

# It's all in the genes: quenda genetic diversity in the spotlight

By Kym Ottewell

Unlike their endangered eastern states counterparts, the Western Australian sub-species of the quenda or southern brown bandicoot, *Isoodon obesulus* ssp. *fusciventer* is currently listed as a Priority 5 (conservation dependent) species. Quenda are under pressure from ongoing habitat clearance, habitat modification from altered fire regimes, and predation by introduced animals (including cats, foxes and dogs). They prefer dense, scrubby habitat with low ground cover, particularly along watercourses or around wetlands. On the Swan Coastal Plain this habitat is becoming increasingly fragmented through the expansion and intensification of urban development. Fragmented populations may be smaller in size and may become disconnected from other populations, leading to increased inbreeding and loss



**Above** Quenda in a back yard at Roleystone. Photo – Kym Ottewell

of genetic diversity over time. These factors may mean that populations are less adaptable to future changes in environmental conditions or may be more susceptible to novel disease threats. The facial tumor disease currently impacting Tasmanian devils is an example of how a species with limited genetic diversity may be devastated by exposure to a novel disease.

DPaW's Science Division is currently undertaking a genetic study to investigate the patterns of genetic diversity and gene flow among populations of quenda on the Swan Coastal Plain which is highly fragmented, and in the Perth Hills where it is less fragmented. A study is also planned to investigate the genetic relationships

of quenda throughout its range - from Yanchep, through the Perth metropolitan area and Perth Hills, to the karri and jarrah forests and the south-west coastal areas. This will help understand whether quenda comprise a single or multiple 'management units'.

## Can you help?

It is unfortunate that quenda are often sighted as roadkill, but their deaths need not be in vain. When roadkill, or other deceased animals are relatively fresh (2-3 days), their DNA can still be used for scientific study. We are asking for the help of the public in taking tissue samples (e.g. a small snippet of ear tissue) to help with

our study. If you regularly see roadkill Quenda or may have other contact with deceased animals (e.g. as a wildlife carer) and believe you can assist, please contact Kym Ottewell (details below) for a collecting kit. Otherwise a small sample can be taken, along with location details, and placed in the freezer until a collecting kit can be sent. We are currently interested in receiving samples from the Perth Hills or south-west coast areas as these are currently under-sampled.

For more information please contact Kym Ottewell: phone 08 9219 9086 or email [kym.ottewell@dpaw.wa.gov.au](mailto:kym.ottewell@dpaw.wa.gov.au)