

Seasonal habitat preferences and response to water quality parameters of tree frog species in a neotropical wetland

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Abstract

Wetlands are essential habitats for amphibians, but for many species, no information is available regarding how and when they make use of the different environments within the upland-wetland ecotone, nor which variables affect spatial and temporal distribution. We sought to determine the habitat preferences of two tree frog species using a capture-recapture approach in a wetland located in the Paraguayan Humid Chaco. We also evaluated the water quality and its influence on the abundance of these tree frog species. We measured 12 water quality parameters and sampled tree frogs using 168 PVC pipes in the wetland and adjacent riparian forest. Four sampling campaigns were carried out during the wet season in November 2017, January, and March 2018, and the dry season in May 2018. We captured 1578 individuals of *Scinax nasicus* and 156 individuals of *Dendropsophus nanus*. We found that terrestrial habitats adjacent to wetlands play an important role in the biology of tree frog species, especially for *S. nasicus*. This species seeks permanent shelters away from the high-water line in the floodable forest during the dry season. *D. nanus* also showed a marked seasonal pattern, using the PVC pipes mainly in the dry season, but a pattern in habitat preference could not be determined. The water quality parameters indicated a certain degree of eutrophication in the wetland and we also found high average concentrations of fecal coliforms. We found a negative correlation between the abundance of frogs and the presence of fecal coliforms during the dry season.