

***Leptodactylus natalensis* (Lutz, 1930) (Amphibia, Anura, Leptodactylidae): First record from Maranhão state and new geographic distribution map**

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Abstract

The presently known distribution of *Leptodactylus natalensis* is no longer restricted to the northern and central limits of the Atlantic forest morphoclimatic domain. After Borges-Nojosa encountered it in the Caatinga at the time of this work, during a field expedition in the Parnaíba Delta in December 2007, we identified and collected some individuals of *L. natalensis* on the Ilha das Canárias, Araióses, located in northern Maranhão state. This new record for Maranhão extends the distribution of *L. natalensis* to approximately 520km west of the Serra de Baturité, in the state of Ceará.

Key words: *Leptodactylus natalensis*, Parnaíba Delta, geographic distribution

Resumo

***Leptodactylus natalensis* (Lutz, 1930) (Anfíbios, Anuros, Leptodactylídeos): Primeiro registro para o Estado do Maranhão e novo mapa de distribuição geográfica.** O presente conhecimento sobre a distribuição de *Leptodactylus natalensis*, não se restringe mais aos limites norte e central do domínio morfoclimático floresta atlântica. Após Borges-Nojosa encontrá-lo na caatinga, a equipe deste trabalho durante uma expedição de campo no Delta do Parnaíba, em dezembro de 2007, identificou e coletou alguns indivíduos de *L. natalensis* na Ilha das Canárias, município de Araióses, norte do estado do Maranhão. Esse novo registro para o Maranhão estende a distribuição de *L. natalensis* aproximadamente 520 km a oeste da Serra de Baturité, estado do Ceará e configura o primeiro registro para uma ilha costeira.

Unitermos: *Leptodactylus natalensis*, Delta do Parnaíba, ampliação de distribuição geográfica.

The *Leptodactylus* genus is divided into five groups: *ocellatus*, *fuscus*, *melanonotus*, *pentadactylus* and *marmoratus* (Heyer, 1969), the last of which is still undergoing acceptance by various authors. *Leptodactylus natalensis* is a member of the *L. podicipinus-wagneri* complex of the *L. melanonotus* group (*sensu* Heyer, 1994). Lutz (1930) described the species in Rio Baldo, Natal, in the state of Rio Grande do Norte, northeast Brazil. The knowledge about the distribution of this species was associated for a long time with the northern and central portions of the Atlantic forest morphoclimatic domain (Ab'Sáber, 1977) from its most northern extent in the State of Rio Grande do Norte to the state of Rio de Janeiro (Heyer and Heyer, 2006). In a recent survey of the herpetofauna of the Serra de Baturité, in Ceará state, Borges-Nojosa (2007) registered this species at this location and broadened its known distribution to the east side of the state. Despite this, it was never described as living on coastal islands. During field work in the Parnaíba Delta in December 2007, we found and collected some individuals of *L. natalensis* (Figure 1) on the Ilha das Canárias (S02°47'48.9" and W041°52'12.1"), Araioises, northern Maranhão state (Figures 2 and 3).



FIGURE 1: Adult male of *Leptodactylus natalensis* Lutz, 1930 (CHDP 0022) in temporary ponds on the Ilha das Canárias (Delta do Parnaíba), Maranhão, Brazil. Collected in December 2007 (Photo: João Manoel de Almeida Leite Júnior).



FIGURE 2: Study area on Ilha das Canárias (Photo: João Manoel de Almeida Leite Júnior).

The Parnaíba Delta matches a region of estuary characterized mainly by mangroves. At its mouth, the Parnaíba River forms a complex of approximately 70 islands. This complex is formed by five large islands distributed between two states: Piauí and Maranhão. The second largest island is Ilha das Canárias, belonging to the state of Maranhão (Figure 3B). This new record for Maranhão extends the distribution of *L. natalensis* to approximately 520km west of the Serra de Baturité, being the closest place this species was found.

The collected specimens, fixed in 10% formalin and preserved in 70% ethanol, were identified based on the original description and deposited in the Coleção Herpetológica Delta do Parnaíba (CHDP) under numbers CDHP 0022–0025. Some physical parameters, along with data collected as the characteristics of the individuals, were subsequently analyzed and compared with individuals in other locations. The minimum and maximum temperatures and moisture registered at this spot were 27.1°C/63% and 30.9°C/73% respectively, between 5:00pm and 5:00am, with water temperature around 27.7°C. Measurements (SVL = snouth vent length) were taken with a digital caliper to the nearest 0.01 mm, but then, to avoid pseudo precision, we rounded all measurements to just one decimal. The results were 7 g for the average weight and 39.15mm for the SVL (n=8).

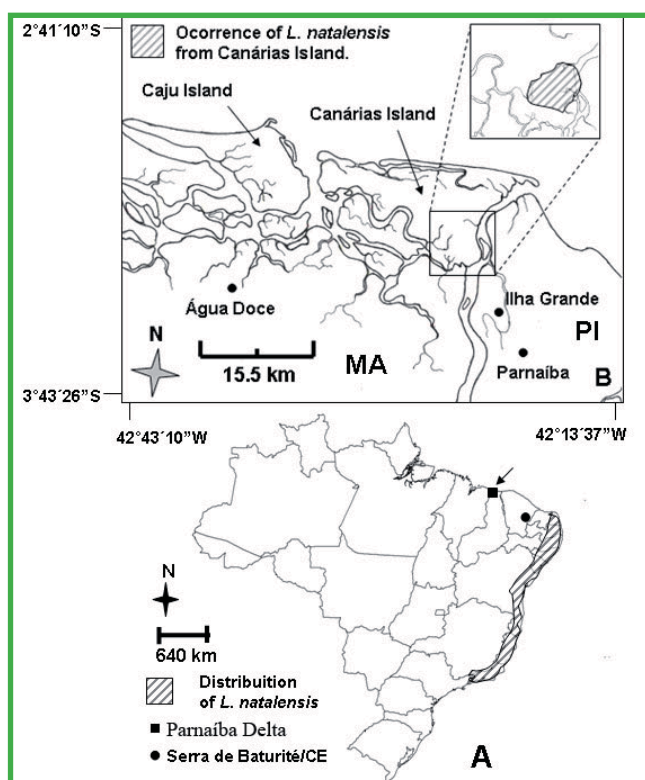


FIGURE 3: (A) Distribution and new occurrence map of *L. natalensis*. (B) Insert for Parnaíba Delta region.

The most remarkable fact is that this species is found in a completely different biome to that previously described, as already shown by Borges-Nojosa (2007), because although the coasts of Piauí and Maranhão are currently classified as Atlantic Forest according to federal law number 11,428/2006, this region has a climate and vegetation that are very different from the Atlantic Forest that belongs to the region previously described for this species, thus corresponding to a region of transition between the Atlantic Forest and the Amazon region (see Figure 2).

Males of *L. Natalensis* can be found within pits dug by them in the soil, between exposed plant roots, near the water's edge and under fallen leaves (Amorim et al., 2007). On Canárias Island, the individuals of *L. natalensis* were on the banks of an igarapé (term used in the region for primary or secondary springs of rivers) jumping on the foliage at dusk, using mainly the higher roots of trees to hide. In this region, the igarapés usually suffer much influence of the tide, increasing the salinity of the water. The water level oscillations in this place may exceed 3m. While no tests of the water's

salinity were carried out, we believe that this process makes the environment somewhat unsuitable for the breeding of amphibians. However, this population of *L. natalensis* seemed well adapted to the environment, because we noticed some specimens that were partially submerged.

Analyzing the proposed new map for the distribution of the species, we can recognize that its occurrence now extends along the coast of the northeast region, and this reflects that, in this corridor, there is a huge shortage of studies in the area of herpetology.

These new records are important for a re-assessment of the conservation status of this species. Our report is another typical example of how poorly known the distribution and abundance of Brazilian anurans is (Marques et al., 2006). Knowledge of the biological diversity of the Parnaíba Delta will bring information required in the future development of public policies for the conservation of this region.

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