

New and noteworthy Records from Northwestern Peru, Department of Tumbes

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ABSTRACT

From late May to early August 2009 we conducted an extensive avifaunal survey of the Department of Tumbes in the far northwestern corner of Peru. Tumbes contains the core habitats unique to the endemic-rich Tumbesian biogeographic region in Peru, which along with montane, coastal and mangrove habitats explain the diversity of species occurring in the region. This expedition was the most thorough modern survey of this region to date. Here we document all significant ornithological records obtained during this expedition. These findings include species with no prior vouchers for Peru, six new species records for northwestern Peru, ten new records for Department of Tumbes, and one new species record for Peru.

Keywords: biodiversity, endemism, new records, Peru, Tumbes Department

RESUMEN

Entre finales de mayo y principios de agosto 2009 realizamos un estudio extenso de la avifauna en el extremo noroccidental de Perú en Tumbes. En este departamento se encuentra el núcleo de hábitats que son únicos en la región biogeográfica Tumbesina en Perú, tan rica en endemismos. Estos, junto con la presencia de hábitats montañosos, costeros y de manglares, explican la diversidad de especies que existen en la región. Esta expedición representa el estudio más exhaustivo y moderno realizado en la región. En este artículo documentamos todos los hallazgos ornitológicos considerados significativos del estudio. Estos hallazgos incluyen especies de las cuales no había especímenes científicos para Perú, seis especies que representan nuevos registros para el noroeste de Perú, diez especies que constituyen nuevos registros para el departamento de Tumbes y una especie que

no estaba aún registrada en el Perú.

Palabras clave: biodiversidad, endemismo, registros nuevos, Perú, departamento de Tumbes

The avifauna of southwestern Ecuador and northwestern Peru has a unique combination of habitats and biogeographic units, ranging from the dry coastal areas to semi-humid tropical forests. Within this area, roughly 30% of the avifauna is considered endemic (Parker *et al.* 1995). This high degree of endemism has long been recognized (Chapman 1926, Müller 1973, Cracraft 1985) and highlights the region as an important conservation unit (Best & Kessler 1995, Angulo 2009), which lead to the creation of the protected areas: Santuario Nacional los Manglares de Tumbes, Parque Nacional Cerros de Amotape, Reserva Nacional de Tumbes and Area de Conservación Regional Angostura – Faical. Called the Tumbesian Center of Endemism (Fig. 1), it extends from the Río Chone, Prov. Guayaquil, Ecuador, south along an arid coastal plain to Chiclayo, Department of Lambayeque, Peru. The western border is the Pacific Ocean, and the eastern border is the Andes (Cracraft 1985, Parker *et al.* 1995). The area includes mangrove forest along the mouth of the Río Tumbes, dry forests mostly along hilly terrain below 500 m, humid and evergreen forest above 500 m, especially toward northeastern Department of Tumbes, montane forest mainly on the ridges of the Cordillera Amotape up to 1500 m, desert in the coastal lowlands, including scattered patches of Prosopis-dominated forest along water-courses, and scrubby, dry, woodland in the lower foothills. A striking humidity gradient extends from the more humid areas in northeast Tumbes to the drier areas to the west and south.

The Tumbesian region in general has been neglected in terms of ornithological research

compared to many areas in Peru, and only a few brief avifaunal surveys have been conducted in the last 35 years (Wiedenfeld *et al.* 1985, Parker *et al.* 1995, Walker 2002). Almost every visit has produced records of species previously unknown for Department of Tumbes and even for Peru as a whole, and information is still lacking on the natural history, ecology, taxonomic relationships, and conservation status of many species.

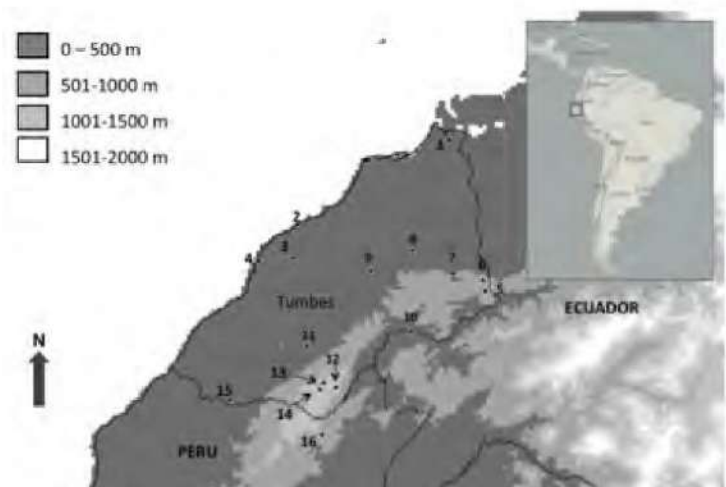


Figure 1. The study area, indicating the localities where fieldwork was conducted.

1. Santuario Nacional Los Manglares de Tumbes (sea level)
2. Zorritos (sea level)
3. Gallery forest in Río Bocapán drainage (below 10 m)
4. Boca Río Palo Santo/Shrimp Farms (below 10 m)
5. Figueroa (600 m)
6. Campo Verde (750 m)
7. El Caucho Biological Station (350 m)
8. Quebrada Angostura (75 m)
9. Rica Playa (100 m)
10. Cabo Inga (600 m)
11. Río Bocapán (0-200 m)
12. Cerro El Encanto (900-1100 m)
13. Cerro El Plátano (950 m)
14. Cerro Los Limos (1100 m)
15. Quebrada Fernández (0-200 m)
16. Cerro El Barco (1450 m)

To improve understanding of the Tumbesian avifauna, we spent 65 days from late May to early August 2009 surveying the birds in a diversity of habitats within the Department of Tumbes. Here we present the most noteworthy records of our fieldwork. Our records include new records for Peru, for the western slope of the Peruvian Andes, and for Department of Tumbes.

METHODS

Study Areas

Evergreen and Semi-deciduous Forest.- Four sites in the northern Parque Nacional Cerros de Amotape were visited 4-24 June 2009, including: Campo Verde Police Station (03°50'44" S; 80°10'35" W, 750 m), El Caucho Biological Station (3°49'27"S, 80°15'23"W, 350 m), Figueroa Police Station (03°52'30"S, 80°10'13"W, 600 m), and Cotrina Police Station (03°50'31" S, 80°10'03" W, 700 m), as well as some areas near these sites. The topography was hilly throughout, with several small to large streams. Trees in the families Bombacaceae, Burseraceae, and Leguminosae were among the most common and conspicuous in this extensively forested region (Parker *et al.* 1995).

At higher elevations, mosses and bromeliads increased in abundance. In general the forest understory was fairly open with a sparse herbaceous layer and young trees; vegetation was denser along streams, forest gaps, and in second-growth. Around Campo Verde and Figueroa Police Station large areas had previously been cleared. The clearing around Figueroa was much drier with only occasional trees or clumps of vegetation. Humidity and plant diversity increased towards lower latitudes and higher elevations from the driest site, El Caucho (350-500 m), to the wettest,

Campo Verde (ca. 750-900 m).

This is consistent with previous descriptions of the area (Wiedenfeld *et al.* 1985, Parker *et al.* 1995). This area may have received more rainfall prior to our visit than in previous surveys. Quebrada Faical, which flows past El Caucho, was a large, continuously flowing stream during our visit, whereas Wiedenfeld *et al.* (1985) reported that the quebrada was reduced to small, isolated pools in June 1979. Secondly, Wiedenfeld *et al.* (1985) noted extensive foliage loss by the time they arrived in June 1979; however, during our visit most trees still retained their foliage.

High Elevation Semi-deciduous Forest

From 6-23 July 2009 we worked in the southern areas on Parque Nacional Cerros de Amotape. From our base camp at Cerro el Plátano (04°07'46"S; 80°37'21"W; 950 m) we explored three higher cerros: El Encanto (04°08'36"S, 80°35'11"W; 900-1100 m), El Barco (04°10'27"S, 80°37'12"W; 1450-1500 m), and Los Limos (04°08'49"S, 80°37'51"W, 1100 m). El Plátano was a large, flat, open area used extensively for livestock grazing at the confluence of two streams. Trails radiated from camp following streams or ascending several of the nearby hills. Trees in the family Bombacaceae (particularly *Ceiba trichistandra*) were a predominant component of the forests, but plant diversity was low. Also found here along the larger streams was an *Acacia macracantha*, bromeliads (presumably *Tillandsia* sp.; Parker *et al.* 1995) and epiphytes were present, but were much more common on the higher mountain-tops. Inside the forest the understory was generally open, but streams and forest gaps were typically dominated by dense vegetation. This area was much drier than sites farther north within the national park.

The top of El Barco had previously been

suspect that in the past inhabitants had cleared much of the original forest because the ridge was largely covered in dense second-growth and *Chusquea*-like bamboo. Trees in the small patches of forest were short (canopy ca. 8-10 m tall) and blanketed in moss and epiphytes. These forest patches had an open understory with a denser herbaceous layer.

Tropical Dry Forest

This forest was typically encountered in the foothills of the Cerros de Amotape below 600 m at Cabo Inga (04°00'03"S, 80°24'04"W, 600 m), Quebrada Angostura (03°45'37"S, 80°22'27"W, 75 m), and Rica Playa (03°49'01"S, 80°29'19"W, 100 m). Although tree species composition was generally similar to forests at higher elevations in the Cerros de Amotape, these areas were much drier. The deciduous tree species had lost nearly all their leaves. The understory in general contained more vines and tangles than at higher elevations, and there was often a dry, grassy groundcover.

Gallery Forest

Gallery forest habitat in Tumbes occurred along medium-size rivers in the dry coastal foothills. Most of this natural cover along the Río Tumbes had been converted to agriculture. We worked mainly along the Río Bocapán (04°01'03"S, 80°41'13"W, below 10m) and Quebrada Fernandez drainages (04°10'50"S, 80°53'01"W, below 10 m). These rivers changed little in elevation, and we sampled mainly below 200 m. The forest was comprised primarily of *A. macracantha* and *Prosopis pallida* trees. Further from the river the habitat shifted to drier scrubland with some small trees that had largely dropped their leaves. The understory of the gallery forest had been destroyed wherever goats or other livestock were present, whereas in the absence of goats there was a denser understory. Between visits in May and July

there was a noticeable loss in foliage within the forests. During our surveys, both the Río Bocapán and Quebrada Fernández had only small, isolated stretches of flowing water.

Mangroves

Mangrove habitat was found at Santuario Nacional Los Manglares de Tumbes (03°29'00"S, 80°18'38"W; sea level) and a privately owned shrimp farm nearby (03°26'49"S, 80°17'51"W, below 10 m). They were visited on 1, 2, 14, 27 June, and 26, 30 July 2009. The mangroves in Tumbes are nearly at the southern limit of this habitat along the Pacific coast of South America. Mangrove species found in Tumbes include *Avicennia germinans*, *Rhizophora harrisonii*, *Laguncularia recemosa*, and *Conocarpus erectus* (Best & Kessler 1995). We worked along the edges of mangrove islands within the national sanctuary and at the shrimp farm. Between mangrove stands were also shrimp ponds, canal networks, and lagoons with varying levels of water. Surrounding the mangrove areas, and at areas not affected by salt water, a belt of xeric species was common, with species in the genera *Prosopis*, *Acacia*, and *Baccharis*.

Dry coastal scrub

We encountered this habitat at our main base just south of Zorritos (03°41'20"S, 80°41'44"W; sea level) and south along the coast. To the east, dry streambeds bisect low, rocky hills, which were sparsely covered by semi-arid scrub and small trees. The vegetation was losing its foliage by the time we arrived in late May, with most species leafless by early August. Some common tree species included *A. macracantha* and *P. pallida*. Groundcover consisted primarily of sparse grass and cacti. Sites further south resembled the location at Zorritos, but were flatter. Also near several of these sites were river drainages that formed mudflats where

they entered the Pacific Ocean. One of these areas was the Río Palo Santo (03°46'48"S 80°47'54"W, below 10 m), which we visited on 21 June, and 1, 21, 26, 30 July 2009. In addition, low-lying dunes along the beaches in this area were covered in sparse grasses.

Savanna

We encountered this habitat primarily in southern Department of Tumbes near the base of the foothills of the Cerros de Amotape. This open grassland had low densities of short shrubs and the occasional leafless tree. Scattered *P. pallida* trees were most common, but species such as *Parkinsonia aculeata*, *Curatella americana*, *Caesalpinia sp.*, and *Capparis sp.* were also prevalent in these areas.

RESULTS

Here, we include the noteworthy records of our expedition to Department of Tumbes. For those species for which we had a good sample size, subspecies identification was made by comparison with LSUMZ and CORBIDI collections.

Species Accounts

Crested Guan (*Penelope purpurascens aequatorialis*). Previously known from sight records (Parker *et al.* 1995) and a recording (XC16705) by Fernando Angulo in Department of Tumbes, we obtained the first specimens for Peru, allowing confirmation of subspecies identification (see Appendix for specimen information). Two males were collected on 9 June, around El Caucho, and another on 21 June near Campo Verde. The species occurs in the nearby prov. of Loja Ecuador (Ridgely & Greenfield 2001).

Comb Duck (*Sarkidiornis melanotos sylvicola*). Three individuals were observed along

Quebrada Fernandez on 29 June 2009, and two were collected on 29 June and 4 July. These individuals, all immatures, represent the first vouchers for Department of Tumbes. They were found along a stream in an arid river valley in the coastal foothills. Populations of this species seem to be disjunct, and individuals are known to wander (Ridgely & Greenfield 2001). The nearest populations of this species occur in the middle Marañon Valley (Schulenberg *et al.* 2007), but isolated records have been documented in Rica Playa, Tumbes, at Piura (Quebrada Fernandez, Batanes, Laguna Ramon, Laguna Ñapique and Lambayeque (Laquipampa, La Viña, Pacora, Tinajones) (Angulo *et al.* 2012, Solano-Ugalde pers. comm.). Also in the lowlands of prov. Loja in southwestern Ecuador, where they may be resident (Ridgely & Greenfield 2001, Alava & Haase 2011).

Brown Booby (*Sula leucogaster*). A sight record by DFL of an immature bird (brown belly but white underwing coverts noted) flying by the beach at Zorritos on 28 May was our only record. This represents the first record for Department of Tumbes, and Schulenberg *et al.* (2007) considered the species “[a] vagrant to Peruvian coastal and offshore waters, known only from sight records”. The species has only recently being reported in coastal Ecuador (Haase 2011).

Andean Condor (*Vultur gryphus*). An adult male was observed (JRS, PB, CS) and photographed by JRS and CS (Fig. 2) on 19 July soaring 50 -100 m above the ridge of Cerro el Barco with a King Vulture (*Sarcoramphus papa*). This record was in the Department of Piura, but very close to the border with Tumbes, where no records are known. The nearest records for this species are from prov. Loja, Ecuador (Ridgely & Greenfield 2001), and Department of Piura,



Figure 2. Male Andean Condor photographed on 19 July 2009 at Cerro el Barco. Photograph by César Sánchez.

Double-toothed Kite (*Harpagus bidentatus*). One adult male was collected on 14 June 2009 in tall evergreen forest along the trail from the Campo Verde to Cotrina Police Stations. This represents the first record of the species for western Peru, and a major southward range extension from previous sight records in central Guayas, n. Los Ríos, and w. Chimborazo, Ecuador (Ridgely & Greenfield 2001).

Gray-lined Hawk (*Buteo nitidus*). One adult was observed on 9 June El Caucho by CS, and two were observed by DFL, a vocalizing bird recorded at the same locality on 22 June (XC97025) and an immature at Campo Verde on 17 June (XC97024). This represents the second to fourth records of the species for Department of Tumbes, and for Peru west of the Andes. The nearest records are from prov. El Oro, Ecuador (Ridgely & Greenfield

2001). The other records from northwestern Peru were photos in the same general area on May 2007 and December 2009 (Piana *et al.* 2010).

Ornate Hawk-Eagle (*Spizaetus ornatus*). One was collected on 20 June 2009 near Campo Verde, ca. 750 m, with another (or possibly the same?) bird sound recorded on 17 June 2009 nearby (XC97026, XC97027). This represents the first specimen for Department of Tumbes. The bird was an adult female with heavy molt on body, primaries, and rectrices. The nearest populations occur in the northeastern Río Chinchipe Valley, Department of Cajamarca, Peru, and at Vicente forest in prov. Loja, Ecuador (Ridgely & Greenfield 2001). The species was historically considered to occur in Tumbes until the 19th century, but with few recent records (Schulenberg *et al.* 2007, Piana *et al.* 2010).

Rufous-necked Wood-Rail (*Aramides axillaris*). Seven were collected and others observed in moderate densities at various mangrove sites in northwestern Department of Tumbes. Although sight records have been reported from Tumbes (Parker *et al.* 1995, Valqui & Walker 2002), these individuals represent the first specimens for Peru. Two birds were collected at a shrimp farm with patches of mangrove forest. Five were later collected at the Santuario Nacional Los Manglares de Tumbes. Populations of this species are known to occur in the Río Guayas estuary in prov. Guayas, Ecuador (Ridgely & Greenfield 2001). However, because of habitat destruction in coastal Ecuador, its range is thought to have been more extensive in the past (Ridgely & Greenfield 2001). All five birds collected were immatures, but we photographed adults at the same site; we also made sound recordings (XC 97031, XC97032, XC97033). Observations by M.

Kessler (Parker *et al.* 1995) and B. Walker (Valqui & Walker 2002) suggest that at least some individuals migrate inland to interior forest to breed during the rainy season, but return to coastal mangroves during the dry season, much as has been suspected for Little Wood-Rail (*A. mangle*) in Brazil (Redies 2010).

Wilson's Phalarope (*Phalaropus tricolor*). DFL and CS collected an adult female in breeding plumage with a damaged wing at the river mouth near Acapulco on 30 May 2009. Individuals of this species are known to overwinter in Peru (Schulenberg *et al.* 2007); in this case, the damaged wing was the likely cause.

Red-necked Phalarope (*Phalaropus lobatus*). DFL and CS collected an adult female in non-breeding plumage, with a large growth on the side, at the river mouth near Acapulco on 30 May 2009. Individuals are known to overwinter in Peru (Schulenberg *et al.* 2007); in this case, a 10 mm diameter cyst on the bird's side was the likely cause.

Pallid Dove (*Leptotila pallida*). Previously known from Peru only from sight records (Walker 2002), six were collected from 16-21 June, near Campo Verde, the same area where previously observed. The species is known from nearby prov. El Oro, Ecuador (Ridgely & Greenfield 2001).

Mottled Owl (*Ciccaba virgata*). First heard at Campo Verde on 16 June 2009, and two were collected on 19 and 20 June. This represents the first record west of the Andes of Peru. At least three pairs were heard around this locality, and we sound recorded several individuals (XC97077, XC97079, XC97082, XC97084); the birds called mainly early at dusk and right before dawn. Around Campo Verde, this species seemed to outnumber

Black-and-white Owl (*C. nigrolineata*), and we found it lower in the vegetational strata (Black-and-white Owl was typically in the subcanopy). The species was expected in the area because it has been found at several sites in southwestern Ecuador in provs. El Oro and Loja (Ridgely & Greenfield 2001). Following the taxonomy used by Ridgely and Greenfield (2001), trans-Andean birds should be nominate *virgata* (and appear distinct from LSUMZ specimens of *centralis* from southern Mexico to western Panama, as well as birds from western Amazonia, which appear to be *superciliaris*). Voices of cis-Andean (e.g. XC64204, XC94943, XC97086) and trans-Andean birds are very different, as well. However, Cassin (1848) described the nominate subspecies from the vague locality "South America"; the type locality was restricted to "Bogota" by Berlepsch (in Peters 1940). The general uncertainty of the provenance of "Bogota" specimens (e.g., Hilty & Brown 1986) suggests that the name *virgata* could be either from the Amazonian slope of the Eastern Andes or the Magdalena valley; we can find no information on the voice or plumage of Eastern Andean birds. However, listening to recordings (available at xeno-canto.org) from several sites around northern Colombia and Venezuela suggests that the voice type (and thus taxon?) of the Caribbean slope of those countries is more like that of trans-Andean birds than like western Amazonian birds. Furthermore, photos of the holotype, housed at the Philadelphia Academy of Natural Science, show a bird with plumage characters of the trans-Andean population. Thus, the name *virgata* may be best placed on trans-Andean birds, supporting Ridgely and Greenfield's (2001) taxonomy. König and Weick (2008) applied the name *virgata* to birds from northeastern Colombia, Venezuela, Trinidad, and Amazonian eastern Ecuador, splitting the species *Strix* (= *Ciccaba*) *virgata* (including

macconnellii, *superciliaris*, and *borelliana*) from trans-Andean birds, which they named *Strix squammulata* (including *tamaulipensis* and *centralis*) but that assessment does not agree with Cassin's (1848) description and the plumage of the holotype, the distribution of voice types in northwestern South America, nor an LSUMZ specimen from northern Amazonian Peru (which represents the same voice type as in eastern Ecuador). Clearly, a careful taxonomic reassessment is in order.

Buff-fronted Owl (*Aegolius harrisi harrisi*). Two specimens were netted in second growth scrub and dense bamboo at 1450 m on the ridge top of Cerro El Barco on 22 and 23 July. These are the first records for Department of Tumbes. West of the Andes in Peru, this species was previously known from Department of Piura (Schulenberg *et al.* 2007), and a recording by Niels Krabbe (XC45851) from Department of Lambayeque, and in western Ecuador, from provs. Pichincha (Ridgely & Greenfield 2001), Azuay (Krabbe & Nilsson 2003), and Loja (A. Solano-Ugalde, pers. comm.).

Brown Violetear (*Colibri delphinae*). DFL encountered two sites with singing males in the hills south of Campo Verde on 14 June (XC97092) at ca. 850 m in thick edge vegetation, and three individuals were collected on 15 June 2009 (two of which were sound-recorded: XC97093, XC97094). These are the first records for western Peru, and are 150 km, straight-line distance (over water), from the nearest record in western Ecuador: Loma Alta in the Cordillera de Colonche in prov. Guayas (Ridgely & Greenfield 2001). Two males were counter-singing around the edge of a gap within tall, humid forest; these two birds gave single notes repeatedly, occasionally chasing one another with gravelly vocalizations similar to those of Sparkling Violetear (*C. coruscans*).

Green-breasted Mango (*Anthracothorax prevostii iridescens*). One individual was seen by TV on 11 June between Campo Verde and El Caucho. CS observed another individual foraging near a *Heliconia* sp. patch, next to a small creek on 15 June ca. 1 km nw. of Campo Verde. Green-breasted, Black-throated (*A. nigricollis*) and Veraguan Mangoes (*A. veraguensis*) form a species complex (del Hoyo *et al.* 1999), with non-overlapping distributions. The placement of *iridescens* in *A. prevostii*, is not undisputed. Zimmer (1950), del Hoyo *et al.* (1999), Schulenberg *et al.* (2007), and Remsen *et al.* (2012) placed it here, but others suggest it belongs to *A. nigricollis* (Peters 1945, Ridgely & Greenfield 2001). In any case, *iridescens* consists of isolated populations in Colombia, and Ecuador, with a few records for northern Peru. The first records for Peru were from Lechugal, Department of Tumbes (Taczanowskii 1887), close to the border with Ecuador. We surveyed the area around Lechugal during three non-consecutive days, with negative results.

Rufous-tailed Hummingbird (*Amazilia tzacatl jucunda*). Four individuals were collected and several others observed in and around Campo Verde from 14 to 21 June. This represents the first record of the species for Peru. The nearest populations are in the adjacent provs. of Loja and El Oro, Ecuador (Ridgely & Greenfield 2001).

Andean Emerald (*Amazilia franciae viridiceps*). DFL and CJS obtained sound recordings of two individuals (XC93462), one of which, an adult male, was collected on 14 June 2009 about 2.4 km west of Campo Verde along the trail to El Caucho, on a steep slope and around a gap of second growth. This is the first Peruvian record of this taxon; the nearest sites known for it are approximately 70 km to the east in northwestern prov. Loja

(Ridgely & Greenfield 2001). We note that the song of *viridiceps* is quite different from that of *A. f. cyanocollis* (but is more similar to nominate *franciae*), from the Marañon drainage, and that a taxonomic reassessment of the species as a whole is warranted.

Purple-crowned Fairy (*Heliathryx barroti*). Although unable to obtain any documentation, AGB, DGO and SAF observed this species on the trail between Campo Verde and Cotrina on 15 and 16 June. The individual was identified by its long tail and whole white underparts. The species is known from very nearby in prov. El Oro, Ecuador (Ridgely & Greenfield 2001), and its presence in Peru should be expected. Documentation of its presence in the country would be preferable for inclusion on the Peruvian list.

White-whiskered Puffbird (*Malacoptila panamensis poliopsis*). We collected two females at El Caucho on 8 and 10 June. These represent the first specimens for Peru. An additional individual was sound recorded there on 12 June (XC97095, XC97096, XC97097). This species was previously observed and photographed on 14 December 2007 at El Caucho, and Campo Verde (Have 2009). The species occurs in neighboring prov. El Oro, Ecuador (Rasmussen and Collar 2002).

Collared (Pale-billed) Aracari (*Pteroglossus torquatus erythropygius*). Two birds were observed by PMB for about 3 mins. on 17 June near Campo Verde. The birds were silent and foraged in tall (ca. 25m), undisturbed evergreen forest along a small stream, before flying off together. This species was first observed and recorded in Peru on several dates in May 2000 also near Campo Verde (Walker 2002). Collared (Pale-billed) Aracari occurs in the lowlands and foothills of western Ecuador south to prov. El Oro

(Ridgely & Greenfield 2001).

Olivaceous Piculet (*Picumnus olivaceus*). Six specimens were collected 18-19 June 2009 at Campo Verde, some with associated sound recordings (XC97098, XC97099, XC97100, XC97101, XC97102). Although reported by Parker *et al.* (1995) and Walker (2002) also from the Campo Verde area, these are the first specimens for Peru. The subspecies *harterti* is described from Paramba, in northwestern Ecuador (Peters 1948), and thus is the expected taxon in Tumbes. We note that the underparts and wings of the Tumbes specimens have much more saturated yellow and less prominent streaking below than two specimens at LSUMZ of *harterti* from prov. Los Ríos, Ecuador. Whether this difference is due to fading of yellow pigments in the older LSUMZ specimens or if it indicates that Tumbes birds are indeed different is difficult to assess based on the number of specimens at hand. The piculet was a common member of mixed-species flocks in the humid forest around Campo Verde. In Ecuador it occurs as close as provs. of Guayas, El Oro, and Loja (with no recent reports from the last one; Ridgely & Greenfield 2001).

Line-cheeked Spinetail (*Cranioleuca antisianensis palamblae*). Ten individuals were collected in Parque Nacional Cerros de Amotape in southern Department of Tumbes, 14-24 July, at three localities (Cerro El Plátano, Cerros Los Limos, Cerro El Barco, 1100-1500m). These represent the first documented records of this species in Department of Tumbes. The species was previously known only from the west slope of the Andes in Departments of Piura and Cajamarca, Peru (Schulenberg *et al.* 2007), and provs. Loja, and El Oro of Ecuador (Ridgely & Greenfield 2001).

Western Slaty-Antshrike (*Thamnophilus atrinucha atrinucha*). Nine were collected

8-20 June at El Caucho, Campo Verde and Figueroa. Walker (2002) reported the first sight records from Peru; ours are the first specimens for the country and confirm the subspecies identification. Associated sound recordings are XC97104, XC97105, XC97106, XC97107, and XC97109.

Yellow-bellied Elaenia (*Elaenia flavogaster*). One collected at the edge of dry secondary forest on 19 June at the Figueroa Police Station, near the border between Peru and Ecuador at ca. 600 m represents the first record for Peru west of the Andes. The nearest populations occur in southwestern El Oro in nearby Ecuador (Ridgely & Greenfield 2001).

Sulphur-rumped Flycatcher (*Myiobius barbatus aureatus*). After studying our series of *Myiobius*, we concluded that two species were present in the forests of Department of Tumbes: Black-tailed Flycatcher (*M. atricaudus*) and Sulphur-rumped Flycatcher. Eight specimens of the latter were collected, which represent the first record for western Peru. We obtained one sound recording: XC97103. These represent subspecies *aureatus*, which was placed by Ridgely and Greenfield (2001) in *M. sulphureipygius*, which they treated as a separate species from *M. barbatus*, the former replacing the latter in the trans-Andean lowlands), Ridgely and Greenfield (2001) also noted that the southernmost records of the taxon are from Buenaventura, prov. El Oro, and Alamor and Guayquichuma, prov. Loja, Ecuador, about 70 km east of Campo Verde.

Little Ground-Tyrant (*Muscisaxicola fluviatilis*). One was collected on 9 July in an arid valley at the confluence of Quebrada Brunos and Quebrada de Angostura, 65 m, in the northeastern coastal foothills of Department of Tumbes. This represents the

first record for Department of Tumbes and the first record west of the Andes. Vagrants from widespread localities (e.g., from Lago Titicaca in La Paz dept., Bolivia) suggest it may be migratory (Fitzpatrick 2004). More evidence is needed to better understand these movements.

Ochraceous Attila (*Attila torridus*). We collected six specimens at Campo Verde 14-18 June. Although this species was previously known from this area of Peru (Schulenberg *et al.* 2007), these represent the first specimens from the country. During 16 days in El Caucho-Campo Verde area, we detected it only above 600 m near Campo Verde. Five of the six specimens were collected between 700-775 m in humid tropical forest adjacent to Campo Verde, the other bird, 3 km E of El Caucho in semi-humid tropical forest at 600 m. Individuals were heard vocalizing (XC97111) and seen at heights from as low as 1 m up to 15 m in the vegetational strata.

Peruvian Plantcutter (*Phytotoma raimondii*). On 28 May, DFL and CS photographed and recorded (XC97113, XC97116, XC97116) a pair near the mouth of Río Palo Santo in a patch of *P. pallida* trees, the leaves of which the birds were eating. A single female (Fig. 3) was observed and photographed in the same area on 21 June by BKS and CS. Another individual (female) was observed on 30 June (CJS) in the Río Bocapán drainage in an area also covered by *P. pallida* woodlands. These observations extend the distribution ca. 70 km to the north of previous records (Flanagan *et al.* 2009), and represent the first modern records of the species for Department of Tumbes, although the type specimen was presumably collected in Tumbes (Taczanowski 1883, Plenge 1979).



Figure 3.

Female Peruvian Plantcutter photographed on 21 June 2009 at Río Palo Santo, Department of Tumbes, Peru. Photograph by Brian K. Schmidt.

Flame-rumped Tanager (*Ramphocelus flammigerus icteronotus*). Four birds were observed and an adult female collected on 10 June at El Cacho. Three other individuals were observed there including one pair (BKS) and one lone male (JRS). Recently recorded within the borders of Peru in Department of Tumbes (Piana *et al.* 2006), we obtained the first specimen for Peru and confirmed the subspecies identification. All birds were observed in forest edge along streams and were often associated with mixed-species flocks. This species occurs in w. Ecuador south to the humid lowlands of provs. El Oro and Loja (Ridgely & Greenfield 2001). We noted the species as much more common just across the border in Ecuador and suspect that it will soon invade second growth habitats on the Peruvian side in numbers.

Silvery-throated Tanager (*Tangara icterocephala icterocephala*). Two birds were collected on 14 and 15 June at Campo Verde. These represent the first specimen record of the species and subspecies in Peru. It was previously known from a sight record from the same area (Walker 2002), and is known to occur on provs. El Oro and Loja in adjacent Ecuador (Ridgely & Greenfield 2001). Both birds were immatures in non-breeding condition and were with mixed-species flocks in which Bay-headed Tanager (*Tangara gyrola*) was the commonest species.

Guira Tanager (*Hemithraupis guira guirina*). We observed the species on multiple occasions at Santuario Nacional Los Manglares de Tumbes and collected a male on 14 June. The species was previously known from the Tumbes area from several sight records and one Stolzmann specimen at Santa Lucía, Tumbes on 13 January 1877 (Ridgely & Greenfield 2001, Schulenberg pers. comm.). The nearest populations found in mangrove forests are from Manglares-Churute Ecological Reserve, prov. Guayas, although it is expected in the neighboring prov. of El Oro, Ecuador (Ridgely & Greenfield 2001).

Bay-crowned Brush-Finch (*Atlapetes seebohmi simoni*). Previously unknown for Department of Tumbes, 15 were collected 10-21 July at Cerro El Plátano. Exploration of the region found the species to be fairly common. We generally observed it in small groups in scrubby habitat and second growth; it was seen regularly with White-headed (*Atlapetes albiceps*), and White-winged Brush-Finches (*A. leucopterus*), and Black-capped Sparrow (*Arremon abeillei*). This species ranges from prov. Loja in sw. Ecuador south along the western Andes to Department of Ancash, Peru (Ridgely and Greenfield 2001, Schulenberg *et al.* 2007).

Blue Seedeater (*Amaurospiza concolor aequatorialis*). Seven birds were collected 19-23 July at Cerro El Barco. These represent the first record for Department of Tumbes. We found this seedeater to be rather common in seeding *Chusquea* sp. bamboo stands, surrounded by second growth montane forest. Schulenberg *et al.* (2007) reported its habitat as dense humid forest usually near flowering bamboo. This species is relatively rare in Peru, and this new population is disjunct from the Peruvian Andes populations of the subspecies *aequatorialis* (Schulenberg *et al.* 2007), representing the fourth-known locality for Peru (Angulo *et al.* 2012).

DISCUSSION

Our fieldwork represents the largest ornithological survey of extreme northwestern Peru to date. 272 species were recorded, belonging to 59 families. Of the 61 endemic taxa to the Tumbesian Center of Endemism (*sensu* Cracraft 1985, Parker *et al.* 1995), we recorded all but two species: White-winged Guan (*Penelope albipennis*) and Green-crowned Woodnymph (*Thalurania fannyi sensu* Remsen *et al.* 2012).

During our fieldwork in Department of Tumbes, we found one species new for Peru (Rufous-tailed Hummingbird), and the undocumented sight record of Purple-crowned Fairy would be an additional species new for Peru. We obtained the first specimen documentation for 10 species for Peru (Crested Guan, Rufous-necked Wood-Rail, Pallid Dove, White-whiskered Puffbird, Olivaceous Piculet, Western-Slaty Antshrike, Ochraceous Attila, Flame-rumped, Silvery-throated, and Guira Tanagers), and the first records for the Peruvian Pacific slope of 7 species (Double-toothed Kite, Mottled Owl, Andean Emerald, Brown Violetear, Yellow-bellied Elaenia, Sulphur-rumped Flycatcher, and Little Ground-

Tyrant). In addition, we report several species previously unpublished or unknown from the Department of Tumbes, such as Comb Duck, Brown Booby, Wilson's, and Red-necked Phalaropes, Buff-bellied Owl, Line-cheeked Spinetail, Blue Seedeater, and Bay-crowned Brush-Finch. Our observations of Gray-lined Hawk, Solitary Eagle (*Harpyhaliaetus solitarius*), Green-breasted Mango, Collared (Pale-billed) Aracari, and Saffron Siskin (*Carduelis siemiradskii*) were among the very few for the Department. We failed in finding and documenting several species reported from Tumbes: Green-crowned Woodnymph (*Thalurania fannyi*; Parker *et al.* 1995), Barred Puffbird (*Nystalus radiatus*; Mischler 2006), Black-cheeked Woodpecker (*Melanerpes pucheranii*; Piana *et al.* 2006), Sooty-headed Tyrannulet (*Phyllomyias griseiceps*; Walker 2002), Pale-vented Thrush (*Turdus obsoletus*; Walker 2002), and Black-striped Sparrow (*Arremonops conirostris*; Parker *et al.* 1995); it is possible that the presence of these species in Tumbes is seasonal, or that their presence in Tumbes is irregular. As always, further fieldwork will clarify the status of these species in the Department.

A comparison of our surveys to those by Wiedenfeld *et al.* (1985) indicates differences in species composition at the sites visited by both expeditions. Two species in particular seem to have changed dramatically in the El Caucho and Campo Verde areas: Blackish-headed Spinetail and Gray-breasted Flycatcher (*Lathrotriccus griseipectus*). The spinetail, a species that seems to specialize on dry brush and deciduous woodland (*pers. obs.*), was common at El Caucho in 1979, but we failed to encounter it in 2009, although we did encounter it in drier habitats further south. Conversely, the flycatcher, which appears to need more evergreen woodland (*pers. obs.*), was not encountered at all in the El Caucho and Campo Verde areas in

1979 (despite mist-netting efforts), but first reported from there in 1988 by Parker *et al.* (1995), whereas we found the species to be common at both sites in 2009. It seems likely that these changes may be related to the increase in rainfall in northwestern Peru with the increasing frequency of El Niño events in the past three decades (Lee & McPhaden 2010).

Presumably, with increasing rainfall, the forest changed from more deciduous to more evergreen, and birds preferring the former habitat (such as the spintail) dropped out, whereas birds that favor wetter habitats (such as the flycatcher) colonized or increased in abundance. The precipitation cline between sites in southern Ecuador and northern Peru is steep, resulting in a very diverse mosaic of habitats dependent on narrow changes in precipitation. Changes in global climate, locally represented by the increased rainfall of El Niño events, clearly affect this habitat mosaic, and probably have had profound effects on the vegetational makeup within the Parque Nacional Cerros de Amotape in the past 30 years. Changes in species distributions and abundance in areas with steep precipitation gradients, such as those we note for Blackish-headed Spintail and Gray-breasted Flycatcher in the Tumbes region, may be good indicators for monitoring the effects of climate change.

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Appendix.

Records of species including institution deposited, personal catalog number, observer and localities.

Species	Record type	Institution	ID #/Observer	Location
Crested Guan	specimen	CORBIDI	PMB 731	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W
Crested Guan	specimen	CORBIDI	CJS 248	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W
Crested Guan	specimen	CORBIDI	AGB 26	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Comb Duck	specimen	CORBIDI	JRS 256	Peru: dpto. Tumbes; Quebrada Fernández drainage; 4° 09' 27" S, 80° 57' 58" W
Comb Duck	specimen	LSUMZ	CJS 283	Peru: dpto. Tumbes; Quebrada Fernández drainage; 4° 10' 36" S, 80° 53' 02" W
Brown Booby	observed	no voucher	DFL	Peru: dpto. Tumbes; Zorritos; 03° 41' 20" S, 80° 41' 44" W
Andean Condor	observed	picture attached	CS, JRS, PMB	Peru: dpto. Piura; Cerro El Barco; 04° 10' 27" S, 80° 37' 12" W
Double-toothed Kite	specimen	CORBIDI	PMB 745	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Gray-lined Hawk	observed	Xeno-Canto	XC-97025, XC-97024	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Ornate Hawk Eagle	specimen	CORBIDI	CJS 272	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Rufous-necked Wood-Rail	specimen	LSUMZ	CS 167	Peru: dpto. Tumbes; ca. 29 Km NE Tumbes; 03° 26' 49" S, 80° 17' 51" W
Rufous-necked Wood-Rail	specimen	USNM	BKS 8011 CMM 4674	Peru: dpto. Tumbes; ca. 29 Km NE Tumbes; 03° 26' 49" S, 80° 17' 51" W
Rufous-necked Wood-Rail	specimen	CORBIDI	REG 126	Peru: dpto. Tumbes; Santuario Nacional Los Manglares de Tumbes; 03° 29' 00" S, 80° 18' 38" W
Rufous-necked Wood-Rail	specimen	CORBIDI	SFR 161	Peru: dpto. Tumbes; Santuario Nacional Los Manglares de Tumbes; 03° 29' 00" S, 80° 18' 38" W
Rufous-necked Wood-Rail	specimen	CORBIDI	JRS 255	Peru: dpto. Tumbes; ca. 2km S Santuario Nacional Los Manglares de Tumbes; 03° 27' 14" S, 80° 16' 31" W
Rufous-necked Wood-Rail	specimen	LSUMZ	DCS 6516	Peru: dpto. Tumbes; Santuario Nacional Los Manglares de Tumbes; 03° 29' 00" S, 80° 18' 38" W
Rufous-necked Wood-Rail	specimen	USNM	CMM 4563 DCS 6462	Peru: dpto. Tumbes; Santuario Nacional Los Manglares de Tumbes; 03° 25' 13" S, 80° 18' 30" W
Wilson's Phalarope	specimen	CORBIDI	DFL 2439	Peru: dpto. Tumbes; 3 Km SSW Zorritos; 03° 42' 13" S, 80° 42' 53" W
Red-necked Phalarope	specimen	CORBIDI	DFL 2440	Peru: dpto. Tumbes; 3 Km SSW Zorritos; 03° 42' 13" S, 80° 42' 53" W
Pallid Dove	specimen	USNM	BKS 8103	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S; 80° 10' 35" W
Pallid Dove	specimen	CORBIDI	DFL 2484	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S; 80° 10' 35" W
Pallid Dove	specimen	CORBIDI	DFL 2485	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S; 80° 10' 35" W
Pallid Dove	specimen	LSUMZ	DCS 6311	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S; 80° 10' 35" W
Pallid Dove	specimen	LSUMZ	DCS 6317	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S; 80° 10' 35" W
Pallid Dove	specimen	LSUMZ	CGS 7150	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S; 80° 10' 35" W
Mottled Owl	specimen	LSUMZ	DCS 6322	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S; 80° 10' 35" W
Mottled Owl	specimen	CORBIDI	DFL 2496	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S; 80° 10' 35" W
Buff-fronted Owl	specimen	LSUMZ	DCS 6500	Peru: dpto. Piura; Cerro El Barco; 04° 10' 27" S, 80° 37' 21" W
Buff-fronted Owl	specimen	CORBIDI	PMB 837	Peru: dpto. Piura; Cerro El Barco; 04° 10' 27" S, 80° 37' 21" W
Brown Violetear	specimen	LSUMZ	DFL 2476	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Brown Violetear	specimen	CORBIDI	DFL 2477	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Brown Violetear	specimen	CORBIDI	DCS 6299	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Green-breasted Mango	observed	no voucher	TV	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Green-breasted Mango	observed	no voucher	CS	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Rufous-tailed Hummingbird	specimen	CORBIDI	DCS 6284	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Rufous-tailed Hummingbird	specimen	CORBIDI	DCS 6309	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Rufous-tailed Hummingbird	specimen	LSUMZ	DFL 2487	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Rufous-tailed Hummingbird	specimen	LSUMZ	DCS 6337	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Andean Hummingbird	specimen	CORBIDI	DCS 6287	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
White-whiskered Puffbird	specimen	CORBIDI	DCS 6252	Peru: dpto. Tumbes; ca. Estación Biológica El Caucho; 03° 49' 43" S, 80° 15' 11" W
White-whiskered Puffbird	specimen	LSUMZ	JT 160	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W

Collared Aracari	observed	no voucher	PMB	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Olivaceous Piculet	specimen	CORBIDI	BKS 8112	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Olivaceous Piculet	specimen	USNM	BKS 8113	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Olivaceous Piculet	specimen	CORBIDI	DFL 2475	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Olivaceous Piculet	specimen	CORBIDI	DFL 2489	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Olivaceous Piculet	specimen	LSUMZ	DFL 2490	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Olivaceous Piculet	specimen	LSUMZ	DCS 6318	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Line-cheeked Spinetail	specimen	USNM	CMM 4686	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Line-cheeked Spinetail	specimen	USNM	CMM 4693	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Quebrada El Barco; 04° 09' 53" S, 80° 37' 51" W
Line-cheeked Spinetail	specimen	USNM	CMM 4674	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Encanto; 04° 08' 20" S, 80° 35' 22" W
Line-cheeked Spinetail	specimen	USNM	CMM 4685	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Line-cheeked Spinetail	specimen	CORBIDI	JRS 234	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape; Cerro Los Limos, 04° 08' 36" S, 80° 35' 11" W
Line-cheeked Spinetail	specimen	CORBIDI	GCS 7215	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Encanto; 04° 08' 20" S, 80° 35' 22" W
Line-cheeked Spinetail	specimen	CORBIDI	JRS 237	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape; Cerro Los Limos, 04° 08' 49" S, 80° 37' 51" W
Line-cheeked Spinetail	specimen	LSUMZ	DCS 6462	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Line-cheeked Spinetail	specimen	LSUMZ	JCS 317	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Line-cheeked Spinetail	specimen	LSUMZ	JCS 324	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Quebrada El Barco; 04° 09' 53" S, 80° 37' 51" W
Line-cheeked Spinetail	specimen	CORBIDI	CS 209	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Quebrada El Barco; 04° 09' 53" S, 80° 37' 51" W
Line-cheeked Spinetail	specimen	LSUMZ	PMB 831	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape; Cerro Los Limos, 04° 08' 49" S, 80° 37' 51" W
Line-cheeked Spinetail	specimen	LSUMZ	DCS 6481	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Quebrada El Barco; 04° 09' 53" S, 80° 37' 51" W
Western Slaty-Antshrike	specimen	USNM	BKS 8108	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Western Slaty-Antshrike	specimen	USNM	BKS 8109	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Western Slaty-Antshrike	specimen	LSUMZ	BKS 8110	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Western Slaty-Antshrike	specimen	USNM	BKS 8111	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Western Slaty-Antshrike	specimen	LSUMZ	DFL 2454	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W
Western Slaty-Antshrike	specimen	LSUMZ	DFL 2455	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W
Western Slaty-Antshrike	specimen	CORBIDI	CWB 115	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W
Western Slaty-Antshrike	specimen	CORBIDI	PMB 729	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W
Western Slaty-Antshrike	specimen	CORBIDI	DFL 2469	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Western Slaty-Antshrike	specimen	CORBIDI	JTCH 173	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Western Slaty-Antshrike	specimen	CORBIDI	DCS 6333	Peru: dpto. Tumbes; Figueroa, 03° 52' 30" S, 80° 10' 13" W
Western Slaty-Antshrike	specimen	CORBIDI	PMB 762	Peru: dpto. Tumbes; Figueroa, 03° 52' 30" S, 80° 10' 13" W
Western Slaty-Antshrike	specimen	LSUMZ	PMB 763	Peru: dpto. Tumbes; Figueroa, 03° 52' 30" S, 80° 10' 13" W
Yellow-bellied Elaenia	specimen	CORBIDI	JRS 174	Peru: dpto. Tumbes; Figueroa, 03° 52' 30" S, 80° 10' 13" W
Sulphur-rumped Flycatcher	specimen	LSUMZ	CLL 33	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Sulphur-rumped Flycatcher	specimen	LSUMZ	CGS 7128	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W

Sulphur-rumped Flycatcher	specimen	LSUMZ	JRS 171	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Sulphur-rumped Flycatcher	specimen	LSUMZ	BKS 8080	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Sulphur-rumped Flycatcher	specimen	CORBIDI	DCS 6316	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W
Sulphur-rumped Flycatcher	specimen	CORBIDI	JRS 139	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Sulphur-rumped Flycatcher	specimen	CORBIDI	CCL 35	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Sulphur-rumped Flycatcher	specimen	CORBIDI	DCS 6296	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Little Ground-Tyrant	specimen	CORBIDI	EHY 20	Peru: dpto. Tumbes; Desembocadura Quebrada Brunos con Angostura; 03° 45' 36" S, 80° 22' 27" W
Ochraceous Attila	specimen	LSUMZ	DCS 6289	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Ochraceous Attila	specimen	CORBIDI	DFL 2480	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Ochraceous Attila	specimen	LSUMZ	CJS 264	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Ochraceous Attila	specimen	LSUMZ	CS 182	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Ochraceous Attila	specimen	CORBIDI	PMB 760	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Ochraceous Attila	specimen	LSUMZ	CJS 267	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Peruvian Plantcutter	observed	Xeno-Canto	XC97113, XC97116, XC97116, DFL, CS, BKS	Peru: dpto. Tumbes; Palo Santo, 03° 47' 25" S, 80° 48' 15" W
Peruvian Plantcutter	observed	no voucher	C. G. Schmitt, CJS	Peru: dpto. Tumbes; Rio Bocapán drainage; 03° 43' 55" S, 80° 43' 05" W
Flame-rumped Tanager	specimen	CORBIDI	CGS 7116	Peru: dpto. Tumbes; Estación Biológica El Caucho; 03° 49' 25" S, 80° 15' 37" W
Silvery-throated Tanager	specimen	CORBIDI	BKS 8076	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Silvery-throated Tanager	specimen	LSUMZ	JCS 259	Peru: dpto. Tumbes; Campo Verde; 03° 50' 44" S, 80° 10' 35" W
Guira Tanager	specimen	CORBIDI	DCS 6360	Peru: dpto. Tumbes; Santuario Nacional Los Manglares de Tumbes; 03° 25' 13" S, 80° 18' 30" W
Bay-crowned Brush-Finch	specimen	USNM	CMM 4666	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Encanto; 04° 08' 36" S, 80° 35' 11" W
Bay-crowned Brush-Finch	specimen	USNM	CMM 4676	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Bay-crowned Brush-Finch	specimen	LSUMZ	CMM 4683	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Bay-crowned Brush-Finch	specimen	LSUMZ	DCS 6421	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Bay-crowned Brush-Finch	specimen	LSUMZ	DCS 6425	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Bay-crowned Brush-Finch	specimen	CORBIDI	PMB 823	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape; Cerro Los Limos, 04° 08' 36" S, 80° 35' 11" W
Bay-crowned Brush-Finch	specimen	CORBIDI	CS 202	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, 1.2 Km E El Platano; 04° 07' 59" S, 80° 36' 04" W
Bay-crowned Brush-Finch	specimen	CORBIDI	PMB 828	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape; Cerro Los Limos, 04° 08' 36" S, 80° 35' 11" W
Bay-crowned Brush-Finch	specimen	CORBIDI	CGS 7213	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Bay-crowned Brush-Finch	specimen	LSUMZ	JCS 313	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Bay-crowned Brush-Finch	specimen	CORBIDI	DCS 6451	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Bay-crowned Brush-Finch	specimen	CORBIDI	SFR 151	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Encanto; 04° 08' 36" S, 80° 35' 11" W
Bay-crowned Brush-Finch	specimen	CORBIDI	SFR 153	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Platano; 04° 07' 46" S, 80° 37' 13" W
Bay-crowned Brush-Finch	specimen	LSUMZ	CGS 7231	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Cerro El Barco; 04° 10' 27" S, 80° 37' 21" W

Bay-crowned Brush-Finch	specimen	LSUMZ	CGS 7232	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Cerro El Barco; 04°10' 27" S, 80° 37' 21" W
Blue Seedeater	specimen	LSUMZ	CGS 7221	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Quebrada El Barco; 04°09' 53" S, 80° 37' 51" W
Blue Seedeater	specimen	CORBIDI	DCS 6485	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, El Barco ridge; 04°10' 29" S, 80° 37' 10" W
Blue Seedeater	specimen	CORBIDI	DCS 6498	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Cerro El Barco; 04°10' 27" S, 80° 37' 21" W
Blue Seedeater	specimen	LSUMZ	DCS 6499	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Cerro El Barco; 04°10' 27" S, 80° 37' 21" W
Blue Seedeater	specimen	CORBIDI	DCS 6501	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Cerro El Barco; 04°10' 27" S, 80° 37' 21" W
Blue Seedeater	specimen	CORBIDI	TV 1046	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Cerro El Barco; 04°10' 27" S, 80° 37' 21" W
Blue Seedeater	specimen	LSUMZ	JRS 238	Peru: dpto. Tumbes; Parque Nacional Cerros de Amotape, Cerro El Barco; 04°10' 27" S, 80° 37' 21" W

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