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## Biodiversity and habitat use of anurofauna in Santa Fé do Sul, northwestern region of São Paulo State, Brazil

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### Abstract

The aim of present study was to initiate a database about the frogs in eight water bodies located in an open area and pronounced dry season. For that, were determined: richness and species diversity; the temporal and spatial distribution of adults and tadpoles; the similarity on the vocalization sites and in the males advertisement calls and the relation between heterogeneity descriptors and the richness of species. The field activities were developed through september of 2003 to august of 2004, monthly during the dry season and twice a month during the rainy season. During the studied period, 20 species of anuran were recorded in the studied area, distributed in nine genus of four families: Leptodactylidae (9), Hylidae (8), Microhylidae (2) and Bufonidae (1). From these, *Bufo schneideri*, *Physalaemus centralis* and *Physalaemus fuscomaculatus* were registered only by collection of tadpoles. The registered species are known by their ample geographic distribution and for colonize altered areas in other localities. There was no correlation between species richness and structural complexity of water bodies. However, the greater richness was registered in temporary environments of long duration. The preponderant use of long duration temporary water bodies is related, probably, to the less abundance of aquatic predators on those environments than in the permanent water bodies and to the less chance of desiccation than in water bodies of short duration. The temporary puddles of unstable hydroperiod were colonized initially by leptodactylids, while the permanent or temporaries puddles of stable hydroperiod were colonized by hylids. The vocalization and reproduction activity of most species was restricted to the warm and rainy period of the year, a typical pattern of communities in the tropical seasonal regions. Five species (*Bufo schneideri*, *Hyla albopunctata*, *H. nana*, *Leptodactylus podicipinus* and *Pseudopaludicola* aff. *saltica*) vocalized during the dry and rainy seasons, but only *B. schneideri* and *H. albopunctata* reproduced during the dry season. Most of the 12 analyzed species (75%; n = 9 species) was generalist in at least one of the vocalization site variable, what is characteristic of species inhabiting unpredictable habitats and/or altered by human activities. The segregation in the vocalization sites, registered in the most of the water bodies, is resulted from the low species richness on those environments, because in the water bodies with higher richness, overlapping occurred. In the remnant water bodies the

communities seem to have been unsaturated. The higher overlap in the vocalization site among the species that vocalized based on the ground or floating in water than on those that vocalized roosted in the vegetation, probably due to the differences in the space allocation opportunities in the bi or three dimensional space use. The analysis of advertisement call features ordination evidenced higher segregation in the call among species that vocalized based on the ground or floating in the water than on those that vocalized roosted in vegetation. The climatic severity (wide and pronounced dry season, unpredictability and inconstancy of rains in the beginning of rainy season), along with the high level of natural habitat converting in cultivated areas are, probably, the factors responsible for predominance of generalist species in the habitat and microhabitat use in the studied area. The weak spatial and temporal segregation among the species due to the structural homogeneity of water bodies and the severity of dry season, was not sufficient to explicate the reproductive isolation among species. In the water bodies with higher richness there was higher overlap in the vocalization site use and, in this case, the differentiation of the advertisement calls seems to have been enough to explicate the coexistence of the species.

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**Key-words:** community ecology; anurans; niche (ecology); environmental heterogeneity; vocalization sites; northwestern region (São Paulo state)

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