

## Additional breeding records for selected avian species in northwest Ecuador

Alejandro Solano-Ugalde, Agustina Arcos-Torres<sup>A</sup> & Harold F. Greeney<sup>B</sup>

<sup>A</sup> Fundación Imaymana, Lincoln 199 y San Ignacio, Quito, Ecuador. E-mail: [jhalezion@gmail.com](mailto:jhalezion@gmail.com)

<sup>B</sup> Yanayacu Biological Station and Center for Creative Studies c/o Foch 721 y Amazonas, Quito, Ecuador.

E-mail: [revmmoss@yahoo.com](mailto:revmmoss@yahoo.com)

### Abstract

Although there is general good knowledge regarding the avifauna of Ecuador, information regarding natural history traits has been published only for a few species. In this manuscript we provide observations on the breeding biology of 74 avian species in northwest Ecuador. The bulk of the information was collected in two private reserves within the Ecuadorian Chocó, from February to July 2006.

**Keywords:** Birds, Chocó, Ecuador, nesting records, northwest.

### Resumen

Aunque existe buen conocimiento general sobre la avifauna de Ecuador, información referente a distintos aspectos de historia natural ha sido generada solo para unas pocas especies. En este manuscrito proveemos información referente a la biología reproductiva de 74 especies de aves del noroccidente de Ecuador. La mayoría de la información fue recolectada en dos reservas privadas dentro del Chocó ecuatoriano, desde Febrero hasta Julio del 2006.

**Palabras clave:** Aves, Chocó, Ecuador, registros reproductivos.

Since the publication of the book “The birds of Ecuador” (Ridgely & Greenfield 2001), a new door has opened for the development of ornithology in mainland Ecuador and during subsequent years the number of scientific publications in the country has increased (Freile et al. 2006). Despite the significant contributions of many authors, however, an immense gap still remains in our knowledge of the natural history for most of Ecuador’s avifauna. Several authors have recently contributed to our understanding of the breeding biology for a few species from northwestern Ecuador (e.g. Greeney et al. 1998, Freile & Renjifo 2003, Karubian et al. 2003, Athanas & Davis 2004, Greeney et al. 2004, Greeney 2005, Greeney & Gelis 2006). Among the most recent, Greeney & Nunnery (2006) documented reproductive activity for 72 species in this region of Ecuador.

In this manuscript we present new data for a number of bird species for which no previous documentation was available in northwest Ecuador and give supplemental data on species for which Greeney & Nunnery (2006) previously provided information. The majority of our observations were collected from February to July 2006, while performing bird

monitoring at two different reserves in NW Ecuador. 1. Reserva Intillacta (RI), located between Tandayapa and Mindo valleys, is 100 ha. property, of which 75% is represented by cloud forest and the rest covered by shaded pastures in different stages of regeneration. Most of the reserve is 1800 m.a.s.l. (00°03`N, 78°42`W). 2. Reserva Mangaloma (RM) is 12 Km. SW of Los Bancos, and includes a solid tract of foothill evergreen forest (200 ha), adjacent to 400 ha more of forest, elevation goes from 600 to 900 m.a.s.l (00°06`N, 78°59`W). Additional observations were made in and around the towns of Mindo (MI), Tandayapa (TA), Nanegalito (NA), Tinalandia (TI), and Los Bancos (LB) (all in Pichincha Province) as well as the areas around Quinde (QU) (Esmeraldas). We present our results in taxonomic order following Ridgely & Greenfield (2001). For species for which we were able to locate nests, we provide more detailed information and for those for which we observed only indirect evidence of breeding, we present information in a condensed form using the following abbreviations: (AN) active nest of unknown stage, (B) building, (C) copulating, (CF) carrying food, (CM) carrying nesting material, (D) dependent fledglings, (F) food offering, (I) incubating, and (J) juvenal plumage.

## Species accounts

**Rufous-tailed Hummingbird** (*Amazilia tzacatl*). We found the first nest on 15 September 2004 (MI), saddled over the narrow branch of a small shrub in a garden on the edge of town. The nest was 2.1 m above the ground and contained two well feathered nestlings. On 17 June 2006 (RI), we found a recently completed nest on roadside vegetation. The nest was situated 3 m above the ground on distal portion of the lower branches of a *Bacharis* sp. shrub (Asteraceae). We found a third nest on the same day in an area of shaded pasture in the process of regeneration. Containing two all white eggs (14 x 8 mm and 14 x 7 mm), the nest was situated at the leaf base of a terminal lower branch of a *Erythrina* sp tree (Fabaceae), roughly 2.5 m above the ground (Fig. 1a) All nests were small cups constructed of plant fibers and soft down, tightly bound with spiderweb, and externally decorated with lichens.

**Purple-throated Woodstar** (*Calliphlox mitchelli*). We observed a single female plumage bird on June 3 2006 (RI) collecting pieces of lichen from the trunk of a wax palm *Ceroxylum alpinum* (Arecaceae), which proved to be used to adorn the outside of a minute nest. The nest rested on a horizontal dry branch of an apparently dead *Inga* sp (Fabaceae) mossy tree, in a shaded pasture near the forest edge. Situated 15 m above the ground, the nest was located on the periphery of the tree with little overhead cover. By 10 June, the female was observed foraging at *Inga* sp flowers as well as capturing insects and, soon after, feeding two young while perching on the rim of the cup. On 14 July a female was observed feeding a juvenile bird outside the nest, ca. 30 meters from original nesting location. The juvenile investigated epiphytic orchid flowers on short, unstable flights. We found a second nest on 12 June 2006 (RI), this one placed 18 m high, on top a dead branch of an introduced *Araucaria* sp (Araucariaceae) tree in open pasture land. Two chicks hatched on 15 June and they left the nest after ca. two and a half weeks.

**Western white-tailed Trogon** (*Trogon chionurus*). On 13 December 2004 (QU) we found a nest with at least one nestling and observed adults bringing food to the nest entrance. Subsequently, we flushed a female plumaged bird from a termite nest on the afternoon of 11 May 2006 (RM), and later confirmed it was indeed

a nest. The termite nest was attached to an unidentified understory palm, 2 m above the ground, and contained two all white eggs (Fig. 1b: 29 mm x 24 mm, 31 mm x 24 mm). On 1 June, two recently hatched chicks (32 and 29 g) occupied the nest, they were completely naked, had no down, and their eyes were closed. Two weeks later the chicks were weighed (60 and 62 g). At this time they had maroon / brownish irides, blue gray pupils, pale colored bills, small whitish gapes, dull grayish chests, yellowish bellies, and black backs with white markings on their flight feathers, which had broken their sheaths more than 2/3 of the way. About a week and a half later we found the nest empty.

**Slaty Spinetail** (*Synallaxis brachyuran*). On 7 April 2006 (RM), we observed an individual carrying nesting material to large globular nest, 1.5 m above the ground in a living fence row. The nest was composed of dry twigs and branches, with a lateral tunnel entrance. During observations on 8 April, a bird was observed bringing food items into the nest. We found two other nests, located in very similar situations around the gardens surrounding the headquarters, both active in 15 April and 7 May. We noted juveniles following adults and begging in late May and at the beginning of June.

**Plain-brown Woodcreeper** (*Dendrocincla fuliginosa*). On 14 December 2003 (MI) we observed an adult carrying food in its bill to at least one nestling in a natural tree hole. On 7 April 2006 (RM) we found an artificial nest box occupied by this species. The nest box was located 12 m above the ground at forest border nearby riparian habitat. In the afternoon of 8 April, it contained two white eggs with a soft greenish cast (23 mm x 20 mm and 25 mm x 18 mm), placed on top a lining of dead grass blades and whitish-green lichens towards the center. On 25 April both eggs had hatched and we weighed both of them (Fig. 1c: 21.5 and 23 g), estimating they were 2-3 days old. The nestlings were covered in dark grey down, had their eyes closed, the tip of their bills dusky with the base and gape bright yellow. The two chicks were almost ready to fledge on May 11 when they were last weighted (41 and 42.5 g), with fully-grown primaries, secondaries and coverts, while the tail feathers were only about one third emerged from their sheaths. Their iridia were a blue grey tone, and very different from the brown color usually seen in adults. Both chicks fledged and followed the adult the next day, staying

together while the parent fed them in the nearby branches of a riparian area.

**Wedge-billed Woodcreeper** (*Glyphorhynchus spirurus*). On 9 April 2006 (RM), we flushed adult bird from a decaying wooden fence post bordering old second growth forest. From a concealed location we observed the adult returning to the post and entering a cavity through a narrow crack which opened into a narrow chamber containing two all white eggs. The post was 1.5 m tall and the cavity was approximately 30 cm deep. The eggs rested on a pad of dark materials and fine rootlets. By 24 April both chicks had hatched, and we could see they were covered with soft down and had bright yellow gapes. On 2 May we could hear the chicks calling from inside the nest and three days later the nest was empty.

**Montane Woodcreeper** (*Lepidocolaptes lachrymiger*). We found a nest in a dead *Cecropia* sp. (Cecropiaceae) tree on 17 June 2006 (RI), when we observed an adult bird creeping upwards in a vertical branch and then flying into a cavity 4 m above the ground. The cavity appeared to have been created by an old fallen branch and was barely of sufficient diameter to allow access by the bird. The adult delivered food to the nest, constantly returning to forage in regenerating shaded pastures with nearby forest. The following day we heard chicks calling from inside the nest, and a week later we observed the family group exiting the cavity. At the same locality, we found a second nest on 18 June 2006, this time in a small, unidentified Bignoniaceae tree, forming part of a living fence in moderately sloping pasture. At 3.5 m above the ground, the cavity was accessible through a natural side opening, and contained two chicks (5.5 and 7.1 g), roughly 3-4 days old. On 3 July, the chicks were almost fully-grown and ready to fledge (40 and 37 g), at this stage each chick hosted 2 to 3 botfly larvae in different parts of body. We are uncertain if this effected the chicks' survival, but they were not in the nest 5 days later.

**Streak-headed Woodcreeper** (*Lepidocolaptes souleyetii*). We found an occupied artificial nest box (unpubl data) on 25 April 2006 (RM). The nest box was located in an isolated unidentified Bombacaceae tree, hanging 7 m above the ground in regenerating pasture with nearby forest. Two all white eggs (26 mm x 17 mm and 25 mm x 18 mm) were found resting in a pad composed primarily of brown tree bark flakes of

different tones. On 11 may, both eggs had hatched and the two chicks (33 and 29g) had dusky yellowish bills, with fairly large bright yellow/fleshy gapes. Their bodies still showed remains of down and their flight feathers were about one third broken their sheaths. Twelve days later we found the nest box empty.

**Pacific Antwren** (*Myrmotherula pacifica*). On 20 April 2006 (RM), we found a nest located 1.5 m up amid branches of a cinnamon shrub *Cinnamomum ceylanicum* (Lauraceae) in the vicinity of the reserve headquarters. The small, finely woven cup was attached at a horizontal fork, and contained two well grown chicks (Fig. 1d). We observed both parents attending the nestlings and two days later the family group was foraging in the vicinity. We found a second nest 2.5 m above the ground on a *Psidium guajaba* (Myrtaceae) shrub near the volunteer house on 29 may. On 6 June, while the chicks were weighed (9.5 and 8.7 g), both parents appeared highly stressed, and constantly emitted high pitched alarm calls. at this time the chicks were completely feathered and had two whitish-buff wingbars on dark-buff edged flight feathers, olive greenish backs, heads and throats mottled white, and the rest of their underparts immaculate white. Their bills were dusky with yellow bordering lines and still partly fleshy and bright yellow gapes. Both sexes provisioned the young, and on a couple of occasions during light showers, a male plumaged bird brooded the chicks.

**Southern beardless Tyrannulet** (*Camptostoma obsoletum*). We found a small globular nest with a side entrance at tip branches of a lemon tree *Citrus* sp (Rutaceae) on 20 April 2006 (RM). the nest was placed 3 m from the ground and was externally composed of pieces of dry grass stems, green moss, and loosely adorned with lichens all interlaced with spiderweb and a few dead leaves (Fig. 1e). The interior was abundantly lined with seed down, and a single white egg (17 mm x 12 mm) with minute reddish brown prickles rested inside. Twelve days later we observed an adult bird carrying food to the nest, and later inspection confirmed the presence of a single chick weighing 7.5 g. at this last check a small active nest of wasps, 25 cm from the nest, fiercely attacked the observers. No further information was gathered.

**Black-headed Tody-flycatcher** (*Todirostrum nigriceps*). We found a nest of this species under construction on 17 august 2004 (QU). At the time of



Fig. 1. Nests, eggs and chicks of birds in northwest Ecuador; a. Rufous-tailed Hummingbird, b. Western white-tailed Trogon, c. Plain-brown Woodcreeper, d. Pacific Antwren, e. Southern beardless Tyrannulet, f. Rusty-margined Flycatcher, g. Gray-breasted Wood-Wren, h. Variable Seedeater. (Photos: A. Solano-U. 2006).

discovery, the nest consisted of nothing more than strands of moss draped over the end of a thin branch, 2.5 m above the ground, inside fairly intact forest. The nest was video taped for 1.6 hours from 10:20 h to 12:00 h. During this time we observed two adults visit the nest a total of 53 times. On 34 of these visits the adults brought with them either a small piece of moss, spiderweb, or both. Upon arriving at the nest with material, the adults landed on top, at the point where the moss was draped across the branch, then leaned forward and fell as they draped the new material over the old. On several occasions they immediately flew under the hanging moss and back up the other side, repeating the process and seemingly wrapping material completely around the branch. As they fell forward, the adults often thrust their bill rapidly in and out of the nest material in a sewing machine-like fashion, a maneuver previously termed “rapid probing” by Greeney (2004).

In this case we believe they were “weaving” or intertwining material with this movement. On the 19 occasions when adults did not bring material, they either flew up to perch momentarily on the attachment point, or hovered briefly beside the nest. In both cases they often pecked sharply at the hanging material, but did little in the way of arranging. Other than three times (15, 281 and 11 s) when adults simply sat at the attachment point and peered around, visits to the nest were very brief (mean±sd = 1.9±1.1 sec).

**Common Tody-Flycatcher** (*Todirostrum cinereum*). On 9 March 2006 (RM), 1.5 m above the ground, we found an elongated, semi-globular, pendant nest hanging from a low branch of a lemon tree *Citrus* sp (Rutaceae). Two chicks were inside but they couldn't be reached through the slender tubular entrance to examine them properly. The nest was composed of dry grass stems, plant fibers, and dry leaves, all bound with fungal rhizomorphs (*Marasmius* sp) and spiderwebs with a few small brownish feathers. We found a second nest, made of similar materials, on 5 April 2006, at the forest border 1 m up in a *Bacharis* sp (Asteraceae) shrub. It contained two white eggs. A week later both nests were apparently depredated, as they were found ripped apart.

**Rusty-margined Flycatcher** (*Myiozetetes cayennensis*). On 16 August 2004 (QU) we discovered a nest which contained a still-wet just hatched nestling (tarsus = 6.6 mm) and an undeveloped egg. The egg

(23.0 x 16.3 mm) was white with cinnamon and lavender flecking and blotching, heaviest at the larger end (fig. 1f). The nestling had bright orange-pink skin with sparse down on the dorsum and flanks, with down on the head being pale grey and on the body more blonde. The gape was yellow and the mouth lining bright yellow-orange. The nest was 2.6 m up in an isolated *Cassia* sp (Caesalpinaceae) tree, near the end of a branch. Subsequently, we found three active nests (RM) (April 6, 7 and 26, 2006) in separate lemon trees *Citrus* sp (Rutaceae) in the gardens, about 1.5 or 2 m above ground. All nests were in close proximity to wasp nest, and only the one with the smallest of the intimidating wasp nests was inspected (April 6). The nest was principally composed of dry grass and weeds stems, and contained two white eggs (26 mm x 15 mm and 24 mm x 15 mm), one of them more heavily blotched with brown towards the wider end and the other with a band of pale cinnamon speckles towards the middle of the egg. In mid-May, around this area, we observed juvenile birds with well-defined yellow gapes and abundant down on the undertail coverts.

**Tropical Kingbird** (*Tyrannus melancholicus*). We observed a single bird repeatedly bringing dry twigs to a shallow and loosely attached cup on 1 June 2006 (RM). The cup rested on the outer branches of a *Psidium guajaba* (Myrtaceae) tree ca. 8 m up, and was alongside a dirt road surrounded by pasture. Subsequent observations suggested the nest was inactive, even a couple weeks later. On 18 June 2006 (RI), we observed recently fledged birds. They had a duller overall plumage, buffy wingbars, cinnamon edging on the flight feathers and their gapes were still visible.

**Cinnamon Becard** (*Pachyramphus cinnamomeus*). On 7 April 2006 (RM), we found an active nest 1.5 m close to a massive wasp nest, resting on distal branches of a thorny Bombacaceae tree at the forest edge. The bulky globular shape nest with a downward facing tunnel entrance was ca. 5 m above the ground and was principally composed of long brown fibers, green moss, and dry leaves. Five weeks later (May 12), we found another nest, still under construction, 8 m above ground in *Carapa* sp (Meliaceae) plantation. It resembled the previous found nest and it was also built near (1 m) a wasp nest.

**Black-crowned Tityra** (*Tityra inquisitor*). We observed an adult male inspecting potential nesting cavity on 5 May 2006 (RM). The entrance was 4.5 m



above the ground in a slender dead tree, situated amidst pastureland along a roadside. A week later, both male and female repeatedly entered the cavity with vegetative fibers. By the end of the first week of June, both adults were feeding young, and close to two weeks later they were absent from the area.

**Golden-winged Manakin** (*Masius chrysopterus*). Above mi, at around 1600 m, on 28 January 2003, we found a nest of this species when an adult female flushed off of two eggs. The nest was 1.6 m above the ground hanging in a horizontal fork of a *Hedyosmun* sp (Chloranthaceae) shrub. The sparse, dark fiber cup was sparsely decorated with moss which trailed 6.5 cm below the nest, with some thin strands hanging as far as 10.5 cm below. The nest measured 7 cm wide by 3.5 cm tall outside, and 5.5 cm wide by 2.5 cm deep inside. The nest was along a well used trail, but well shaded by leaves of *Hedyosmun*, *tibouchina* sp (Melastomataceae), and *Weinmannia* sp (Cunoniaceae). The two eggs were pale salmon, with red-brown blotching, thickest around the larger end. They measured 21.4 x 14.1 mm and 20.5 x 14.2 mm, respectively. While similar in size to eggs of this species from eastern Ecuador, these eggs were much more reddish overall, both in background color and maculation (Greeney & Gelis in press). The nest of this species was superficially described from Colombia (Hilty & Brown 1986), but Greeney & Gelis (in review) provide the first detailed description, which closely matches the nest described here.

**Blue-and-white Swallow** (*Nothiochelidon cyanoleuca*). Amid a low foraging flock, on 4 June 2006 (RI), we observed two individuals picking up dry grassy stems from the ground and interacting with soft calls while flying around. On 13 July 2006, at the same locality, we found a nest in the ceiling of a rustic ranch of organic disposals, which contained three all white eggs (17 mm x 13mm, 17 mm x 12 mm and 16 mm x 13 mm). The nest was a cup constructed with dry weedy stems and entirely lined with down feathers, which rested on top of the main roof support at 2.5 m above the ground. A week later two eggs were missing, and the nest was subsequently abandoned.

**Gray-breasted Wood Wren** (*Henicorhina leucophrys*). On 15 June 2006 (RI), we found a nest on steep forested creek bank containing a single recently hatched chick (Fig. 1g; 5.5 g). The nest was supported by the subterminal branches of a *Psychotria* sp

(Rubiaceae) shrub, close to a meter above the ground. The small, sub-globular structure, with downward tubular entrance, was made of dark fibers and rootlets, with thick green moss layer covering the top of the nest. By June 25, the chick weighed 16 g, its flight feathers were 1/3 broken their sheaths, and its bill was diffuse dusky-yellow and had a yellowish gape. We noted an indistinct adult facial pattern, and it had brownish, fully grown contour feathers with a grayish wash on the breast. Its outer iris was brown with a grayish cast on the pupil.

**Three-striped Warbler** (*Basileuterus tristriatus*). On 23 April 2006 (RI), a single chick jumped out of a nest on a forested creek bank. We secured the chick and returned it to the nest. The nest was 1.5 m up, and less than a meter from the water. Both parents impatiently emitted loud alarm calls while the chick was returned to the nest. The chick was uniform dull olive with a more yellowish wash to the crissum, showed a conspicuous yellow gape, an indistinct head pattern, and buffy cinnamon wingbars. The nest was a globular ball fixed into a niche on the bank, had a side entrance, and was externally composed mainly of dry vegetative matter with an inner lining of softer materials.

**Orange-bellied Euphonia** (*Euphonia xanthogaster*). On 25 September 2003, at (TI), we flushed an adult female from a nest containing three eggs. The globular ball nest was 2 m above the ground, built into a hanging clump of moss and epiphytes. Outside dimensions were 12 cm tall by 12 cm wide, by 12 cm front-to-back. The centrally-located side entrance had a 4 cm overhanging hood and measured 3.5 cm wide by 3 cm tall. Inside, the egg cup was 3 cm deep by 5.5 cm wide. The inner chamber was 7 cm tall overall. The three eggs were white with dark red flecking, concentrated at the larger end. They measured 18.7 x 12.8 mm, 18.9 x 13.1 mm, and 18.6 x 13.0 mm, respectively.

**Golden Tanager** (*Tangara arthus*). On 18 June 2006 (RI), we observed a recently fledged young perched next to a bulky cup nest ca. 15 m from the ground in an *Araucaria* sp (Araucariaceae) tree at the forest edge. The chick moved little during c.a. 5 minutes of observation, during which an adult fed it 12 times, occasionally pushing the young so as to obligate it to hop or fly between branches. The chick was dark orange with a stub tail, fat gape, and with abundant down still showing over its juvenile plumage. At the

same locality, on 20 June, we saw two adults bringing nesting material (dark mosses) to a cypress tree in an open area of pastures. The nest, however, was never located. On 13 July, also at (RI), we noted two juveniles joining a mixed-species flock along a living fence bordering a pasture. One of them constantly begged when an adult was near. Both chicks showed an indistinct adult facial pattern and were otherwise dull, dark orange.

**Blue-gray Tanager** (*Thraupis episcopus*). We found a cup nest containing two eggs on 20 April 2006 (RM). The cup rested 2 m above the ground at the junction of tree vertical branches of a *Brunfelsia* sp (Solanaceae) shrub in a living fence around the headquarters building. The cup was composed of mainly plant fibers bound with spiderweb and dry pieces of leaves, with abundant moss externally and lined internally with dry grass blades. The eggs were dull blue-grey and heavily blotched with brown. One was less uniformly marked and with larger spots. We found this egg missing from nest a week later (cowbird egg rejection?). The single chick hatched the first week of May, at which time it was covered in dark down and showed a whitish gape with white borders. A week and a half later, on 11 May, its flight feathers were starting to break sheaths, its bill had turned darker and it was covered with pale grayish contour feathers with a hint of blue. On 23 May the chick was not in nest but we observed it hopping and performing short flights behind a parent.

**Variable Seedeater** (*Sporophila corvine*). We encountered a nest containing a single egg on 25 April 2006 (RM), at which time an adult male offered a dry weedy stem to a female near the nest. The nest was placed 2.5 m above the ground in a *Brunfelsia* sp (Solanaceae) shrub. It was a thin, loosely woven cup of pale curly rootlets (Fig. 1h). The egg was pale bluish grey blotched brown at the middle with the markings turning almost charcoal black towards the wider end. By the end of the week, both nest and egg had disappeared. On 27 May, at the same locality, we found a second nest in a similar location, containing two eggs of similar coloration. By 1 June, one of the eggs had hatched, and a week later a single 9 g chick remained with no sign of the other egg. A week and a half later the nest was empty.

**Yellow-bellied Seedeater** (*Sporophila nigricollis*). During the last week of April (RI), we found a pair of adult birds carrying weedy dry stems to a *Brunfelsia* sp

(Solanaceae) shrub in the gardens. Subsequently, on 2 May, we discovered a flimsy nest containing three eggs (19.1 x 11 mm, 19 x 11.1 mm, 18 x 10.9 mm). The eggs were pale greenish, spotted brown. The nest was abandoned, the eggs were noted rotting and covered with insect larvae.

Additionally we recorded the following breeding information: **Wattled Guan** *Aburria aburri*, 18 December 2004 MI (F): **Pacific Parrotlet** *Forpus coelestis*, 6 April 2006 RM (C): **Violet-tailed Sylph** *Aglaicercus coelestis*, 14 September 2005 MI (B, female building 2.8 m up): **Toucan Barbet** *Semnornis ramphastinus*, 5 August 2006 NA (AN, 6 m up, same dead tree as following record): **Plate-billed Mountain-Toucan** *Andigena laminirostris*, 5 August 2006 NA (AN, 20 m up): **Red-faced Spinetail** *Cranioleuca erythropis*, 1 June 2006 RI (D, one nestling); 14 July 2006 RI (D, one fledgling): **Tawny throated Leaf-tosser** *Sclerurus mexicanus*, 29 June 2006 RI (D, one fledgling): **Spot-crowned Antvireo** *Dysithamnus puncticeps*, 16 August 2004 QU (CM, male carrying mossy fiber): **Dotted winged Antwren** *Microrhopias quixensis*, 1 June 2006 RM (D, one fledgling): **Chestnut-backed Antbird** *Myrmeciza exsul*, 9 March 2006 RM (D, one fledgling): **Ochre-breasted Antpitta** *Grallaricula flavirostris*, 30 July 2004 TA (F): **Yellow Tyrannulet** *Capsiempis flaveola*, 11 May 2006 RM (3J): **Black Phoebe** *Sayornis nigricans*, 5 August 2006 TA (I, 3 eggs, 2.7 m up under eaves of house); same date and locality (B): **Dusky-capped Flycatcher** *Myiarchus tuberculifer*, 16 August 2004 QU (F): **Golden crowned Flycatcher** *Myiodynastes chrysocephalus*, 10 June 2006 RI (D, 2 fledgling): **Masked Tityra** *Tityra semifasciata*, 14 December 2003 MI (AN): **Andean Cock-of-the-Rock** *Rupicola peruviana*, 4 August 2006 TA (D, 2 ready-to-fledge nestlings); 4 August 2006 TA (D, 2 nestlings): **Thrush like Schifornis** *Schifornis turdinus*, 12 May 2006 RM (CM): **Brown-capped Vireo** *Vireo leucophrys* 12 September 2005 MI (F): **Slaty-backed Nighthale Thrush** *Catharus fuscater*, 17 March 2006 RI (CM): **Ecuadorian Thrush** *Turdus maculirostris*, 3 June 2006 RI (1J); **White thighed Swallow** *Notiochelidon flavipes*, 11 June 2006 RM (D, three fledgling): **Chocó Warbler** *Basileuterus chlorophrys*, 12 May 2006 RM (D, two fledgling): **Olive-crowned Yellowthroat** *Geothlypis semiflava*, 1 June 2006 RM (D, two fledgling): **Tropical Parula** *Parula pitiayumi*, 6 June 2006 RI (D, one fledgling); 12 July 2006 RI (D, three

fledgling); **Scarlet-breasted Dacnis** *Dacnis berlepschi*, 15 August 2004 QU (F); **White-sided Flowerpiercer** *Diglossa albilatera*, 11 December 2003 above TA (F); **Fawn breasted Tanager** *Pipraeidea melanonota*, 14 July 2006 RI (1J); **Metallic green Tanager** *Tangara labradorides*, 12 July 2006 RI (D, one fledgling); **Golden-naped Tanager** *Tangara ruficervix*, 13 September 2003 above MI (F, adults with two fledglings); **Blue-and-black Tanager** *Tangara vassorii*, 14 September 2005, 2200 m, above TA (F); **Blue-necked Tanager** *Tangara cyanicollis*, 4 December 2004 NA (AN); **Blue-winged Mountain Tanager** *Anisognathus somptuosus*, 23 April 2006 RI (D, one fledgling); **Palm Tanager** *Thraupis palmarum*, 7 April 2006 RM (2J); **Blue-capped Tanager** *Thraupis cyanocephala*, 11 December 2003 TA (F); **Lemon-rumped Tanager** *Ramphocelus icteronotus*, 25 September 2003 TI (F); 15 September 2004 MI (AN, one nestling, nest 1.6 m up); same date MI (D, female feeding young fruit from feeder); 18 June 2006 RI (CF); **Scarlet-browed Tanager** *Heterospingus xanthopygius*, 16 August 2004 QU (CM, to mossy branch 10 m up); **Dusky Bush-Tanager** *Chlorospingus semifuscus*, 18 December 2004 MI (AN); 13 September 2005 MI (F); **Yellow-throated Bush-Tanager** *Chlorospingus flavigularis*, 14 December 2003 MI (F); **Black-winged Saltator** *Saltator atripennis*, 17 June 2006 RI (CF); **Tricolored Brush Finch** *Atlappetes tricolor*, 12 July 2006 RI (D, one fledgling); **White-winged Brush-Finch** *Atlappetes leucopterus*, 20 January 2002 TA (C):

### Literature Cited

- Athanas, N. & J. Davis. 2004. Breeding biology of the White-faced Nunbird *Hapaloptila castanea* in Ecuador. *Cotinga* 22: 42–45.
- Freile, J. F., Carrión, J. M., Albuja-Prieto, F. & F. Ortiz-Crespo. 2006. La Ornitología en Ecuador: Un análisis del estado actual del conocimiento y sugerencias para prioridades de Investigación. *Orn. Neotrop.* 17: 183-202.
- Freile, J. F. & L. M. Renjifo. 2003. First nesting records of the Moustached Antpitta (*Grallaria alleni*). *Wilson Bull.* 115: 11–15.
- Greeney, H. F., Lysinger, M., Walla, T. R. & J. Clark. 1998. First description of the nest and egg of the Tanager Finch (*Oreothraupis arremenops*) with additional notes on behavior. *Orn. Neotrop.* 9: 205–207.
- Greeney, H.F., Port, J. & F. Werner. 2004. First description of the nest of the Barred Puffbird (*Nystalus radiatus*). *Orn. Neotrop.* 15: 285-288.
- Greeney, H. F. 2005. The nest, eggs and incubation behaviour of Sickie-winged Guan *Chamaepetes goudotii fagani* in western Ecuador. *Bull. Brit. Orn. Cl.* 125: 113–116.

**Olive Finch** *Lysurus castaneiceps*, 22 August 2003 MI (B); 18 January 2004 MI (F); **Orange-billed Sparrow** *Arremon aurantirostris*, 24 April 2006 RM (1J); **Blue-black Grassquit** *Volatinia jacarina*, 17 June 2006 RI (CF); **Yellow-faced Grassquit** *Tiaris olivacea* 19 December 2004 NA (F); **Rufous collared Sparrow** *Zonotichia capensis*, 17 June 2006 RI (4J); **Shiny Cowbird** *Molothrus bonarienses*, 5 May 2006 RI (D fed by Olive crowned Yellowthroat *Geothlypis semiflava*); **Scrub Blackbird** *Dives warszewiczi*, 25 September 2003 TI (CM).

### Acknowledgments

We would like to thank Leopoldo Arcos and Margarita Torres for all their support while working in Reserva Inti Llacta. Reinhard Krusche and Maria Guerrero were fundamental to our work in Reserva Mangaloma. We thank all individuals in Fundación Imaymana who helped us in one way or another, and especially to Pachamama for opening our eyes to understanding. We thank Mitch Lysinger, Rudy Gelis, Murray Cooper, Juan Carlos Calvachi, and Ian Cambell for contributing unpublished observations. We are also very grateful to N. Krabbe for corrections and improvements to the manuscript as well as to the additional anonymous reviewers. The work of HFG is supported by John V. and the late Ruth Ann Moore, the Hertzberg Family Foundation, Matt Kaplan, and Field Guides.



Greeney, H.F. & T. Nunnery. 2006. Notes on the breeding of northwestern Ecuadorian birds. *Bull. Brit. Orn. Cl.* 126: 38–45.

Karubian, J., Castañeda, G., Freile, J. F., Salazar, R. T., Santander, T. & T. B. Smith. 2003. Nesting biology of a female Long-wattled Umbrellabird *Cephalopterus penduliger* in north-western Ecuador. *Bird Conserv. Intern.* 13: 351–360.

Ridgely, R. S. & P. J. Greenfield. 2001. *The birds of Ecuador*, vol. 1. Cornell Univ. Press, Ithaca, NY.