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## Pale-headed Brush-finch *Atlapetes pallidiceps* is not extinct

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El Matorralero Cabecipáldo *Atlapetes pallidiceps* es un ave endémica del drenaje de Río Jubones, en el sur de Ecuador. A pesar de reiteradas investigaciones realizadas por observadores calificados no fue registrado desde 1969, y se consideró como especie posiblemente extinta. Durante una búsqueda en Noviembre de 1998, los autores localizaron una pequeña población de 5–15 parejas en el Valle de Yunguilla, Provincia del Azuay. La zona afronta la destrucción extendida de hábitats naturales y es probable que no existan otras poblaciones viables. La Fundación Jocotoco, organización ecuatoriana creada para la conservación de hábitats con aves amenazadas, pretende comprar el sitio para proteger a la especie.

Pale-headed Brush-finch *Atlapetes pallidiceps* is endemic to the Río Jubones drainage in southern Ecuador, where it was last recorded in 1969. Its habitat preferences were unknown<sup>2</sup>. Because several recent attempts by skilled observers to locate it had failed, the species was considered possibly extinct by Collar *et al.*<sup>1</sup>, who summarised all available information on the species.

On a CECIA (Ecuador's ornithological society) expedition in search of the species on 10–24 November 1998, the authors rediscovered a tiny population at 1,650–1,800 m elevation in the Yunguilla Valley in Azuay.

Four pairs were found, and the present extent of habitat might allow for another five pairs to occur in the same area. During a second visit to the area, on 3–4 December by NK and Francisco Sornoza, one pair was found at a hacienda 1 km away, where the extent of the habitat might allow a maximum of five pairs to occur. The intervening area probably holds 1–2 pairs. The arid scrub in which the species was located primarily differed from several other such areas where the species was not found during this and earlier searches, by being ungrazed by cattle and goats. The widespread habitat degradation throughout the Río Jubones drainage, as well as the many unsuccessful searches for the brush-finch, renders it probable that the rediscovery site holds the only surviving population.

The species was studied over a five-day period. One individual was mist-netted and photographed, and measurements and a blood sample were taken before the bird's release.

Most observations of the brush-finch were of pairs. In total, five pairs and two single birds were observed. Two birds differed from the rest in having almost entirely dark brow and cheeks, and by being solitary, although one of them was twice seen with a pair. These birds are presumed to have been immatures. One of them was possibly seen with the same pair ten days later on 4 December, but by then had acquired considerably paler brow and cheeks.

Members of pairs usually foraged 1–20 m apart, keeping in contact with a distinctive, very high-pitched (7–12 KHz) note. Every 5–20 minutes they would meet and spend a few minutes within sight of each other, sometimes giving the bursts of rapid notes typical of excited pairs in all *Atlapetes*. This vocalisation differed from the homologous vocalisation of *Atlapetes rufinucha*, by the male part being higher pitched and lacking loud pure whistles, and by the trills being lower paced, some apparently given by both sexes simultaneously with exceptionally accurate synchronisation. The trills of *pallidiceps* were also weaker than those of *rufinucha*, and of *Diglossa*-like quality. Another call, shorter and slightly lower pitched than the contact note and relatively similar to calls given by *Thlypopsis ornata* and *Buarremon torquatus* (both usually present), was uttered quite frequently when the birds joined with mixed-species flocks. No song was heard, and song activity of other species was generally low on 10–24 November, and even lower on 3–4 December. Even during a few days with frequent rains (14–16 December), when song activity of some species increased, no song of *Atlapetes pallidiceps* was heard.

The birds were always first seen in the arid scrub at dawn, when they perch-gleaned insects from twigs in the upper branches of leafless bushes. With the first sun, they descended the slope to feed on the plentiful fruits of various plants, in an irrigated cattle field with *Rubus* and *Ricinus* thickets, where they fed alongside other emberizids (*Thlypopsis ornata*, *Thraupis bonariensis*, *Thraupis episcopus*, *Thraupis cyanocephala*, *Buarremon torquatus* and *Zonotrichia capensis*), sometimes venturing a few metres out onto open ground where they appeared to feed on seeds of an unidentified species of *Polygonum* (Polygonaceae). During the hottest period of the day *pallidiceps* was found in dense shady thickets along ravines, where it was observed foraging quietly on the ground.

Response to playback of the “cascade” vocalisations was weak. It was elicited twice in the arid scrub, which presumably is where the birds maintain territories during breeding, and could not be provoked in the humid ravines and irrigated farmland. On 2–3 occasions the song of *Buarremon torquatus* appeared to be elicited by the passing of a pair of *Atlapetes pallidiceps*. During one observation of a mixed-species flock at an ant swarm (the flock consisting of *Veniliornis fumigatus*, *Grallaria ruficapilla*, *Myiophobus fasciatus*, *Catharus fusater*, *Myioborus miniatus*, *Basileuterus coronatus*, *Basileuterus nigrocristatus*, *Thlypopsis ornata*, *Atlapetes pallidiceps* and *Buarremon torquatus*), the pair of *Atlapetes pallidiceps* were once displaced from the ground by a *Buarremon torquatus*. In slightly more humid habitats, the only *Atlapetes* found was *rufinucha* (alongside *Buarremon torquatus*). It seems possible that both these species compete with *pallidiceps*.

Interestingly, *Atlapetes leucopterus*, a species present in the valleys immediately to the north (nominate subspecies) and south (*A. l. dresseri*), is absent in the Río Jubones drainage<sup>2,3</sup>. A third possible competitor is *Zonotrichia capensis*, which was abundant in any habitat above 1,500 m with cattle, but which barely penetrated the dense arid scrub where *pallidiceps* was found.

*Atlapetes pallidiceps* was observed foraging only on and within 2 m of the ground, much in the manner of *Atlapetes albiceps* (pers. obs.), periodically using nearby trees as lookout points, before recommencing foraging, and occasionally making flights as long as 40 m. It perch-gleaned insects along twigs, looked both up and down, picked fruit while sometimes fluttering in order not to lose balance, and pecked repeatedly at the ground, presumably for seeds. While foraging, the birds held the tail half-cocked most of the time, occasionally twisting it in a circular action for balance when reaching out for fruit.

Three plants whose fruits were positively observed being eaten by *Atlapetes pallidiceps* were identified. These were an introduced species of *Rubus* sp. (Rosaceae), and a *Solanum* sp. (Solanaceae) and *Morus* sp. (Moraceae). All three grew in disturbed, irrigated farmland as well as in the arid thickets.

According to local people, the rain pattern in the Yunguilla Valley follows that on the coast, i.e. rains during late December–April, rather than that of Cuenca (rains in October–November and March–April). Several local people informed us that bird song is prominent in the valley in late February–March. This then seems the ideal time to record the song and map the territories of *Atlapetes pallidiceps*, and to commence studies of the species' ecology. To prevent its extinction through loss of habitat, the owners of one of the two properties holding *Atlapetes pallidiceps* were approached and asked to sell the land. They agreed to sell one piece of land of c.26 ha, which includes the patches of scrub where the bird was found. Presently most of the arid hillside is covered with the introduced African grass *Melinis minutiflora*, but this land can presumably be converted into suitable habitat for Pale-headed Brush-finch. The land currently consists of 5 ha of arid, mostly composite and verbenaceous scrub with a few *Acacias* and lauraceous trees on the lower hillside (with some pure stands of 2–3 m-tall *Chusquea* bamboo), a ravine with greener, densely tangled shrubbery and some trees, and an irrigated patch at the foot of the hill held a thicket dominated by *Ricinus* and *Rubus* (both introduced).

Because the landowners were made aware of the bird and the interest in preserving it, they collected numerous villagers to extinguish a large fire, that threatened to destroy the last patches of habitat only five days after the species was rediscovered. Fundación Jocotoco, an Ecuadorian conservation organisation, founded in order to protect endangered species of birds through land purchase, have undertaken to buy and manage the land. The founding sponsor of the foundation is a British scientist, Nigel Simpson, and among the board members are Robert Ridgely and Paul Greenfield. Although only recently established, the foundation has already purchased 700 ha of prime forest, aiming to protect a new, as yet undescribed species of antpitta. The purchase of the *Atlapetes pallidiceps* land, expected to take place in February 1999, is possible at so short notice only through additional funding from J. Moore and World Parks Endowment. Other donors are encouraged to support the foundation, which can be contacted through BirdLife International (Cambridge, UK), R. S. Ridgely at ridgely@say.acnatsci.org (USA), Francisco Sornoza at FSornoza@pi.pro.ec, P. Greenfield at PaulG@pi.pro.ec or N. Krabbe at NKrabbe@pi.pro.ec (Ecuador).

Land management should include effective fencing against cattle and goats. A local person should be hired to prevent fires and maintain fences (a potential candidate has already been identified). Studies of the species and its habitat are required for successful land management (one such study is planned for February–March 1999). Efforts to protect the other property where *Atlapetes pallidiceps* was found, as well as the small ravines between the two properties (which probably hold a few pairs) should be made. Some measure of protection for these areas may be achieved through environmental education and paying for the fencing-off of small patches of suitable habitat. A nearby Cuenca foundation, such as Fundación Mazan, might be able to undertake such a programme successfully.

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**Appendix 1.** Localities and other bird species recorded during the surveys. One-hundred and thirty-four species of birds were recorded at 20 sites during searches for the Pale-headed Brush-finch, at 1,000–2,650 m elevation in the dry and semi-humid parts of Río Jubones drainage, Azuay and Loja Provinces, southern Ecuador. Noteworthy records apart from *Atlapetes pallidiceps* include the presence of both *Glaucidium peruanum* (perhaps vocally distinct from coastal birds) and *Glaucidium jardinii* at locality 2 (2,600 m), and the observations of *Nothoprocta pentlandii*, *Ortalis erythroptera*, *Ochthoeca leucophrys* and *Amaurospiza concolor*, all known from relatively few localities in Ecuador.

### Localities

Cebadillas, 10 km south-east of Pucará (03°17'S 79°25'W) (AA, NK, OR): 1: 1,900–2,000 m. Semi-humid forest and semiarid scrub. 21–22 November 1998.

Yunguilla Valley (03°10'–15'S 79°15'–20'W) (AA, NK, OR): 2: 2,600 m. Semi-humid forest and adjacent rock-slide and scrub. 12–14 November 1998. 3: 2,550 m. Semi-humid scrub. 14–15 November 1998. 4: 1,700–2,000 m. Semi-humid forest and scrub. 23 November, 3 December 1998. 5: 1,550–1,800 m. Arid scrub, semi-humid forest, irrigated farmland. 15–19, 23–24 November, 3–4 December 1998. 6: 1,600–1,700 m. Arid scrub, semi-humid ravines, irrigated farmland. 22–23 November, 3 December 1998. 7: 1,550–1,600 m. *Acacia* scrub. 12 November 1998. Birds noted here by NK only on 11 February 1993 marked \*.

South bank of Río Girón, from Girón to 2 km down river. 8: 1,900–2,000 m. *Acacia* scrub, riparian shrubbery. 10 February 1993 (NK and Patricio Mena).

North bank of Río Rircay. 9: 1,500 m. 1.5 km south-west of Santa Isabel, Q. Llivshi (03°17'S 79°19'W). *Acacia* scrub. 16 February 1991 (NK and Michael Kessler). 10: 1,200–1,450 m. 2–3 km south-east of Abdón Calderón (03°16'–17'S 79°16'–17'W). *Acacia* scrub. 16 February 1991 (NK and Michael Kessler), 11–12 November 1998 (AA, NK, OR).

North bank of Río Jubones. 11: 1,000 m. Turn-off to San Sebastián de Yulúc (03°20'S 79°22'–23'W). *Acacia* scrub. 15 February 1991 (NK and Michael Kessler).

Río Leones drainage. 12: 2,450 m. 3 km south-west of Oña, between Puishig and Loma Escaleras (03°29'S 79°10'W). 24 October 1994 (NK and Paul Coopmans). Semi-humid scrub. 13: 2,330 m. Just below Oña. 13 February 1991 (NK and Michael Kessler). *Acacia* scrub. 14: 1,800–1,900 m. Río Leones. *Acacia* scrub. 14 February 1991 (NK and Michael Kessler), 2 April 1991 (NK). 15: 2,100–2,600 m. North bank Río Paquishapa (03°31'–33'S 79°14'–15'W). Semi-humid riparian shrubbery. 5 November 1992 (NK). 16: 2,250 m. Loma Encillada (03°32'S 79°17'W). *Acacia* scrub. 3 November 1992 (NK). 17: 1,900 m. South bank of Río Paquishapa (03°31'S 79°16'W). *Acacia* scrub. 3–4 November 92 (NK). 18: 1,350–1,475 m. El Ingenio, north bank of Río Paquishapa (03°30'S 79°16'W). *Acacia* scrub. 4 November 1992 (NK). 19: 2,650 m. Gualedel (03°32'S 79°14'W). Open fields and hedgerows. 5 November 1992 (NK). 20: 1,900–2,100 m. North bank Río Paquishapa (03°31'S 79°15'W). Dry *Oreopanax* forest patch (1 ha) with many bromeliads. 5 November 1992 (NK).

### Species recorded

For each species the numbers for the localities where it was recorded are provided.

<i>Nothoprocta pentlandii</i>	5,16,17,18 (also Q. Chaupiloma, 03°17'S 79°25'W, 1550 m)
<i>Bubulcus ibis</i>	5,7
<i>Tigrisoma fasciatum</i>	7* (one immature)
<i>Coragyps atratus</i>	6
<i>Cathartes aura</i>	3,6,8,10
<i>Vultur gryphus</i>	14,17
<i>Elanoides forficatus</i>	1
<i>Chondrohierax uncinatus?</i>	5
<i>Accipiter ventralis</i>	2
<i>Accipiter bicolor</i>	5
<i>Buteo polyosoma</i>	2
<i>Buteo platypterus</i>	8
<i>Geranoaetus melanoleucus</i>	1,2,5,11,15,17
<i>Parabuteo unicinctus</i>	5,6,10
<i>Falco sparverius</i>	2,3,14,17
<i>Ortalis erythroptera</i>	5
<i>Penelope montagnii</i>	2
<i>Actitis macularia</i>	11,14
<i>Columba fasciata</i>	1,2,3,4,5
<i>Columbina cruziana</i>	7,10,11,14,17,18
<i>Leptotila verreauxi</i>	2,4,5,6,7*,8,10,14,15,17,18
<i>Zenaida auriculata</i>	2,7,10,11,13,14,15,17
<i>Geotrygon frenata</i>	2,3,5,6
<i>Tapera naevia</i>	1,5,6,7,8,18
<i>Playa cayana</i>	1
<i>Crotophaga sulcirostris</i>	1,4,5,6,7,8,10,11,14,18
<i>Tyto alba</i>	5
<i>Otus albogularis</i>	2,3,6
<i>Bubo virginianus?</i>	1
<i>Glaucidium jardinii</i>	2
<i>Glaucidium peruanum</i>	2,3,5,6,7,10,14,17
<i>Speotyto cunicularia</i>	10,17

*Strix virgata* 5  
*Nyctidromus albicollis* 5,6,10  
*Caprimulgus longirostris* 2  
*Streptoprocne zonaris* 1,4,5,17  
*Streptoprocne rutilus* 1  
*Aeronautes montivagus* 1,8,14,15,17,18  
*Amazilia amazilia* 1,4,5,7\*,8,9,11,13,14,16,17,18  
*Adelomyia melanogenys* 2,3,6  
*Patagona gigas* 14  
*Coeligena iris* 2,3,4,5  
*Lesbia nuna* 2,6,15,16  
*Heliomaster longirostris* 7\*  
*Myrtis fannyi* 5,10,14,18,20  
*Acestrura mulsant* 7,10  
*Andigena hypoglaucia* 2  
*Piculus rivolii* 1,2,3,4,5,6  
*Piculus rubiginosus* 5  
*Veniliornis fumigatus* 1,2,3,4,5,6,7,10,14,17,20  
*Veniliornis callonotus* 10  
*Furnarius cinnamomeus* 1,5,6,7,18  
*Synallaxis azarae* 1,2,3,4,5,6,7,8,15,17  
*Cranioleuca antisensis* 1,2,3,4,5,6,7,8,15,17,20  
*Pseudocolaptes boissonneautii* 1,2,3,5  
*Grallaria ruficapilla* 1,2,3,4,5,6,7,8,10,17,20  
*Scytalopus unicolor* 1,2,3,4,5,6,8,16,17  
*Phyllomyias uropygialis* 1,2,3,4  
*Camptostoma obsoletum* 1,5,6,7,8,10,14,17  
*Phaeomyias murina* 9  
*Elaenia albiceps* 1,2,3,4,5,6,9,10,16,17  
*Elaenia pallatangae* 1,2,5  
*Elaenia obscura?* 1?,5?,6?  
*Myiopagis subplacens* 5,6,7  
*Mecocerculus stictopterus* 2  
*Mecocerculus poecilocercus* 4  
*Anairetes parulus* 2  
*Serpophaga cinerea* 8  
*Euscarthmus meloryphus* 1,5,6,7,9,10,14,17,18  
*Poecilatriccus ruficeps* 4,5  
*Myiophobus fasciatus* 1,3,4,5,6,7,10,17,18  
*Sayornis nigricans* 8,14,18  
*Pyrocephalus rubinus* 6, 7\*,8,9,10,11,14,17,18  
*Contopus fumigatus* 5  
*Contopus cf. virens* 6  
*Contopus cinereus* 5,8,9  
*Ochthoeca leucophrys* 12  
*Ochthoeca rufipectoralis* 1,2,3  
*Muscigralla brevicauda* 9  
*Myiotheretes striaticollis* 1,2,3,5,8  
*Myiarchus tuberculifer* 1,2,3,4,5,6,7,18  
*Tyrannus melancholicus* 5,6,10,18  
*Notiochelidon cyanoleuca* 1,2,4,5,6,7,8,10,14  
*Notiochelidon murina* 2  
*Cyanolyca turcosa* 1,2,3,4,5,6  
*Cinclus leucocephalus* 8  
*Cinnycerthia unirufa* 2  
*Troglodytes aedon* 5,6,7,8,10,13,14,17,18,20  
*Catharus fuscater* 1,4,5,6,7\*  
*Catharus ustulatus* 5,6  
*Turdus fuscater* 1,2,3,4,5,6,7,8,15,16,17,18,20  
*Turdus chiguanco* 2,8,10,13,14,16,17,19  
*Turdus serranus* 1,4  
*Turdus maculirostris* 5, 7\*  
*Cyclarhis gujanensis* 1,2,3,5,6,7,8,10,14,15,17,18  
*Vireo leucophrys* 4,6  
*Myioborus melanocephalus* 2,3  
*Myioborus miniatus* 1,4,5,6,7,8,15,16,17,18,20  
*Geothlypis aequinoctialis* 5,7\*,10  
*Basileuterus coronatus* 1,2,3,4,5,6  
*Basileuterus nigrocristatus* 2,3,4,5,6  
*Conirostrum cinereum* 2  
*Diglossa cyanea* 4  
*Diglossa sittoides* 8  
*Euphonia cyanocephala* 4,5,6,7,8  
*Euphonia laniirostris* 7\*  
*Pipraeidea melanonota* 1,4,5,6  
*Tangara viridicollis* 8  
*Anisognathus somptuosus* 4,5  
*Thraupis episcopus* 5,6,7,8,9,10,11  
*Thraupis bonariensis* 5,17  
*Thraupis cyanocephalus* 2,3,4,5

<i>Piranga rubra</i>	4,5,6
<i>Thlypopsis ornata</i>	1,2,4,5,6
<i>Pheucticus chrysogaster</i>	1,2,3,4,5,6,7,8,9,10,11,14,17,18
<i>Sporophila nigricollis</i>	5
<i>Sporophila simplex</i>	7*,10
<i>Sporophila peruviana</i>	10,11
<i>Sporophila telasco</i>	10
<i>Tiaris obscura</i>	7*,18
<i>Catamenia analis</i>	13,14
<i>Phrygilus plebejus</i>	7,8,9,10,11,13,14,15,16,17,18,19
<i>Phrygilus alaudinus</i>	10
<i>Sicalis luteola</i>	6,19 (also at 1,600 m below loc.1)
<i>Sicalis flaveola</i>	13
<i>Amaurospiza concolor</i>	5
<i>Atlapetes rufinucha</i>	1,2,3,15
<i>Atlapetes pallidiceps</i>	5,6
<i>Buarremon torquatus</i>	2,4,5,6,7*
<i>Zonotrichia capensis</i>	1,2,3,5,6,7,8,10,14,15,16,17,18,19,20
<i>Molothrus bonariensis</i>	8,9
<i>Sturnella bellicosa</i>	1,7,8,9,10,14,16,17,18
<i>Cacicus leucorhamphus</i>	2,3
<i>Carduelis magellanica</i>	4,5,6,7,8,9,10,13,18

Plants of arid scrub and adjacent ravines and irrigated farmland used by *Atlapetes pallidiceps*.

Apocynaceae:	genus?
Asteraceae:	<i>Liabum</i> sp., <i>Conyza</i> sp., <i>Baccharis trinervia</i> , <i>Pseudogynoxys</i> sp., four unidentified species.
Bignoniaceae:	<i>Tecoma</i> sp. (introduced).
Boraginaceae:	<i>Tournefortia</i> sp.
Buddlejaceae:	<i>Buddleja</i> sp.
Euphorbiaceae:	<i>Acalypha</i> sp., <i>Ricinus communis</i> (introduced).
Fabaceae:	genus?
Lauraceae:	three unidentified species of tree.
Mimosaceae:	<i>Acacia</i> sp.
Moraceae:	<i>Morus</i> sp.
Passifloraceae:	genus?.
Poaceae:	<i>Chusquea</i> sp., <i>Melinis minutiflora</i> (introduced).
Polygonaceae:	<i>Polygonum</i> sp. (introduced).
Rosaceae:	<i>Rubus</i> sp. (introduced).
Solanaceae:	<i>Acnistus</i> sp., <i>Cestrum</i> sp., <i>Solanum</i> sp..
Verbenaceae:	<i>Lantana</i> sp.