

Living holed: *Leptodactylus latrans* occupying crabs' burrows

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The Butter Frog *Leptodactylus latrans* (Linnaeus, 1758) is a common inhabitant of urban areas, and is widely distributed throughout South America, east of the Andes (Frost, 2009). This species has been studied by numerous authors and is known for its high ecological plasticity, allowing it to occupy a wide variety of habitats (Heyer et al., 2004). However, so far there is no record of this species utilizing mangroves as habitats.

We observed six specimens of *L. latrans* occupying apparently abandoned crab burrows during a study conducted on the campus of the Federal University of Espírito Santo (20°16'S, 40°18'W), located in the municipality of Vitória, state of Espírito Santo, southeastern Brazil. We observed one adult of *L. latrans* sitting beside a crab's burrow on 27th January 2006 at 20:30 hrs. During the next night, we observed another two specimens sitting at the entrance of crab burrows at a different locality in the mangrove. In total, we detected six individuals, during seven days of observation, occupying this new type of micro-habitat for frogs. Four of those returned to their burrows after disturbance by the authors. In the case of two individuals we noticed the soil in the burrow entrances was cleared of vegetation and smoothed by the frog's constant use, which indicates that *L. latrans* create this as a resting area.

Using refuges such as burrows allows amphibians to gather extra protection from predation (Denton and Beebe, 1993; Spieler and Linsenmair, 1998) and

minimizes the effects of adverse weather conditions (Seebacher and Alford, 2002; Rothermel and Luhring, 2005). Several studies have reported frogs occupying burrows dug by other animals (e.g. Jensen and Richter, 2005; Lips, 1991; Richter et al., 2001; Conner et al., 1997; Izecksohn and Carvalho-e-Silva, 2002). Izecksohn and Carvalho-e-Silva (2002) reported males of *Arcovomer passarelli* vocalizing near or even inside burrows of freshwater crabs (*Trichodactylus* sp.). We believe our observations are the first record of frogs in crab's burrow in a mangrove ecosystem, which is a prime habitat for crabs *Ucides cordatus* and *Uca* sp. Although cohabitation was not observed in *L. latrans*, there are notes of this behavior for *Rana capito* (Roznik and Johnson, 2009).

Studying the diet composition in the same mangrove, Rangel and Ferreira (2007) recorded a juvenile crab in the stomach of a *L. latrans* individual. This demonstrates that the relationship of *L. latrans* with the mangrove ecosystem is beyond that of occupying crab burrows. It would be interesting to address a wide research to determine any further interactions between Butter frogs and crabs.

Thus, at this mangrove *L. latrans* can occasionally be observed sitting beside crab burrows at night. This result increases the knowledge about its ecological plasticity, which might be much larger than previously thought. Future research should concentrate on understanding the physiological mechanisms that allow frog to live in the mangrove ecosystem and adapt to its saline environment.

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Figure 1. A, B. *Leptodactylus latrans* using crab burrows at mangrove ecosystem, southeastern Brazil.

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