Progress Report

Infectious disease has been suggested as a factor contributing to the recent 90% decline of the woylie, now critically endangered. The effects of infectious disease on woylies may be exacerbated by as yet unknown factors such as stress. This project aims to investigate how stress affects immune function and patterns of infection in the context of endangered species conservation. The hypothesis is: if stress affects immune function and patterns of infection in woylies, we expect changes in immunological variables and patterns of parasite infection with varying exposure to conservation relevant stressors. Endangered species face numerous threats that can constitute stressors that challenge an animals' physiological balance. Stressors to be investigated in this study include predators, resource availability, social interactions, population density and translocation.

Extensive field and laboratory work will be performed to investigate links between stress and disease expression in woylies in the context of their decline. Study populations include captive and free-ranging woylies at Native Animal Rescue, Karakamia Sanctuary, Whiteman Park and the Upper Warren region. Diagnostic and laboratory methods will be applied to conduct parallel evaluation of stress hormones, immune function and parasites in woylies. Data will be used to develop models to improve our understanding of how stress affects the health of endangered wildlife and potential ramifications for species conservation and management.

In the project's first year, intensive sample collection and preliminary analyses has been undertaken and the first paper accepted for publication. Fieldwork, sample collection, laboratory analyses and dissemination of information will continue with support from the Australian Academy of Science Margaret Middleton Fund, Foundation for National Parks and Wildlife and Holsworth Research Endowment.