Effects of environmental stress on alpine skinks in Tasmania: an Earthwatch-funded project

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The project

We are evaluating whether potential climate change or local habitat alteration, including possible effects of persistent agricultural chemicals, may affect a lizard species' patterns of reproduction and development, or their ability to cope with short term stressors.

Sue and a volunteer locating study animals

Niveoscincus ocellatus

The animal

Our project focuses on the spotted skink, *Niveoscincus ocellatus*, an abundant, medium-sized viviparous species which inhabits relatively undisturbed habitats in the World Heritage Wilderness (cool) in Central Tasmania, but is also distributed along the east coast (warm) where populations are highly impacted by human activity. Females were pregnant and males were reproductively quiescent during the first sample period.

Earthwatch International

Earthwatch is a global organisation that "promotes sustainable conservation of our natural environments and cultural heritage by creating partnerships among scientists, the general public, educators, and businesses." Earthwatch-funded projects involve volunteers who assist scientists to carry out research projects of high conservation value.

Ashley with volunteers, setting out observation grids

Joan with volunteers observing blood sampling

The volunteers

The Earthwatch volunteers assist in numerous ways such as helping with capture and marking of animals, observing behaviours in the field, or assisting with vegetation surveys. All of these tasks can be done with minimal guidance and training in the field, which is a fundamental requirement for a successful Earthwatch project.

Preliminary results

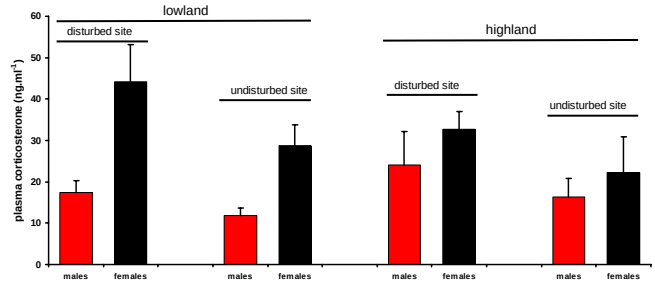
In our first field season (summer 2004), we focused on measuring plasma corticosterone (B) concentrations in male and female lizards from disturbed and undisturbed sites at the lowland (warm) and highland (cool) locations.

•A behavioural analysis will shortly be done, considering volunteers' observations of focal animal behaviours such as basking tail flicking, head tilting, feeding and home range size.

•Several exciting opportunistic observations have already redirected aspects of the behavioural observation work, including lizards feeding on particular flowers at the undisturbed lowland site.

•We will examine variations in these and many other variables, including heavy metal and pesticide loads between disturbed and undisturbed sites to characterise the impact of human disturbance on the species' ability to cope with climate change.

Plasma corticosterone concentrations in male and female lizards at disturbed and undisturbed sites



1. Plasma B concentrations were significantly higher in **females** than **males** at lowland (warm) sites (P = 0.000).
2. No other significant differences were detected.
3. These data will be correlated with behavioural observation data, and unpredictable climatic events, such as summer storms.