MN225 Population ecology of Colubrid snakes or chameleons in Madagascar

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Over 80 species of snake and 75 species of chameleon are currently known from Madagascar, 99% of which are endemic. Taxonomically, snakes have are a relatively well studied group however in relation to their natural history the situation is almost the complete opposite. Monitoring animal populations is necessary to provide the basis for understanding changes within a population over time which in turn can have direct consequences in relation to their conservation. The study site at Mahamavo is an ideal place to study either snakes or chameleons due to the sheer abundance of animals present. The high abundance of both snakes and chameleons is likely the result of a local 'fady' that forbids the persecution of reptiles.

Option 1 – Population ecology of Colubrid snakes

A capture-mark-recapture programme will be initiated with snakes caught by hand and marked by clipping of the ventral scales with a unique code. The computer program MARK will be used to calculate the population density. Distance sampling is also another option available to use in determining the population density at the study area.
In addition to surveying, details of the habitat in which the animals are encountered will also be taken. Students will be encouraged to undertake general observational studies to document behaviours such as site fidelity/territoriality, hunting and prey choice and interactions with conspecifics. These 'opportunistic' observations have proven to themselves to be valuable sources of information during previous field seasons and could potentially reveal important natural history information on those species whose natural history is not well known.

Option 2 – Population ecology of Chameleons

The main part of the Chameleon study will be conducting a 'capture-mark-recapture' programme. This technique should reveal important results in the form of
i) an overall estimate of the population sizes of each of the two chameleon species,
ii) the population structure of the two species within the study area,
iii) habitat preference of each species and their range sizes and,
iv) an assessment of migration between different parts of forest by individual animals.
Students will also be encouraged to undertake observational studies to document chameleon behaviours such as site territoriality and hunting when and where possible.

These studies will generate valuable information that will directly relate to the conservation of these species into the future:

Suggested Reading:

Brown, W. S., and Parker, W.S. 1976. A ventral scale clipping system for permanently marking snakes (Reptilia, Serpentes). Journal of Herpetology. 10:247- 249

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