Some aspects of dietary ecology of a community of amphibians in the Mihinthale Sanctuary, North Central province, Sri Lanka

R.B.L.R. Sarathchandra* R.P.G. Vandercone and K.D.B. Ukuwela

Department of Biological Sciences, Rajarata University of Sri Lanka, Mihinthale

***Corresponding author: losh.ussr@gmail.com**

An ecological community is an assemblage of interacting populations of species that are interdependent and hence, understanding the conditions under which interacting species can persist is a fundamental problem in ecology. The objective of this study was to examine the trophic relationships between sympatric amphibians in the north central dry zone of Sri Lanka.

The amphibian community in and around the Mihinthale Sanctuary($8° 21' - 8° 30' N \text{ and } E$) was sampled from 6.00 pm to 2.00 am, January to August 2016 and stomach flushing was used to examine the diet of amphibians. Pairwise dietary niche overlap and niche breadth were computed using Simplified Morisot's and Levin's standardized niche breadth indices respectively.

Seventeen different prey categories were identified from six species of amphibians (*Euphlyctis cyanophlyctis, Euphlyctis hexadactylus, Fejervarya limnocharis, Duttaphrynus melanostictus, Uperedon taprobanica, Ramanella variegata*) in the community. The most frequently utilized prey category by all amphibians was hymenopterans. Other major prey categories were coleopterans, dipterans, hemipterans and spiders. Highest prey diversity was detected in *Euphlyctis cyanophlyctis,* while the lowest prey diversity was detected in *Ramanella variegata.*The average niche overlap among the species in the community was 0.392, indicating very low trophic niche overlap. The highest niche overlap was observed between *Uperedon taprobanica* and *Ramanella variegata* (0.453), while the lowest was observed between *Euphlyctis cyanophlyctis* and *Ramanella variegata* (0.281). Highest niche breadth was observed in *Euphlyctis cyanophlyctis* (0.228), while the lowest was observed in *Ramanella variegata* (0.000) indicating a high degree of specialization.

This study indicates that the level of dietary niche overlap is low in the amphibian community studied here and hence, a high degree of dietary niche partitioning. The study also reveals a trend towards dietary specialization and possibly low level of competition for food in this amphibian community. The study also provides valuable insights into the dietary ecology of these amphibians, which will be invaluable for the formulation of conservation strategies for these species.

Keywords: Niche overlap, niche breadth, resource partitioning, coexistence, sympatric