# First observations of parental care in Screaming Piha Lipaugus vociferans

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Source: Bulletin of the British Ornithologists' Club, 142(2) : 268-272

Published By: British Ornithologists' Club

URL: https://doi.org/10.25226/bboc.v142i2.2022.a11

# First observations of parental care in Screaming Piha *Lipaugus vociferans*

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*Received 23 December 2021; revised 1 March 2022; published 3 June 2022*

*http://zoobank.org/urn:lsid:zoobank.org:pub:E1C4F815-759B-4015-B7AC-561E688E0D94*

The family Cotingidae is endemic to the Neotropics and is notable for species that possess a great diversity of plumage ornaments and sounds, in addition to elaborate courtship behaviour (Podos & Cohn-Haft 2019, Winkler *et al*. 2020). In addition to its 'showy' representatives, e.g. species in the genera *Rupicola*, *Phoenicircus* and *Cotinga*, it also contains visually inconspicuous species like most of the genus *Lipaugus*.

Screaming Piha *Lipaugus vociferans* occurs in the humid Amazonian lowlands of northern South America with a disjunct population in the Atlantic Forest of eastern Brazil (Suzuki *et al*. 2020). It occupies the forest midstorey, mostly in dry-land upland forest, but also locally in seasonally flooded forest (Kirwan & Green 2011). Individuals are grey with no sexual dimorphism in plumage (Suzuki *et al*. 2020). Males gather in leks where they give their loud and unmistakable vocalisations (Kirwan & Green 2011).

The reproductive biology of most cotingids is poorly known. Data on parental care are scarce in the literature and difficult to obtain in the field, even for widely distributed and abundant species such as *L. vociferans* (Winkler *et al*. 2020). Here, we present new data on parental care for this species, as well as information about nestling diet and length of stay in the nest. We observed the nest for a total of ten hours, using binoculars and digital cameras with 50× and 60× zoom lenses. Videos and photographs were analysed to identify dietary items and deposited in the Macaulay Library via the eBird platform (www.ebird.org). The nest's height above ground was calculated using a Bushnell Yardage Pro Sport 450 Laser Rangefinder.

On 25 September 2021, we found a nest in an area of upland forest in the grounds of the Iracema Falls Hotel, municipality of Presidente Figueiredo, Amazonas, Brazil (01°58'59.34"S, 60°03'04.67"W). An adult *L. vociferans* was initially noticed holding an unidentified arthropod in its bill. Because the bird did not swallow the prey immediately, we continued to watch, suspecting it might be feeding young. After a few minutes, it flew to the nest, and fed a chick that we estimated to be five days old, given the presence of down covering the body. After feeding the chick, the adult remained at the nest for the next 15 minutes. The nest lacked a well-defined shape and comprised thin branches and rhizomorph fungus (Figs. 1, 2 and 4), best classified as a simple platform *sensu* Simon & Pacheco (2005). It was *c*.4 m from the forest edge, supported at the sides in a fork of narrow branches 11 m above ground. The nest tree was approximately 12 m tall and <30 cm dbh. The area around the nest held several *Euterpe* sp. palms, which may have contributed to the adult's choice of nest site.

We revisited the nest on 3, 9 and 12 October. We observed the adult leave the nest nine times, taking on average 22 minutes to return (min. 8, max. 89 minutes), permitting us to observe eight provisioning events (Table 1; ML 393817191, ML 393819751 and WA 4707161). On 3 October, the nestling, which had pink skin and a pale grey bill, still lacked wing-coverts, but already had feather pins, mainly on the wings, back and head, and the eyes appeared to be starting to open (Fig. 1). Usually, when the adult left the nest, it immediately



ISSN-2513-9894 (Online)

Figure 1. Adult Screaming Piha *Lipaugus vociferans*, covering the chick in the nest, Iracema Falls Hotel, Presidente Figueiredo, Amazonas, Brazil, 3 October 2021 (Priscilla de Jesus Diniz)

Figure 2. Nestling Screaming Piha *Lipaugus vociferans*, Iracema Falls Hotel, Presidente Figueiredo, Amazonas, Brazil, 9 October 2021 (Tomaz Nascimento de Melo)



ISSN-2513-9894 (Online)

Figure 3. Screaming Piha *Lipaugus vociferans* fledgling outside the nest, Iracema Falls Hotel, Presidente Figueiredo, Amazonas, Brazil, 12 October 2021 (Tomaz Nascimento de Melo)

TABLE 1
Food items brought by the adult Screaming Piha *Lipaugus vociferans* to the nest.

| Visit | Day | Food item | Description |
|---|---|---|---|
| 1 | 3 October 2021 | Fruit | Red fruit (perhaps *Erythroxylum*) |
| 2 | 3 October 2021 | Fruit | Probably *Euterpe*/*Oenocarpus* fruit |
| 3 | 3 October 2021 | Invertebrate | Orthopteran |
| 4 | 3 October 2021 | Invertebrate | Orthopteran (Tettigoniidae) |
| 5 | 3 October 2021 | Invertebrate | Araneae |
| 6 | 9 October 2021 | Anura | Green frog (eaten by the adult bird) |
| 7 | 9 October 2021 | Invertebrate | Unidentified arthropod |
| 8 | 9 October 2021 | Invertebrate | Unidentified arthropod |
| 9 | 12 October 2021 | Anura | Green frog |

disappeared and was seen again only when it approached the nest. However, four times the adult concentrated its search for food in a radius *c*.100 m from the nest. On these occasions, it was observed foraging 10–15 m above ground.

Twice, we saw the adult bring a tree-frog of the genus *Boana* (Hylidae) to the nest. The first time, after a few seconds, the adult tried to feed the chick, which did not accept the food, and the adult subsequently swallowed the frog (Table 1; Fig. 4D). Similar behaviour was observed by a Rufous Piha *Lipaugus unirufus* in Costa Rica, with the adult swallowing food that the chick had refused several times (Kirwan & Green 2011). On 12 October, we again observed the adult bring a green frog to the nest, similar to the species in the first observation, but this time the nestling swallowed the food immediately upon it being proffered.



ISSN-2513-9894 (Online)


Figure 4. Food items brought to the nest by the adult Screaming Piha *Lipaugus vociferans*: (A) the chick with a probable *Euterpe/Oenocarpus* fruit that it was unable to swallow and subsequently dropped; (B) adult delivering an unidentified spider to the young; (C) adult delivering an orthopteran to the young; (D) adult offering an anuran to the nestling, which it later swallowed itself (see text) (Tomaz Nascimento de Melo)

On 9 October, we observed agonistic behaviour from the adult while at the nest, in response to the approach of a flock of Red-rumped Caciques *Cacicus haemorrhous*. The adult chased away a cacique as soon as it landed in the nest tree and then returned to the nest. Aggressive nest defence behaviour has been previously reported for *L. vociferans* and another Cotingidae, Purple-throated Fruitcrow *Querula purpurata* (Sick 1997). On the same day, we could see that the chick was completely covered in brownish feathers, with darker wing-coverts. The bill and eyes had adult-like coloration (Fig. 2). On the last day of observations (12 October), the young was already perched just beside the nest (Fig. 3). We thus infer that the chick fledged at age *c*.23–24 days.

Although *L. vociferans* is one of the commonest Cotingidae throughout its range, little is known concerning its reproductive biology (Kirwan & Green 2011). Nests in Brazil and French Guiana, built 7–12 m above ground, were of similar shape and composition to that described here, and also had a single egg or nestling (Érard 1982, Oniki & Willis 1982, Sick 1997, Buzzetti & Silva 2005). Parental care had not previously been described. During our observations, just one adult was seen at the nest at any one time. Although we cannot be sure it was always the same individual, in our experience, when both parents participate they are regularly seen together near the nest. Thus, we suspect single-parent care, consistent with female-only nesting behaviour described for other lekking cotingids (Kirwan & Green 2011). Nestling time (estimated at 23–24 days) is marginally shorter than in congenerics. However, we may have under-estimated the chick's age at discovery. Cinnamon-vented Piha *L. lanioides* takes 25–26 days to fledge and Rufous Piha *L. unirufus c*.28–29 days (Skutch 1969, Willis & Oniki 1998).


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*L. vociferans* feeds mainly on fruits and invertebrates (Kirwan & Green 2011). Consumption of vertebrates, like the small frogs we observed, has been reported only once before: a lizard of the genus *Anolis* (Whittaker 1996). Vertebrate predation, however, is known for at least 12 other cotingid species, amphibians being the second most preyed upon group after lizards (Lopes *et al*. 2005).

**Acknowledgements**

We are grateful to the herpetologist Leandro Moraes for his help identifying the amphibians and to Mario Cohn-Haft for his comments and revisions. This is contribution 63 in the Amazonian Ornithology Technical Series of the Instituto Nacional de Pesquisas da Amazônia Zoological Collections Program.

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ISSN-2513-9894 (Online)