

MA40 Ecology of amphibians in Mahamavo

Amphibians play a vital role in the ecosystems where they are found. They act as ecosystem regulators, keeping invertebrate numbers in check while providing food for predators. These attributes allow for these frogs to be used as indicators of the health of the ecosystem. The ecology of a number of Madagascan amphibian species has been studied in detail however these studies have been mainly devoted to those species that are of high conservation importance. Comprehensive studies investigating the ecology of some the more common, and less threatened, species are still lacking. Much of the natural history of these species remains unknown, particularly their community structure and resource use. Nine species of amphibians are currently known from Mahamavo some of which occur in relatively high abundances. An ecological investigation of these amphibians, that exist in an area that experiences a protracted dry season and with sympatric and apparently ecologically similar species, could prove to be particularly rewarding. The potential exists for students to undertake studies investigating; ecological niche partitioning of species, bioacoustics, behaviour and activity patterns, diet variation, effects of anthropogenic disturbance on amphibian communities, and patterns of diversity.

Methodology

Data for this project will be obtained by surveying rice paddies, river beds and the ephemeral and semi permanent ponds and lakes in the vicinity of the Mariarano and Matsedroy forests. All encounters will be recorded using a GPS along with species. A variety of morphometric measurements for each individual will be taken as will sex (if possible), life stage, and the specific details of the habitat in which the animal was found and the immediate surrounding habitat. Other data to be collected will be dependent upon the interests of the student.

The collected data will be visualised and analysed utilising ArcGIS and MaxEnt software. The statistical analysis conducted will be dependent on the aim of the study and the data collected. However most analysis is usually be carried out in 'R' and/or with other standard statistical packages. All data collected will be combined with that from previous years to the existing monitoring database for future studies. This database allows for the monitoring of the species composition at each water body whereby any changes can be easily detected and investigated. This is an essential part of any long term conservation management plan.

Suggested Reading

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