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SHORT NOTE

New records of *Lithodytes lineatus* (Anura: Leptodactylidae) in the Cerrado-Amazon transition

Nuevos registros de *Lithodytes lineatus* (Anura: Leptodactylidae) en la transición Cerrado-Amazonas

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ABSTRACT

Lithodytes lineatus is widely distributed in the Amazon and currently found in the Cerrado domain. We document two new records of the species in the transition zone of Amazon-Cerrado located in the state of Tocantins, Brazil. These records extend the geographic distribution of this species and help to fill information gaps in the state of Tocantins, Brazil.

Keywords. Ecotone zone, geographic distribution, gold-striped frog

RESUMEN

Lithodytes lineatus tiene amplia distribución en el dominio amazónico y actualmente se encuentra en el dominio Cerrado. Documentamos dos nuevos registros de la especie en la zona de transición de Amazon-Cerrado ubicada en el estado de Tocantins, Brasil. Estos registros extienden la distribución geográfica de esta especie y ayudan a llenar los vacíos de información en el estado de Tocantins, Brasil.

Palabras clave. Distribución geográfica, rana terrestre rayada, zona ecotónica

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Lithodytes lineatus (Schneider, 1799) is a monotypic species of the genus *Lithodytes*, commonly known as Gold-striped frog (Frank and Ramus 1996). This is a widely distributed species throughout the Amazon domain, and can also be found in transitional areas between the Amazon and Cerrado domains (La Marca *et al.* c2010, Valdujo *et al.* 2012, Cintra *et al.* 2014). In Brazil, *L. lineatus* occurs in the states of Acre, Amazonas, Pará, Rondônia, Mato Grosso, Tocantins, Maranhão, and Amapá (Pavan 2007, La Marca *et al.* c2010, Cintra *et al.* 2014, Freitas *et al.* 2014).

Here we provide new distribution records for *L. lineatus* in the Tocantins state, northern Brazil (Fig. 1). We obtained the new records during herpetofaunal studies in the Araguaia-Tocantins hydrographic basin, a transitional area between Amazonia and Cerrado. We captured individuals of *L. lineatus* (Fig. 2) using pitfall traps (collecting permit issued by IBAMA: 63228-1), and deposited the specimens in the Coleção Zoológica da Universidade Federal de Mato Grosso do Sul, Campo Grande municipality, Mato Grosso do Sul state, Brazil. To create the distribution map, we use the ecoregions shapefile from World Wild Life - WWF (Olson *et al.* 2001) modified to display the Brazilian domains highlighting the Ecoregion "Mato Grosso tropical dry forests" usually named as "Cerrado-Amazon ecotone" (e.g. Bezerra *et al.* 2009, Cintra *et al.* 2014). We used the International Union for Conservation of Nature - IUCN spatial data with the proposed *L. lineatus* distribution (La Marca *et al.* c2010). Then, we added literature records from Tocantins (Pavan 2007, Cintra *et al.* 2014 and present study), Maranhão (Freitas *et al.* 2014) and Pará state (Bernardo *et al.* 2012). There is no information about *Lithodytes lineatus* type locality; thus, we expanded its distribution based on the nearest known locality for the species.

In March 2016, we collected two individuals of *L. lineatus* in Araguaína municipality (vouchers ZUFMS-AMP 08393 and 08394), northern Tocantins (7°6'17.03" South; 48°11'23.32" West). This record extends the geographic distribution of *L. lineatus* approximately 79 km northwest from the nearest locality, Filadélfia municipality, Tocantins state, Brazil (Cintra *et al.* 2014) (Fig. 1).

In January 2017 and May 2018, we found six individuals of *L. lineatus* in Caseara municipality (vouchers ZUFMS-AMP 11243–11246), western Tocantins

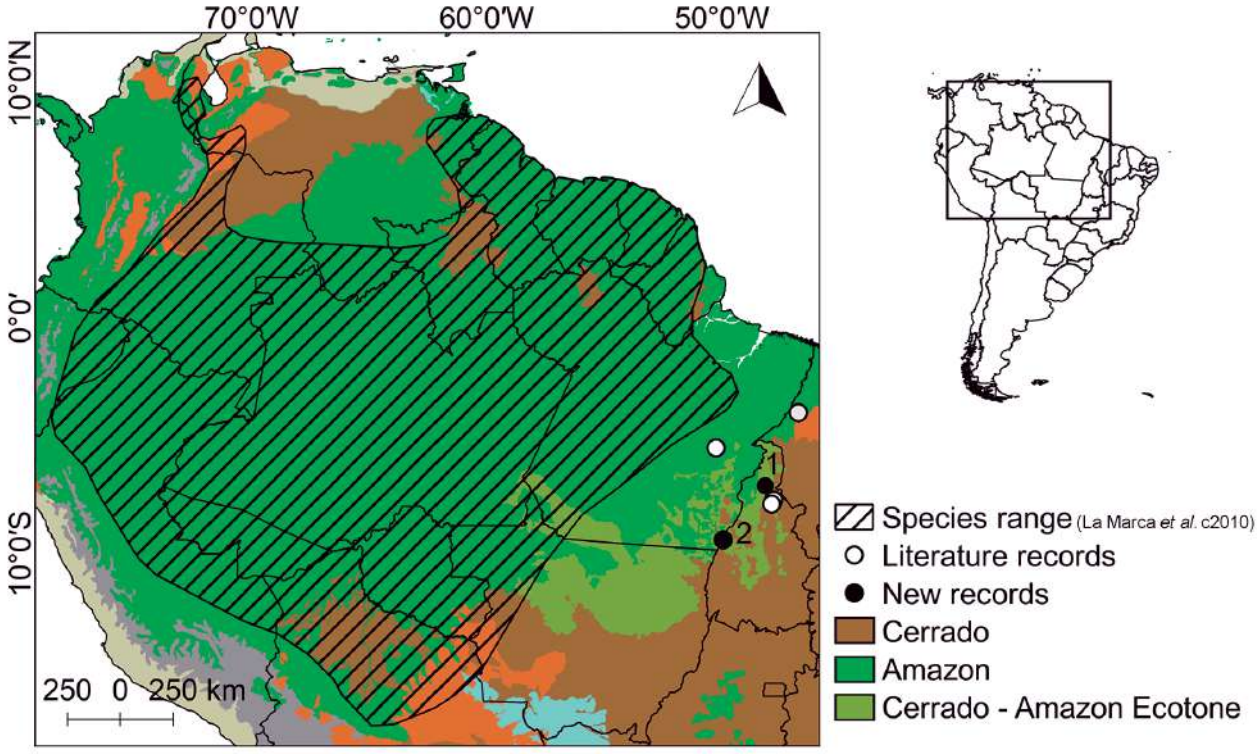

Figure 1. Distribution map of *Lithodytes lineatus* in South America. Colors on map represent Domains and Ecoregions from South America (modified from Olson *et al.* 2001). Striped area indicates the distribution suggested for the species by International Union for Conservation of Nature - IUCN (La Marca *et al.* c2010). White circles indicate literature records which were not included in the distribution indicated by IUCN, and black circles indicate the new records in Tocantins state, Brazil (1: Araguaína and 2: Caseara).

Figure 2. Individual of *Lithodytes lineatus* (ZUFMS-AMP: 08394) from Caseara municipality, Tocantins state, Brazil.

(9°24'25.36" South; 49°58'21.33" West). The records of *L. lineatus* to the Caseara municipality extend its distribution in approximately 280 km south-west from the previously southernmost locality in the state, reported from Palmeirantes municipality (Pavan 2007) (Fig. 1).

The data presented here on the geographic range of *L. lineatus* south into the Cerrado show that this species does not occur exclusively in the Amazon domain, reaching transitional areas and forest habitats in the Brazilian Cerrado. This result reinforces the species structure demonstrated by Valdujo *et al.* (2012) that Amazonian species of marginal occurrence in the Cerrado are concentrated in the western and northern of this domain. Despite harboring a unique anuran species composition comprised of species typical to the Cerrado and neighboring domains (Amazonia and Caatinga; Silvano *et al.* 2016), the Brazilian state of Tocantins still has many gaps of knowledge related to biodiversity and distribution patterns of anurans (Diniz-Filho *et al.* 2005). Additional sampling effort and new records will help to fill these gaps and improve strategies for conservation of biodiversity in this anuran species-rich region of northern Brazil.

AUTHOR´S CONTRIBUTION

RT, HF and RMF significant contribution in conception and design of the study, data acquisition, and writing of the manuscript; LAS significant contribution in data acquisition and critical review adding intellectual content; SM and DJS significant contribution and critical review adding intellectual content.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest

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