

Progress Report STP 2014-008 (FY 2015-2016)

Investigating the impact of polyparasitism in translocated woylies (*Bettongia penicillata*), and the effect of anti-parasite treatment on host fitness and survivability.

Animal Science

Project Core Team

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This project is currently evaluating how fauna translocations impact the transmission of parasites in woylies (*Bettongia penicillata*), and what consequences this has for translocated hosts and other cohabiting species (Brushtail possum - *Trichosurus vulpecula*; Chuditch - *Dasyurus geoffroii*). We are testing the hypothesis that fauna translocations lead to a higher diversity of parasites within the resultant host-parasite community, and thus a higher incidence of polyparasitism; which in conjunction with the disruption of established host-parasite associations, may exacerbate the negative impacts of parasites on their hosts to the detriment of translocation success. Secondly, as the effects of anti-parasite treatment in translocated hosts are relatively unknown; we are also assessing the effect of parasite removal in translocated hosts. We are testing the hypothesis that anti-parasite treatment reduces the incidence of polyparasitism, thereby improving host fitness and survivability. In June 2014, 182 woylies were translocated from Perup Sanctuary to two unfenced sites within Western Australia. In June 2015, an additional 69 woylies were translocated into Dryandra Woodland; a second spatially independent study site. Pre- and post-translocation, woylies from both the source and destination sites were measured and weighed, and pouch activity was recorded for females. Blood, ectoparasite and faecal samples were also collected for parasitological examination. In each destination site, cohabiting species were sampled to quantify parasite transmission between species post-translocation. To evaluate the effect of anti-parasite treatment, we treated half the woylies with Ivermectin prior to translocation. We have observed changes to the predominant species of *Trypanosoma* in woylies pre- and post-translocation, and that anti-parasite treatment has had an effect on both target and non-target parasites of the translocated hosts.