Supporting the recovery of the world's rarest marsupial, Gilbert's potoroo, with science: past and current research and future directions

Tony Friend

Albany Research, Science Division, DEC, 120 Albany Hwy, Albany WA 6330, Tony.Friend@dec.wa.gov.au

After the rediscovery in 1994 of Gilbert's potoroo, existing in a single population of less than 40 animals, a program of research to support recovery commenced, with studies conducted in parallel with recovery actions. Intensive studies of home range, spatial organisation, habitat usage, population dynamics and reproduction in the wild provided a strong knowledge base to assist surveys for other populations and to inform future translocation projects.

Initially, the best hope of recovery was thought to be through orthodox captive husbandry. Collaborative research with universities investigated the use of both remote video monitoring and faecal hormone analysis to monitor oestrus and mating in captive potoroos, to allow better breeding management. However the species did not breed well in captivity. Research programs were then implemented: 1) to develop improved captive husbandry methods, with a diet based on nutritional analysis of hypogeal fungi, 2) to develop artificial insemination methods (with Perth Zoo) and 3) to evaluate cross-fostering techniques to increase production and survival of Gilbert's potoroo young (with Zoos South Australia).

At the same time, a trial translocation of wild potoroos to Bald Island was carried out, structured as a research project to maximise the acquisition from the trial of critical information on movements, home range, habitat usage and diet. A full translocation was carried out following the positive results of the trial, with a self-sustaining population as the outcome.

Current research uses the release of Bald Island potoroos into a 380 ha enclosure on the mainland with several different vegetation associations as a means of assessing the breadth of habitat utilisation of which this species is capable. A parallel honours project is assessing the value of fungal diet studies of co-habiting species (bush rats, quendas and quokkas) in predicting food resource availability for Gilbert's potoroos. This technique may assist the selection of suitable habitat for Gilbert's potoroos in higher rainfall zones to allow planning for future artificial migration episodes in a scenario of climate change

Threatened Species Research Forum

Western Australian Ecology Centre

9th July 2010

A Review of WA Government Research into Threatened Species