

RESEARCH DIRECTIONS

Energetics of anti-predator behaviour

Dr Christopher Turbill from the Hawkesbury Institute for the Environment (HIE) will be investigating the energetic consequences of anti-predator behaviour in small prey mammals. This research is being supported by The Hermon Slade Foundation. Also participating in this project is Professor Stephan Blanc from the Department of Ecology, Physiology and Ethology, University of Strasbourg, France.

'Small mammals have high metabolic rates and must forage almost constantly,' says Dr Turbill. 'This increases their vulnerability to predators. We have a dismal record of extinction and population decline among small Australian mammals, which is largely due to habitat destruction and populations of introduced predators. Most research has focused on direct effects of predation leading to mortality, yet there is an increasing realisation that the indirect effects of predation might be equally or more important to prey populations. This study will focus on an obvious gap in our knowledge of how the perceived risk of predation influences the behaviour and metabolic physiology of prey species.'

The researchers will study small mammals living in outdoor enclosures and measure their behaviour and energy levels on a daily basis when exposed to different levels of food intake, shelter, and perceived predation risk. With the use of radio-transmitters and motion detectors, the researchers will gain a detailed assessment of each individual's response to perceived predation risk. The team will use these data in models that will be able to distinguish the independent effect of predation risk on an individual prey mammal's activity.



These experiments will provide critical missing information about the physiological response of prey to predation risk. This knowledge will contribute to understanding the way in which different species are able to cope with introduced predators and lead to more effective management of this wide spread threat by land managers and conservationists.

Project Title: Energetic consequences of anti-predator behaviour in small mammal prey

Funding has been set at: \$55,500

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November 2012