


Niche overlap between *Leptodactylus chaquensis* (CEI 1950) and *Leptodactylus podicipinus* (COPE 1862), in an area in the municipality of Cuiabá, Mato Grosso

 <https://doi.org/10.56238/alookdevelopv1-159>

Flavia Rodrigues Martinez

Master's student, UNESP

E-mail: flavia.martinez@unesp.br

José Pedro Forghieri Ruete

Professor Meste, UNIFAI

ABSTRACT

Amphibians are the first tetrapodes (gr. tetra, four + prunes, foot) vertebrates conquering the terrestrial

environment, are important predators of insects and other invertebrates. Considered opportunistic with regard to feeding habits, and the diet of a given species may reflect in part the availability of prey in the habitat. The present work deals with the niche overlap between the species *Leptodactylus chaquensis* and *Leptodactylus podicipinus* based on field collections in the municipality of Cuiabá, Mato Grosso.

Keywords: Amphibians, Ecological Niche, Levins Index, Simpson Diversity Index.

1 INTRODUCTION

Amphibians are the first tetrapodes (gr. tetra, four + prunes, foot) vertebrates conquering the terrestrial environment, are important predators of insects and other invertebrates. Considered opportunistic with regard to feeding habits, and the diet of a given species may reflect in part the availability of prey in the habitat. The present work deals with the niche overlap between the species *Leptodactylus chaquensis* and *Leptodactylus podicipinus* based on field collections in the municipality of Cuiabá, Mato Grosso. The animals were collected only for identification and recording, after which they were released at the same point. Twelve field visits were made between September and August. The samples will be directed to three very common environments in the region: 1 – headquarters area of the properties; 2 – fish farming tank, about 200 m long, 10 m in its narrowest part and 60 m in its widest part; the maximum depth is about 5 m; 3 – Gallery forest that presents arboreal vegetation and a fine herbaceous extract that enters the water body. Anuran samplings were performed at night, using the time-limited search method (PLT), in each of the environments considered. The results presented in niche width calculations of the two species were estimated by the Levins Index, the result of an adaptation of the Simpson Diversity Index (Simpson Reciprocal) and niche overlap was estimated based on the PIANKA methods which provides niche overlap values between 0 and 1.

REFERENCES

- BARRET, P. G.; ODUM, E. P. Fundamentos de Ecologia: *Tradução da 5ª edição norte-americana*. Editora Cengage Learning, São Paulo, 2011.
- BEGON, M., HARPER, J.L. & TOWNSEND, C.R.. 2006. *Ecology: individuals, populations and communities*. Blackwell Science.
- COLLI, G. R. et al. Fragmentação dos ecossistemas e a biodiversidade brasileira: uma síntese. In: RAMBALDI, D. M.; OLIVEIRA, D. A. O. (Orgs.). *Fragmentação de ecossistemas: Causas, efeitos sobre a biodiversidade e recomendações de políticas públicas*. Brasília: Ministério do Meio Ambiente, Secretaria de Biodiversidade e Florestas. 2003.
- GRELLE, C. E. V. *Forest structure and vertical stratification of small mammals of a secondary Atlantic Forest, southeastern Brazil*. *Stud. Neotrop. Faunal and Environ.*, 38: p. 81-85. 2003.
- HOLBROOK, S. J. *Vegetational affinities, arboreal activity and coexistence of three species of rodents*. *J. Mammal.*, 60: p. 528-542. 1979.
- INSTITUTO RÃ-BUGIO PARA A CONSERVAÇÃO DA BIODIVERSIDADE. *Características dos anfíbios*. Disponível em: <http://www.ra-bugio.org.br>. Acesso em: 20 de janeiro de 2014.
- KINGLER, R. *The interaction of disturbances and small mammals community dynamics in a lowland forest in Belize*. *J. Anim. Ecol.*, 75: p. 1227-1238. 2006.
- LACHER, T. E.; ALHO, C. R. J. *Terrestrial small mammal richness and habitat associations in Amazon Forest-Cerrado Contact zone*. *Biotropica*, 33: p. 171-181. 2001.
- LEVINS, R. 1968. *Evolution in changing environments*. New Jersey, Princeton University Press, IX+120p.
- MAGNUSSON, W. E.; FRANCISCO A. L.; SANAIOTTI, T. M. *Home-range size and territoriality in Bolomys lasiurus (Rodentia: Muridae) in an Amazonian savanna*. *J. Trop. Ecol.*, 11: p. 179-188. 1995.
- MORIN, P.J. *Community ecology*. Blackwell Science, p. 424. 1999.
- PIANKA, E.R. 1973 The structure of lizard communities. *Annual Review of Ecology and Systematics*, Stanford, 4: 53-74.
- POUG, F. H. et al. *A vida dos vertebrados*. 3. ed. São Paulo: Atheneu, 2003.
- ROSENZWEIG, M. L.; WINAKUR, J. *Population ecology of desert rodents communities: habitats and environmental complexity*. *Ecology*, 50: p. 558-571. 1969.
- SCHOENER, T. 1970. *Nonsynchronous spatial overlap of lizards in patchy habitats*. *Ecology*, Durhan, 51 (3): 408-418.
- SCHOENER, T.W. 1974. *Resource partitioning in ecological communities*. *Science* 185: 27-38.

SOCIEDADE BRASILEIRA DE HERPETOLOGIA (SBH). Lista de espécie de anfíbios do Brasil. Disponível em: <http://www.sbherpetologia.org.br/check-list/anfibios.htm>. Acesso em: 30 de janeiro de 2014.

STORER, T. I. et al. Zoologia Geral. 6. ed. São Paulo: Campanhia Editora Nacional, 2002.

VERA Y CONDE, C. F.; ROCHA, C. F. D. *Habitat disturbance and small mammals richness and diversity in Atlantic Rainforest area in Southeastern Brazil. Braz. J. Biol.*, 66: p. 983-990. 2006.

VIEIRA, E. M. *Small mammal communities and fire in the Brazilian Cerrado. J. Zool.*, 249: p. 75-81. 1999.

WILLIAMS, S. E.; MARSH, H.; WINTER, J. *Spatial Scale, Species Diversity, and Habitat Structure: Small Mammals in Australian Tropical Rain Forest. Ecology*, 83: p. 1317-1329. 2002.