Progress Report

This project aims to: i) determine if a reliable estimate of quokka abundance can be obtained from indicators of activity including scats, tracks and runnels; ii) identify the preferred habitat of quokka in southern forests; iii) determine the mobility and activity patterns of quokka in the southern forests; iv) identify the influence of fire on distribution and abundance of quokka in the southern forests; and v) in collaboration with others determine whether the sub-populations constitute a functional meta-population. Occupancy models were generated from presence/absence data and have identified the density of the near-surface fuel layer, vegetation structure and proximity to a different fuel age as the subset of variables that best predict the probability of occupancy of habitat by quokka. Associated monitoring by cage and camera trapping indicates that feral cats were responsible for almost complete recruitment failure over a four year period due to predation of young immediately after pouch emergence.

Home range and movement patterns have been investigated using 29 collared quokkas and results indicate a mean home range of 71ha (core range 18ha) with movements averaging between 0.4 and 2.4km/night. Largest movements were recorded in summer and autumn and were linked to requirements to forage further afield for water and food during hot dry conditions. Collared animals spent 40% of their time in riparian habitat within a stable home range and emigrating individuals travelled distances of up to 14.2km, using riparian vegetation as corridors. Forest areas with fire treatment and comparable unburnt sites have been examined for quokka abundance and habitat quality pre- and post-fire to determine the effect of fire on habitat use and the time taken for habitat to become re-colonised post-fire. DNA has been provided to staff at Murdoch University, who will be assisting with DNA processing. A paper presenting an effective and efficient survey method for quokka has been published.