Body temperature affects nearly every aspect of a reptile's life from digesting food to successful reproduction. In order to function efficiently, reptiles need to be able to control their internal body temperature, i.e. thermoregulate, and many have a varied repertoire of behaviours that enable them to do so in the habitats in which they live. The exact temperatures required to achieve homeostasis will vary from species to species however a fine balancing act is required in all species in order to manage intrinsic physiological and extrinsic ecological needs. Some of the factors that must be taken into account are exposure to predators, the time required for adequate thermoregulation, the time required for foraging, and the need to absorb UV-B.

Ultraviolet light (UV-B) is an essential requirement for vitamin D synthesis in the skin of lizards, allowing the uptake of dietary calcium which is necessary for proper bone growth and neurological function. There are also thermal requirements to successful Vitamin D production and therefore a study of thermal ecology goes hand in hand with evaluating UV-B exposure. This project aims to investigate i) the thermal and UV-B preferences of some of the lizard species at Mahamavo and ii) how these species utilise their habitat and behavioural repertoire to optimise their exposure to the sun and UVB irradiation while thermoregulating.

**Methodology**

Data for this project will be collected by surveying existing routes for lizard species during daylight and night time hours. For each individual encountered, UV-B intensity, temperature and other habitat characteristics will be collected along with morphometric measurements of the individual animals. Two Solarmeters (models 6.2 and 6.5) will be used to measure UVB (µW/cm² UVB) and Ultraviolet index (solar intensity) respectively.

**Outputs:**

Depending on the interest of the student this project intends to;

(i) Provide a better understanding of how these species behaviourally thermoregulate, and which components of their habitat are more heavily used, (ii) apply the findings to estimate how these species might be affected by anthropogenic habitat degradation, or habitat loss due to climate change, and (iii) inform captive husbandry guidelines to better ex-situ conservation of rare and endangered species.
Suggested Reading:


