

Progress Report STP 2014-010 (FY 2015-2016)

**Stress and disease in critically endangered
woylies (*Bettongia penicillata*)**

Animal Science

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While much is known about effects of stress on immunity and infection in domestic animals and humans, these links are rarely examined in wildlife. This is concerning because wildlife face many stressors such as habitat loss and predators. We aim to investigate effects of stress on immunity and infection in critically endangered woylies. In conjunction with DPAW and other collaborators, we conducted intensive fieldwork in sanctuaries, reserves and the wild. So far, >500 faecal samples have been analysed for stress hormones, 300 for parasite eggs and over 200 blood samples for parasite DNA. In addition, we adapted a test developed in pre-term human infants to evaluate woylie immunity. Analyses are underway to investigate how these measures vary in relation to experimental stressors, management interventions (reserve expansion and translocation) and natural disaster (bushfire). In this way, we will have a comprehensive picture of stress, immunity and infection in the context of *in situ* and *ex situ* wildlife conservation.