

Range extension and first record of *Dendropsophus studeræ* (Carvalho-e-Silva, Carvalho-e-Silva, and Izecksohn, 2003) in the state of Pernambuco, northeastern Brazil

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The *Dendropsophus microcephalus* species group is the most diverse group of small hylids comprising 37 species distributed across five clades: *D. microcephalus*, *D. rubicundulus*, *D. branneri* and *D. bipunctatus* (Faivovich et al., 2005; Orrico et al., 2021; Whitcher et al., 2024). The *Dendropsophus bipunctatus* clade includes *D. bipunctatus* (Spix, 1824) and *D. studeræ* (Carvalho-e-Silva et al., 2003), both endemic to the Atlantic Forest (Frost, 2025).

Dendropsophus studeræ is a small hylid (snout-vent length [SVL] 20.8–24.8 mm for males; 26.8–29.6 mm for females), distinguished by its greenish dorsum, orange limbs, yellowish venter, a sepia lateral stripe extending from the nostrils to the inguinal region, and yellow spots on the upper lip (Carvalho-e-Silva et al., 2003). Prior to this study, the species had only been recorded at the type locality in the Reserva Biológica Pedra Talhada, municipality of Quebrangulo, state of Alagoas (Carvalho-e-Silva et al., 2003), and in the municipality of São Sebastião do Passé, state of Bahia, Brazil (Napoli et al., 2014). Here, we report the first records of *D. studeræ* from the state of Pernambuco.

As part of a herpetofauna inventory and monitoring program within the sustainable conservation unit: Área de Proteção Ambiental Aldeia-Beberibe, we identified two new populations of *Dendropsophus*

studeræ. This protected area encompasses the largest northern remnant of the Atlantic Forest and is located within the Pernambuco Endemism Centre—a distinct biogeographical region characterised by high levels of amphibian endemism (see Vieira et al., 2023; Bolochio et al., 2025).

The first record was obtained on 21 March 2025 at the Mata da Pitanga locality (−7.9086°S, −35.0367°W, 142 m elevation), in the municipality of Paudalho, Pernambuco, Brazil. Between 18:00–21:00 hrs, during visual and acoustic surveys, individuals of *D. studeræ* were encountered in a swampy forest area composed of large ponds fed by springs from the Utinga River. The site featured herbaceous and floating vegetation within the pond and arboreal vegetation along its margins.

We observed *D. studeræ* during reproductive activity, with calling males (a chorus of over 30 individuals) and in amplexus pairs (Fig. 1A–B). Most males were calling from herbaceous vegetation inside the pond, positioned 10 cm to 1 m above the water (Fig. 1D). A few individuals were also vocalising from tree leaves around the pond, at heights of 2–3 m. Other anuran species recorded at the site included: *Adenomera hylaedactyla* (Cope, 1868), *Boana albomarginata* (Spix, 1824), *Hylomantis granulosa* (Cruz, 1989), *Sphaenorhynchus prasinus* Bokermann, 1973, *Dendropsophus elegans* (Wied-Neuwied, 1824), *D. minutus* (Peters, 1872), *D. branneri* (Cochran, 1948), *Leptodactylus vastus* Lutz, 1930, *L. mystaceus* (Spix, 1824), *L. natalensis* (Smith, 1849), *Physalaemus caete* Pombal and Madureira, 1997, and *Pristimantis ramagii* (Boulenger, 1888).

Two individuals of *D. studeræ* were collected under SISBIO permit 11218–1. Specimens were euthanised in accordance with ethical guidelines established by the Federal Council of Veterinary Medicine—CFMV (2013), fixed in 10% formalin, and preserved in 70% alcohol. They were deposited in the Herpetological Collection of the Universidade Federal do Ceará (CHUFC-A-14157: male, SVL = 20.5 mm; CHUFC-A-14158: female, SVL

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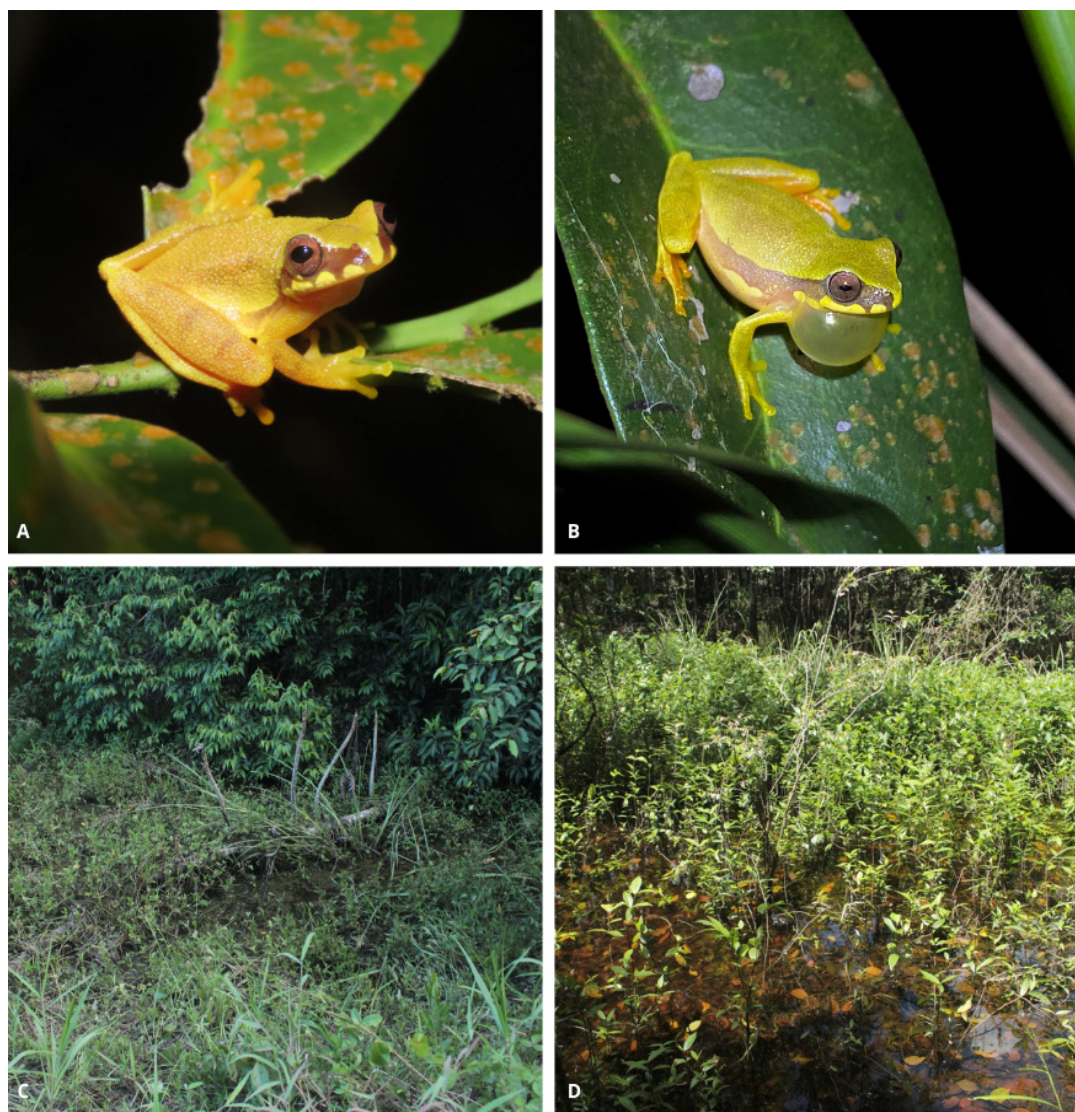


Figure 1. Individuals of *Dendropsophus studei* and the habitats of occurrence in the Área de Proteção Ambiental Aldeia-Beberibe, state of Pernambuco, northeastern Brazil: (A–B): adult males from the locality Mata da Pitanga, municipality of Paudalho, (C): provisory pond at Mata do CMNIC, municipality of Aldeia, (D): pond at Mata da Pitanga, municipality of Paudalho. Photos by Pedro H.M. Barbosa (A), Rodrigo J.L. Leite (B) and Yuri D.L.V. Gomes (C–D).

= 23.0mm).

The second record was obtained on 25 March 2025, at approximately 21:40 hr, at the Centro de Instrução Marechal Newton Cavalcante (CIMNC), commonly known as Mata do CMNIC (-7.8430°S , -35.1010°W , 134 m elevation), a remnant of Atlantic Forest located in the municipality of Abreu e Lima, Pernambuco, Brazil. We collected an amplexus pair of *D. studei* in a temporary pond within secondary forest. The pond

measured approximately 3 meters in length, 2 m in width, and 1 m in depth, with herbaceous and floating vegetation present (CHUFC-A-14155: male, SVL = 22.7 mm; CHUFC-A-14156: female, SVL = 23.7 mm) (Fig. 1C). Additional anuran species recorded at the same locality included: *Dendropsophus oliveirai* (Bokermann, 1963), *D. branneri*, *D. elegans*, *Boana albomarginata*, *Phyllodytes edelmoi* Peixoto et al., 2003, *Pithecopus gonzagai* Andrade et al., 2020, *Gastrotheca fissipes*

(Boulenger, 1888), *Pristimantis ramagii*, *Leptodactylus troglodytes* Lutz, 1926, *L. mystaceus* and *L. natalensis*.

All individuals of *D. studerae* exhibited the diagnostic morphological features described by Carvalho-e-Silva et al. (2003), including a green dorsum, a sepia lateral stripe, and yellow spots on the upper lip. However, we observed some variation among individuals in the number of yellow spots on the upper lip and the extent of the lateral stripe (Fig. 1A–B).

Dendropsophus studerae was found at higher densities in more preserved forest habitats, though it also occurred in secondary forest, as previous reported for northern Bahia population (Napoli et al., 2014). Despite extensive sampling efforts within the APA Aldeia-Beberibe, the species appear to be rare in this region, with only two populations detected (Santos, E.M. personal communication).

Here we report the northernmost known localities for *Dendropsophus studerae*, located 222.6 km northeast of the municipality of Quebrangulo, the species' type locality (Fig. 2). Currently, the species is classified

as endangered on the IUCN Red List of Threatened Species due to its limited extent of occurrence—less than 5000 km²—and the fragmented populations (IUCN SSC Amphibian Specialist Group and Instituto Boitatá de Etnobiologia e Conservação da Fauna, 2023).

Our findings provide new data on an endangered species occurring in a threatened region, underscoring the ecological significance of the Aldeia-Beberibe Environmental Protection Area (APA). This area has been under increasing pressure from real estate development and large-scale infrastructure projects that threaten one of the largest remaining blocks of Atlantic Forest in the state of Pernambuco (Cunha et al., 2024).

Despite our new records, multiple herpetofaunal surveys across remnants of the Pernambuco Endemism Centre have failed to detect *Dendropsophus studerae* (e.g., Roberto et al., 2017; Oliveira et al., 2021; Vieira et al., 2023; Dubeux et al., 2024), reinforcing its apparent rarity and potentially restricted distribution. We hope that these records support ongoing conservation efforts and inform decision-makers, including public

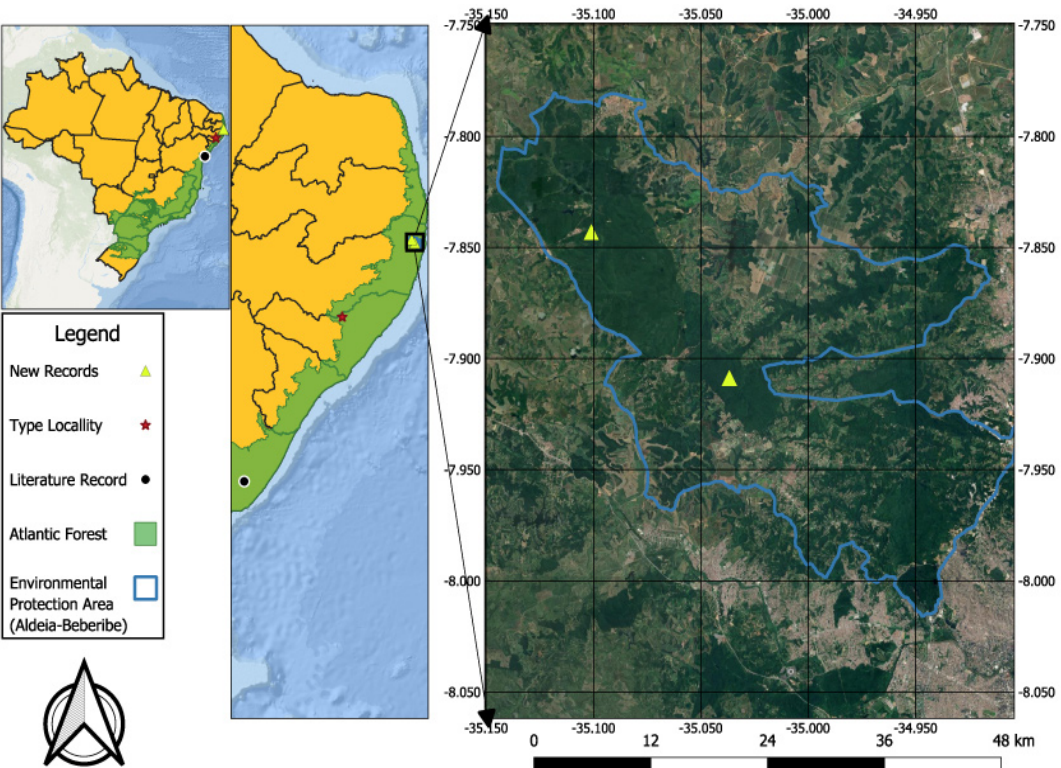


Figure 2. Geographic distribution map of *Dendropsophus studerae*, showing the literature and new records from the state of Pernambuco, Brazil.

environmental agencies, private landowners, and other stakeholders, regarding the importance of effective conservation and monitoring strategies. These may include the reconsideration of large infrastructure projects such as the “Arco Metropolitano do Recife” and the “Escola de Sargentos do Exército,” for which viable alternative routes have been proposed (Cunha et al., 2024).

Our commitment to protecting this area is grounded in several legal frameworks, including national legislation for Atlantic Forest protection (Brasil, Law 11.428/2006), environmental protection of conservation units and water resources (Pernambuco, Law 9.860/1986, Art. 4, §2, I), and should be further evaluated and integrated into the PAN Nordeste (National Action Plan for Endangered Species).

Acknowledgments. IJR thanks the “Programa de Desenvolvimento Científico e Tecnológico Regional – PDCTR” (CNPq/Funcap - Notice 03/2021, DCT-0182-00049.01.00/21 and 04863348/2022) for the research fellowship and financial support (PDCTR 301304/2022-0). We also thank the Research in Motion Program of UFRPE; the Centro de Instruções Marechal Newton Cavalcanti (CIMNC) and Area de Proteção Aldeia-Beberibe for their support and authorization to conduct fieldwork.

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