been recorded only in Ecuador.
- § North American migrant.
- † Endemic to the provinces of El Oro and Loja in extreme south-western Ecuador, and the departments of Tumbes, Piura and Lambayeque in extreme north-western Peru (see Blake 1977, Ridgely and Tudor 1989, 1994, Sibley and Monroe 1990, Collar *et al.* 1992, Winkler *et al.* 1995).
- ‡ Threatened (Collar *et al.* 1992), but not endemic to the strip of western political units in Ecuador and Peru which is defined above.

A superscripted letter is used to signify, for each species, the earliest source or one of the earliest sources of a specific locality report within the area depicted in Figure 1. These attributions are listed in roughly chronological order below. If a taxon was first recorded at an Ecuadorian site within Figure 1 and subsequently reported at a Peruvian location in Figure 1, the earliest source of a Peruvian record is indicated. In referring to several of the references below, note that Milagros and Paletillas are in Ecuador, not Peru (see

text), and that the Ecuadorian sites of Las Piñas, Lojas Province (Figure 1) and Piñas, El Oro Province, are distinct. Sabanilla, Ecuador, to which several authors below refer (4°02'S 79°01'W: Paynter and Traylor 1977), is not the same place as the Sabanilla shown in Figure 1. Only Best *et al.* (1992) and Collar *et al.* (1992) allude to the Sabanilla of Figure 1.

Lawrence (1871, 1874).

Taczanowski (1877a,b, 1884a,b, 1886) and Taczanowski and von Berlepsch (1885: 122) provided early avian records (mostly based on specimens) from Tumbes, Santa Lucía, Lechugal and Palmales (Figure 1). Notes in Taczanowski (1884a: 89–91; 1886: 391–392, 424–425) signify that three widespread members of the parvorder Ciconiida existed in the area of Figure 1 even though a specific site record was not provided for any of them. J. Stolzmann reported that the Great Egret *Casmerodius albus* was “distributed in all of northern Peru, especially on the coast”, J. J. Tschudi noted that the Peruvian Pelican *Pelecanus thagus* occurred “along all the Peruvian coast”, and Alcide Dessalines d’Orbigny related that the Turkey Vulture *Cathartes aura* inhabited the entire Peruvian coast from Chile to Ecuador (my italics). For synonymies of Taczanowski’s binomials, see Cory (1918, 1919), Cory and Hellmayr (1924, 1925, 1927), Hellmayr (1929, 1934, 1935, 1936, 1937, 1938), and Hellmayr and Conover (1942, 1948a,b, 1949); see also Sibley and Monroe (1990, 1993) and Howard and Moore (1991). Taczanowski (1884a: 104–106) indicated that the specimen which he had previously (1877b) classified as *Urubitinga anthracina* should have been named *U. zonura* (= Great Black-hawk *Buteogallus urubitinga*). Taczanowski (1884a: 109–110) described the Mangrove Black-hawk *Buteogallus subtilis* using the binomial *Urubitinga schistacea*. L. Stolzmann declared that this species was the most common raptor at the mouth of Tumbes River, where it occurred in flocks and fed on crabs (Taczanowski 1884a: 109–110). Hellmayr and Conover (1949: 188–192) examined one or both of the specimens of this species that had been collected by Stolzmann at Santa Lucía and labelled by Taczanowski (1877b, 1884a: 109–110) as *U. schistacea*, and found it or them to be the Mangrove Black-hawk. In addition, these authors (pp. 179–180) considered both specimens (or the second specimen) so labelled to be Plumbeous Hawks *Leucopternis plumbea*.

^{sr} Saunders (1882).

^{sn} Salvin (1883, 1896).

sm Simon (1901).

^c Chapman (1917: 384; 1919; 1921; 1922; 1923; 1924; 1925; 1926). In 1919, Chapman mistakenly referred to Alamor, Ecuador (elevation c.1,310 m), as Alamor, Peru. For synonymies of Chapman’s binomials, see the sources given above for finding synonymies of Taczanowski’s scientific names.

^{bk} Brooks (1917).

^{bg} Bangs and Noble (1918).

^{cb} Chubb (1919).

^{cy} Cory and Hellmayr (1924: 144).

^h Hellmayr (1934: 177), Hellmayr and Conover (1948a: 50–51, 67–69, 102–103, 398–399; 1948b: 304–306, 319–320).

^z Zimmer (1934, 1941, 1951, 1953).

^{bd} Bond (1945, 1947, 1950, 1951, 1953, 1955, 1956).

- ^{pt} Pierret and Hofmann (1967). In Tumbes Department, these authors identified 19 avian species in mangroves.
- ^s Schulenberg and Parker (1981). These authors' *Petrochelidon fulva* equals *Hirundo rufocollaris* (Chestnut-sided Swallow) of this table.
- ^w Wiedenfeld *et al.* (1985).
- ^p Parker *et al.* (1989).
- ^b Bloch *et al.* (1991).
- ^{cr} Collar *et al.* (1992: 784–786). Specimens of the Grey-breasted Flycatcher *Lathrotriccus griseipectus* were collected at El Angolo in November 1972.
- ^{bt} Best *et al.* (1992: 195, 198, 205–206, 208).

 Order TINAMIFORMES

Family Tinamidae

*^c*Crypturellus soui*

Little Tinamou

^l*Crypturellus transfasciatus*

Pale-browed Tinamou

Order CRACIFORMES

Family Cracidae

^v*Ortalis erythroptera*

Rufous-headed Chachalaca

†*Penelope albipennis*

White-winged Guan

Order GALLIFORMES

Family Odontophoridae

*^o*Odontophorus erythrops*

Rufous-fronted Wood-quail

Order ANSERIFORMES

Family Dendrocygnidae

§^o*Dendrocygna bicolor*

Fulvous Whistling-duck

*^o*Dendrocygna autumnalis*

Black-bellied Whistling-duck

Family Anatidae

Subfamily Oxyurinae

*^o*Oxyura dominica*

Masked Duck

Subfamily Anatinae

Tribe Anserini

^l*Cairina moschata*

Muscovy Duck

Tribe Anatini

§^o*Anas discors*

Blue-winged Teal

^l*Anas cyanoptera*

Cinnamon Teal

^l*Anas bahamensis*

White-cheeked Pintail

Order PICIFORMES

Family Picidae

†^l*Picumnus sclateri*

Ecuadorian Piculet

^l*Picumnus olivaceus*

Olivaceous Piculet

*^c*Melanerpes pucherani*

Black-cheeked Woodpecker

^l*Veniliornis callonotus*

Scarlet-backed Woodpecker

*^c*Veniliornis fumigatus*

Smoky-brown Woodpecker

^w*Veniliornis kirkii*

Red-rumped Woodpecker

^l*Piculus rubiginosus*

Golden-olive Woodpecker

^l*Dryocopus lineatus*

Lineated Woodpecker

^l*Campephilus gayaquilensis*

Guayaquil Woodpecker

Family Ramphastidae

Subfamily Ramphastinae

*^c*Aulacorhynchus haematopygus*

Crimson-rumped Toucanet

Order GALBULIFORMES

Family Bucconidae

*^l*Malacoptila panamensis*

White-whiskered Puffbird

Order TROGONIFORMES

Family Trogonidae

Subfamily Trogoninae

Tribe Trogonini

**Pharomachrus auriceps*

¹*Trogon melanurus*

¹*Trogon violaceus*

Golden-headed Quetzal

Black-tailed Trogon

Violaceous Trogon

Order CORACIIFORMES

Family Momotidae

¹*Momotus momota*

Blue-crowned Motmot

Family Cerylidae

¹*Megaceryle torquata*

¹*Chloroceryle americana*

**Chloroceryle inda*

Ringed Kingfisher

Green Kingfisher

Green-and-rufous Kingfisher

Order CUCULIFORMES

Family Coccozidae

§*Coccyzus erythrophthalmus*

¹*Piaya cayana*

**Piaya minuta*

Black-billed Cuckoo

Squirrel Cuckoo

Little Cuckoo

Family Crotophagidae

Tribe Crotophagini

**Crotophaga ani*

¹*Crotophaga sulcirostris*

Smooth-billed Ani

Groove-billed Ani

Family Neomorphidae

²*Tapera naevia*

Striped Cuckoo

Order PSITTACIFORMES

Family Psittacidae

¹*Aratinga erythrogenys*

¹*Forpus coelestis*

¹*Brotogeris pyrrhopterus*

**Pionus menstruus*

^{bd}*Pionus chalcopterus*

Red-masked Parakeet

Pacific Parrotlet

Grey-cheeked Parakeet

Blue-headed Parrot

Bronze-winged Parrot

Order APODIFORMES

Family Apodidae

^w*Streptoprocne zonaris*

^w*Chaetura cinereiventris*

^w*Chaetura brachyura*

²*Panyptila cayennensis*

White-collared Swift

Grey-rumped Swift

Short-tailed Swift

Lesser Swallow-tailed Swift

Order TROCHILIFORMES

Family Trochilidae

Subfamily Phaethornithinae

^w*Phaethornis superciliosus*

²*Phaethornis griseogularis*

Long-tailed Hermit

Grey-chinned Hermit

Subfamily Trochilinae

¹*Anthracothorax prevostii*

^p*Thalurania fannyi*

^w*Damophila julie*

†sm*Leucippus baeri*

**Amazilia franciae*

**Amazilia tzacatl*

¹*Amazilia amazilia*

^w*Chalybura buffonii*

**Adelomyia melanogenys*

**Heliodoxa jacula*

**Ocreatus underwoodii*

**Agelaiocercus coelestis*

**Heliothryx barroti*

Green-breasted Mango

Green-crowned Woodnymph

Violet-bellied Hummingbird

Tumbes Hummingbird

Andean Emerald

Rufous-tailed Hummingbird

Amazilia Hummingbird

White-vented Plumeleteer

Speckled Hummingbird

Green-crowned Brilliant

Booted Racket-tail

Violet-tailed Sylph

Purple-crowned Fairy

' <i>Heliomaster longirostris</i>	Long-billed Starthroat
' <i>Rhodopis vesper</i>	Oasis Hummingbird
' <i>Myrmia micrura</i>	Short-tailed Woodstar
* <i>Acestrura mulsant</i>	White-bellied Woodstar
‡* <i>Acestrura bombus</i>	Little Woodstar
Order STRIGIFORMES	
Family Strigidae	
' <i>Otus roboratus</i>	West Peruvian Screech-owl
' <i>Strix nigrolineata</i>	Black-and-white Owl
' <i>Pulsatrix perspicillata</i>	Spectacled Owl
' <i>Glaucidium brasilianum</i>	Ferruginous Pygmy-owl
' <i>Speotyto cunicularia</i>	Burrowing Owl
' <i>Asio clamator</i>	Striped Owl
Family Caprimulgidae	
Subfamily Chordeilinae	
' <i>Chordeiles acutipennis</i>	Lesser Nighthawk
Subfamily Caprimulginae	
' <i>Nyctidromus albicollis</i>	Pauraque
Order COLUMBIFORMES	
Family Columbidae	
' <i>Columba speciosa</i>	Scaled Pigeon
' <i>Columba plumbea</i>	Plumbeous Pigeon
' <i>Columba subvinacea</i>	Ruddy Pigeon
' <i>Zenaida auriculata</i>	Eared Dove
' <i>Zenaida asiatica</i>	White-winged Dove
' <i>Columbina buckleyi</i>	Ecuadorian Ground-dove
' <i>Columbina cruziana</i>	Croaking Ground-dove
' <i>Claravis pretiosa</i>	Blue Ground-dove
° <i>Leptotila verreauxi</i>	White-tipped Dove
‡ <i>Leptotila ochraceiventris</i>	Ochre-bellied Dove
* <i>Geotrygon frenata</i>	White-throated Quail-dove
* <i>Geotrygon montana</i>	Ruddy Quail-dove
Order GRUIFORMES	
Family Rallidae	
' <i>Rallus longirostris</i>	Clapper Rail
' <i>Aramides axillaris</i>	Rufous-necked Wood-rail
§ <i>Porzana carolina</i>	Sora
* <i>Porphyrio martinicus</i>	Purple Gallinule
Order CICONIIFORMES	
Family Scolopacidae	
Subfamily Tringinae	
§ <i>Limosa fedoa</i>	Marbled Godwit
§ <i>Numenius phaeopus</i>	Whimbrel
§* <i>Tringa melanoleuca</i>	Greater Yellowlegs
§° <i>Tringa flavipes</i>	Lesser Yellowlegs
§ <i>Tringa solitaria</i>	Solitary Sandpiper
§ <i>Tringa macularia</i>	Spotted Sandpiper
§ <i>Catoptrophorus semipalmatus</i>	Willet
§ <i>Limnodromus griseus</i>	Short-billed Dowitcher
§ <i>Calidris canutus</i>	Red Knot
§° <i>Calidris alba</i>	Sanderling
§° <i>Calidris mauri</i>	Western Sandpiper
§ <i>Calidris minutilla</i>	Least Sandpiper
§* <i>Calidris melanotos</i>	Pectoral Sandpiper
§ <i>Phalaropus lobatus</i>	Red-necked Phalarope
Family Jacanidae	
' <i>Jacana jacana</i>	Wattled Jacana

Family Burhinidae	
ⁱ <i>Burhinus superciliaris</i>	Peruvian Thick-knee
Family Charadriidae	
Subfamily Recurvirostrinae	
Tribe Haematopodini	
ⁱ <i>Haematopus palliatus</i>	American Oystercatcher
Tribe Recurvirostrini	
ⁱ <i>Himantopus mexicanus</i>	Black-necked Stilt
Subfamily Charadriinae	
§ ⁱ <i>Pluvialis squatarola</i>	Grey Plover
§ ^o <i>Charadrius semipalmatus</i>	Semipalmated Plover
ⁱ <i>Charadrius wilsonia</i>	Wilson's Plover
^c <i>Charadrius vociferus</i>	Killdeer
^s <i>Charadrius collaris</i>	Collared Plover
Family Laridae	
Subfamily Larinae	
Tribe Rynchopini	
^p <i>Rynchops niger</i>	Black Skimmer
Tribe Larini	
^{bk} <i>Larus dominicanus</i>	Kelp Gull
^{sr} <i>Larus cirrocephalus</i>	Grey-headed Gull
§ ⁱ <i>Larus atricilla</i>	Laughing Gull
§ ^{sr} <i>Larus pipixcan</i>	Franklin's Gull
§ ⁱ <i>Xema sabini</i>	Sabine's Gull
^c <i>Creagrus furcatus</i>	Swallow-tailed Gull
Tribe Sternini	
§ ^o <i>Sterna nilotica</i>	Gull-billed Tern
§ ⁱ <i>Sterna maxima</i>	Royal Tern
^p <i>Sterna hirundinacea</i>	South American Tern
§ ^h <i>Sterna hirundo</i>	Common Tern
§ ⁱ <i>Sterna paradisaea</i>	Arctic Tern
^h <i>Sterna lorata</i>	Peruvian Tern
§ ^p <i>Chlidonias niger</i>	Black Tern
Family Accipitridae	
Subfamily Pandioninae	
§ ⁱ <i>Pandion haliaetus</i>	Osprey
Subfamily Accipitrinae	
^v <i>Elanoides forficatus</i>	Swallow-tailed Kite
ⁱ <i>Gampsonyx swainsonii</i>	Pearl Kite
ⁱ <i>Ictinia plumbea</i>	Plumbeous Kite
^v <i>Accipiter ventralis</i>	Plain-breasted Hawk
ⁱ <i>Accipiter bicolor</i>	Bicoloured Hawk
ⁱ <i>Geranospiza caerulescens</i>	Crane Hawk
ⁱ <i>Leucopternis plumbea</i>	Plumbeous Hawk
‡ ^v <i>Leucopternis occidentalis</i>	Grey-backed Hawk
ⁱ <i>Buteogallus subtilis</i>	Mangrove Black-hawk
ⁱ <i>Buteogallus urubitinga</i>	Great Black-hawk
[*] <i>Buteogallus meridionalis</i>	Savanna Hawk
ⁱ <i>Parabuteo unicinctus</i>	Harris's Hawk
ⁱ <i>Busarellus nigricollis</i>	Black-collared Hawk
ⁱ <i>Geranoaetus melanoleucus</i>	Black-chested Buzzard-eagle
^p <i>Buteo magnirostris</i>	Roadside Hawk
^v <i>Buteo brachyurus</i>	Short-tailed Hawk
§ ^o <i>Buteo swainsoni</i>	Swainson's Hawk
ⁱ <i>Buteo polyosoma</i>	Red-backed Hawk
^v <i>Buteo albonotatus</i>	Zone-tailed Hawk
^v <i>Spizaetus tyrannus</i>	Black Hawk-eagle

' <i>Spizaetus ornatus</i>	Ornate Hawk-eagle
Family Falconidae	
' <i>Polyborus plancus</i>	Crested Caracara
' <i>Herpetoheres cachinnans</i>	Laughing Falcon
^P <i>Micrastur ruficollis</i>	Barred Forest-falcon
' <i>Micrastur semitorquatus</i>	Collared Forest-falcon
^{sn} <i>Falco sparverius</i>	American Kestrel
' <i>Falco femoralis</i>	Aplomado Falcon
^P <i>Falco rufigularis</i>	Bat Falcon
' <i>Falco deiroleucus</i>	Orange-breasted Falcon
Family Podicipedidae	
' <i>Tachybaptus dominicus</i>	Least Grebe
^{*b} <i>Podilymbus podiceps</i>	Pied-billed Grebe
Family Sulidae	
^o <i>Sula nebouxii</i>	Blue-footed Booby
^c <i>Sula variegata</i>	Peruvian Booby
^c <i>Sula dactylatra</i>	Masked Booby
Family Anhingidae	
^{*b} <i>Anhinga anhinga</i>	Anhinga
Family Phalacrocoracidae	
' <i>Phalacrocorax brasilianus</i>	Neotropic Cormorant
^P <i>Phalacrocorax bougainvillii</i>	Guanay Cormorant
Family Ardeidae	
' <i>Egretta tricolor</i>	Tricoloured Heron
' <i>Egretta caerulea</i>	Little Blue Heron
' <i>Egretta thula</i>	Snowy Egret
' <i>Ardea cocoi</i>	Cocoi Heron
' <i>Casmerodius albus</i>	Great Egret
^{*b} <i>Bubulcus ibis</i>	Cattle Egret
' <i>Butorides striatus</i>	Striated Heron
' <i>Nyctanassa violacea</i>	Yellow-crowned Night-heron
' <i>Nycticorax nycticorax</i>	Black-crowned Night-heron
' <i>Tigrisoma lineatum</i>	Rufescent Tiger-heron
^{*b} <i>Ixobrychus exilis</i>	Least Bittern
^{*b} <i>Botaurus pinnatus</i>	Pinnated Bittern
Family Phoenicopteridae	
' <i>Phoenicopterus chilensis</i>	Chilean Flamingo
Family Threskiornithidae	
' <i>Eudocimus albus</i>	White Ibis
' <i>Ajaia ajaja</i>	Roseate Spoonbill
Family Pelecanidae	
Subfamily Pelecaninae	
' <i>Pelecanus occidentalis</i>	Brown Pelican
' <i>Pelecanus thagus</i>	Peruvian Pelican
Family Ciconiidae	
Subfamily Cathartinae	
' <i>Coragyps atratus</i>	Black Vulture
' <i>Cathartes aura</i>	Turkey Vulture
' <i>Sarcoramphus papa</i>	King Vulture
Subfamily Ciconiinae	
' <i>Mycteria americana</i>	Wood Stork
Family Fregatidae	
' <i>Fregata magnificens</i>	Magnificent Frigatebird
Family Procellariidae	
Subfamily Procellariinae	
^b <i>Macronectes giganteus</i>	Antarctic Giant-petrel
^{sn} <i>Daption capense</i>	Cape Petrel

^h <i>Puffinus bulleri</i>	Buller's Shearwater
^h <i>Puffinus griseus</i>	Sooty Shearwater
Subfamily Diomedaeinae	
^c <i>Diomedea irrorata</i>	Waved Albatross
Subfamily Hydrobatinae	
^c <i>Oceanites gracilis</i>	White-vented Storm-petrel
^h <i>Oceanodroma melania</i>	Black Storm-petrel
Order PASSERIFORMES	
Family Tyrannidae	
Subfamily Pipromorphinae	
^{*c} <i>Mionectes striaticollis</i>	Streak-necked Flycatcher
^{*c} <i>Mionectes olivaceus</i>	Olive-striped Flycatcher
^w <i>Mionectes oleagineus</i>	Ochre-bellied Flycatcher
^l <i>Leptopogon superciliaris</i>	Slaty-capped Flycatcher
^l <i>Todirostrum cinereum</i>	Common Tody-flycatcher
Subfamily Tyranninae	
^{*c} <i>Phyllomyias griseiceps</i>	Sooty-headed Tyrannulet
^w <i>Zimmerius chrysops</i>	Golden-faced Tyrannulet
^l <i>Camptostoma obsoletum</i>	Southern Beardless-tyrannulet
^l <i>Phaeomyias murina</i>	Mouse-coloured Tyrannulet
^{*c} <i>Capsiempis flaveola</i>	Yellow Tyrannulet
^l <i>Myiopagis subplacens</i>	Pacific Elaenia
^l <i>Pseudelaenia leucospodia</i>	Grey-and-white Tyrannulet
^{*c} <i>Elaenia flavogaster</i>	Yellow-bellied Elaenia
^z <i>Elaenia albiceps</i>	White-crested Elaenia
^w <i>Mecocerculus calopterus</i>	Rufous-winged Tyrannulet
^l <i>Euscarthmus meloryphus</i>	Tawny-crowned Pygmy-tyrant
^{*l} <i>Lophotriccus pileatus</i>	Scale-crested Pygmy-tyrant
^l <i>Tolmomyias sulphurens</i>	Yellow-olive Flycatcher
^l <i>Platyrinchus mystaceus</i>	White-throated Spadebill
^w <i>Onychorhynchus coronatus</i>	Royal Flycatcher
^{*c} <i>Myiophobus flavicans</i>	Flavescent Flycatcher
^l <i>Myiophobus fasciatus</i>	Bran-coloured Flycatcher
^{*l} <i>Myiobius barbatus</i>	Sulphur-rumped Flycatcher
^c <i>Myiobius atricaudus</i>	Black-tailed Flycatcher
^{†c} <i>Lathrotriccus griseipectus</i>	Grey-breasted Flycatcher
^{bd} <i>Contopus fumigatus</i>	Smoke-coloured Pewee
^{§c} <i>Contopus sordidulus</i>	Western Wood-pewee
^l <i>Contopus cinereus</i>	Tropical Pewee
^{*c} <i>Sayornis nigricans</i>	Black Phoebe
^l <i>Pyrocephalus rubinus</i>	Vermilion Flycatcher
^l <i>Ochthoeca salvini</i>	Tumbes Tyrant
^l <i>Muscigralla brevicauda</i>	Short-tailed Field-tyrant
^l <i>Fluvicola nengeta</i>	Masked Water-tyrant
^{†l} <i>Attila torridus</i>	Ochraceous Attila
^l <i>Myiarchus semirufus</i>	Rufous Flycatcher
^{*bt} <i>Myiarchus tuberculifer</i>	Dusky-capped Flycatcher
^l <i>Myiarchus phaeocephalus</i>	Sooty-crowned Flycatcher
^l <i>Tyrannus niveigularis</i>	Snowy-throated Kingbird
^l <i>Tyrannus melancholicus</i>	Tropical Kingbird
^{bd} <i>Megarynchus pitangua</i>	Boat-billed Flycatcher
^{*c} <i>Myiodynastes chrysocephalus</i>	Golden-crowned Flycatcher
^l <i>Myiodynastes bairdii</i>	Baird's Flycatcher
^l <i>Myiodynastes maculatus</i>	Streaked Flycatcher
^{*c} <i>Myiozetetes cayanensis</i>	Rusty-margined Flycatcher
^l <i>Myiozetetes similis</i>	Social Flycatcher
^l <i>Myiozetetes granadensis</i>	Grey-capped Flycatcher

* ^{bt} <i>Legatus leucophaius</i>	Piratic Flycatcher
Tribe Schiffornithini	
* ^t <i>Schiffornis turdinus</i>	Thrush-like Schiffornis
Tribe Tityrini	
* ^c <i>Pachyramphus cinnamomeus</i>	Cinnamon Becard
^t <i>Pachyramphus albogriseus</i>	Black-and-white Becard
† ^t <i>Pachyramphus spodiurus</i>	Slaty Becard
^t <i>Pachyramphus homochrous</i>	One-coloured Becard
Subfamily Cotinginae	
† ^t <i>Phytotoma raimondii</i>	Peruvian Plantcutter
* ^c <i>Ampelioides tschudii</i>	Scaled Fruiteater
Subfamily Piprinae	
* ^c <i>Masius chrysopterus</i>	Golden-winged Manakin
^w <i>Manacus manacus</i>	White-bearded Manakin
Family Thamnophilidae	
^t <i>Taraba major</i>	Great Antshrike
^t <i>Sakesphorus bernardi</i>	Collared Antshrike
^w <i>Thamnophilus zarumae</i>	Chapman's Antshrike
* ^c <i>Thamnophilus unicolor</i>	Uniform Antshrike
* ^t <i>Thamnophilus atrinucha</i>	Western Slaty-antshrike
* ^c <i>Thamnistes anabatinus</i>	Russet Antshrike
^{bd} <i>Dysithamnus mentalis</i>	Plain Antvireo
* ^t <i>Thamnomanes caesius</i>	Cinereous Antshrike
* ^{cy} <i>Myrmotherula fulviventris</i>	Checker-throated Antwren
* ^c <i>Myrmotherula schisticolor</i>	Slaty Antwren
* ^c <i>Cercomacra nigricans</i>	Jet Antbird
^w <i>Pyriglena leuconota</i>	White-backed Fire-eye
* ^c <i>Myrmeciza immaculata</i>	Immaculate Antbird
† ^w <i>Myrmeciza griseiceps</i>	Grey-headed Antbird
* ^c <i>Gymnopithys bicolor</i>	Bicoloured Antbird
Family Furnariidae	
Subfamily Furnariinae	
^{bs} <i>Geositta peruviana</i>	Coastal Miner
^t <i>Furnarius leucopus</i>	Pale-legged Hornero
^w <i>Synallaxis azarae</i>	Azara's Spinetail
^w <i>Synallaxis brachyura</i>	Slaty Spinetail
† ^t <i>Synallaxis tithys</i>	Blackish-headed Spinetail
^t <i>Synallaxis stictothorax</i>	Necklaced Spinetail
* ^c <i>Cranioleuca antisimensis</i>	Line-cheeked Spinetail
† ^w <i>Syndactyla ruficollis</i>	Rufous-necked Foliage-gleaner
* ^c <i>Anabacerthia variegaticeps</i>	Scaly-throated Foliage-gleaner
* ^c <i>Automolus rubiginosus</i>	Ruddy Foliage-gleaner
† ^w <i>Hylodyptes erythrocephalus</i>	Henna-hooded Foliage-gleaner
^p <i>Xenops minutus</i>	Plain Xenops
^{bd} <i>Xenops rutilans</i>	Streaked Xenops
Subfamily Dendrocolaptinae	
^w <i>Dendrocincla fuliginosa</i>	Plain-brown Woodcreeper
^t <i>Sittasomus griseicapillus</i>	Olivaceous Woodcreeper
^z <i>Xiphocolaptes promeropirhynchus</i>	Strong-billed Woodcreeper
^t <i>Lepidocolaptes souleyetii</i>	Streak-headed Woodcreeper
* ^c <i>Lepidocolaptes affinis</i>	Spot-crowned Woodcreeper
^t <i>Campylorhamphus trochilirostris</i>	Red-billed Scythebill
Family Formicariidae	
* ^{bt} <i>Grallaria guatemalensis</i>	Scaled Antpitta
^{bd} <i>Grallaria watkinsi</i>	Scrub Antpitta
Family Rhinocryptidae	
^w <i>Melanopareia elegans</i>	Elegant Crescent-chest

Family Vireonidae	
¹ <i>Cyclarhis gujanensis</i>	Rufous-browed Peppershrike
^{bd} <i>Vireo olivaceus</i>	Red-eyed Vireo
^{*c} <i>Vireo leucophrys</i>	Brown-capped Vireo
^w <i>Hylophilus decurtatus</i>	Lesser Greenlet
Family Corvidae	
Subfamily Corvinae	
Tribe Corvini	
¹ <i>Cyanocorax mystacalis</i>	White-tailed Jay
Family Muscicapidae	
Subfamily Turdinae	
^{*c} <i>Myadestes ralloides</i>	Andean Solitaire
^{*c} <i>Catharus fuscater</i>	Slaty-backed Nightingale-thrush
^w <i>Catharus dryas</i>	Spotted Nightingale-thrush
^{§f} <i>Catharus ustulatus</i>	Swainson's Thrush
¹ <i>Turdus reevei</i>	Plumbeous-backed Thrush
^w <i>Turdus maculirostris</i>	Ecuadorian Thrush
Family Sturnidae	
Tribe Mimini	
¹ <i>Mimus longicaudatus</i>	Long-tailed Mockingbird
Family Certhiidae	
Subfamily Troglodytinae	
¹ <i>Campylorhynchus fasciatus</i>	Fasciated Wren
^{*c} <i>Thryothorus mystacalis</i>	Whiskered Wren
^{bd} <i>Thryothorus sclateri</i>	Speckle-breasted Wren
^{*h} <i>Thryothorus nigricapillus</i>	Bay Wren
¹ <i>Thryothorus superciliaris</i>	Superciliated Wren
¹ <i>Troglodytes aedon</i>	House Wren
^w <i>Henicorhina leucophrys</i>	Grey-breasted Wood-wren
Subfamily Polioptilinae	
^{*c} <i>Microbates cinereiventris</i>	Tawny-faced Gnatwren
^w <i>Ramphocaenus melanurus</i>	Long-billed Gnatwren
¹ <i>Polioptila plumbea</i>	Tropical Gnatcatcher
Family Hirundinidae	
Subfamily Hirundininae	
[§] <i>Tachycineta albilinea</i>	Mangrove Swallow
¹ <i>Phaeoprogne tapera</i>	Brown-chested Martin
^w <i>Progne chalybea</i>	Grey-breasted Martin
^c <i>Progne modesta</i>	Southern Martin
^{*c} <i>Notiochelidon cyanoleuca</i>	Blue-and-white Swallow
¹ <i>Stelgidopteryx ruficollis</i>	Southern Rough-winged Swallow
[§] <i>Riparia riparia</i>	Sand Martin
[§] <i>Hirundo rustica</i>	Barn Swallow
[§] <i>Hirundo pyrrhonota</i>	Cliff Swallow
[§] <i>Hirundo rufocollaris</i>	Chestnut-collared Swallow
Family Fringillidae	
Subfamily Fringillinae	
Tribe Carduelini	
^{*c} <i>Carduelis magellanica</i>	Hooded Siskin
[†] <i>Carduelis siemiradzki</i>	Saffron Siskin
Subfamily Emberizinae	
Tribe Emberizini	
^{*c} <i>Zonotrichia capensis</i>	Rufous-collared Sparrow
¹ <i>Aimophila stolzmanni</i>	Tumbes Sparrow
^{*1} <i>Arremon aurantiirostris</i>	Orange-billed Sparrow
¹ <i>Arremon abeillei</i>	Black-capped Sparrow

- [♀]*Arremonops conirostris*
^{*c}*Atlapetes rufinucha*
^{bd}*Atlapetes leucopterus*
^{†w}*Atlapetes albiceps*
^{*c}*Atlapetes brunneinucha*
^w*Atlapetes torquatus*
- Tribe Parulini
- [†]*Parula pitiayumi*
[†]*Dendroica petechia*
[†]*Geothlypis aequinoctialis*
^w*Myioborus miniatus*
^{bd}*Basileuterus fraseri*
^w*Basileuterus trifasciatus*
^{*†}*Basileuterus fulvicauda*
- Tribe Thraupini
- ^w*Coereba flaveola*
[†]*Schistochlamys melanopis*
[♀]*Conothraupis speculigera*
^{*bt}*Chlorospingus ophthalmicus*
^w*Chlorospingus canigularis*
[†]*Hemithraupis guira*
[♀]*Tachyphonus luctuosus*
[†]*Piranga flava*
^{*†}*Ramphocelus flammigerus*
[†]*Thraupis episcopus*
^{*c}*Thraupis palmarum*
^{*c}*Anisognathus somptuosus*
[♀]*Pipraeidea melanonota*
[†]*Euphonia saturata*
[†]*Euphonia laniirostris*
^w*Euphonia xanthogaster*
^{*c}*Tangara arthus*
^{*c}*Tangara icterocephala*
^w*Tangara gyrola*
^{*bt}*Tangara ruficervix*
^{*c}*Tangara cyanicollis*
^{*c}*Tangara nigroviridis*
^{*c}*Tangara viridicollis*
^{*†}*Chlorophanes spiza*
^{*c}*Tersina viridis*
[†]*Rhodospingus cruentus*
[†]*Phrygilus plebejus*
[†]*Piezorhina cinerea*
[†]*Poospiza hispaniolensis*
[†]*Sicalis flaveola*
[†]*Sicalis taczanowskii*
^{*c}*Volatinia jacarina*
^w*Sporophila americana*
^{*bt}*Sporophila luctuosa*
^w*Sporophila nigricollis*
[†]*Sporophila peruviana*
[†]*Sporophila telasco*
^w*Tiaris obscura*
- Tribe Cardinalini
- [†]*Pheucticus chrysogaster*
^w*Saltator maximus*
[†]*Saltator albicollis*
- Black-striped Sparrow
 Rufous-naped Brush-finch
 White-winged Brush-finch
 White-headed Brush-finch
 Chestnut-capped Brush-finch
 Stripe-headed Brush-finch
- Tropical Parula
 Yellow Warbler
 Masked Yellowthroat
 Slate-throated Redstart
 Grey-and-gold Warbler
 Three-banded Warbler
 Buff-rumped Warbler
- Bananaquit
 Black-faced Tanager
 Black-and-white Tanager
 Common Bush-tanager
 Ashy-throated Bush-tanager
 Guira Tanager
 White-shouldered Tanager
 Hepatic Tanager
 Flame-rumped Tanager
 Blue-grey Tanager
 Palm Tanager
 Blue-winged Mountain-tanager
 Fawn-breasted Tanager
 Orange-crowned Euphonia
 Thick-billed Euphonia
 Orange-bellied Euphonia
 Golden Tanager
 Silver-throated Tanager
 Bay-headed Tanager
 Golden-naped Tanager
 Blue-necked Tanager
 Beryl-spangled Tanager
 Silver-backed Tanager
 Green Honeycreeper
 Swallow Tanager
 Crimson Finch-tanager
 Ash-breasted Sierra-finch
 Cinereous Finch
 Collared Warbling-finch
 Saffron Finch
 Sulphur-throated Finch
 Blue-black Grassquit
 Variable Seedeater
 Black-and-white Seedeater
 Yellow-bellied Seedeater
 Parrot-billed Seedeater
 Chestnut-throated Seedeater
 Dull-coloured Grassquit
- Golden-bellied Grosbeak
 Buff-throated Saltator
 Streaked Saltator

^w <i>Cyanocompsa cyanoides</i>	Blue-black Grosbeak
Tribe Icterini	
^w <i>Psarocolius angustifrons</i>	Russet-backed Oropendola
¹ <i>Cacicus cela</i>	Yellow-rumped Cacique
¹ <i>Amblycercus holosericeus</i>	Yellow-billed Cacique
¹ <i>Icterus mesomelas</i>	Yellow-tailed Oriole
¹ <i>Icterus graceannae</i>	White-edged Oriole
¹ <i>Sturnella bellicosa</i>	Peruvian Meadowlark
¹ <i>Dives warszewiczi</i>	Scrub Blackbird
¹ <i>Quiscalus mexicanus</i>	Great-tailed Grackle
¹ <i>Molothrus bonariensis</i>	Shiny Cowbird
¹ <i>Scaphidura oryzivora</i>	Giant Cowbird
