The Brush-tailed Phascogale Coordinating Group (BTPCG) has been meeting and coordinating the implementation of the Brush-tailed Phascogale FFG Act Action Statement since 1997. The BTPCG is not a recovery team per se, but more of a working group that coordinates management actions that occur within a variety of woodland systems across the State.

Using Brush-tailed Phascogale as the focus species has the effect of engaging with many different agencies, community groups and non-government organisations. Land managers, involved in the annual monitoring, are able to apply the principles and understandings learnt from their time involved with the program to their own particular circumstances.

The issues encountered during the program contribute to a better understanding of the dynamics of a woodland ecosystem and an improved, more holistic approach to management decisions across both the private and public land estate. The long-term monitoring data have been analysed and published in an international journal.


Genetic Analysis of Brush-tailed Phascogale (Phascogale tapoatafa) in Victoria

Dr Andrea Taylor, Monash University, June 2010

Genetic samples were collected by the Brush-tailed Phascogale Coordinating Group, and analysed by Dr. Andrea Taylor from Monash University.

“Management units” or MUs, based on analysis of 6 microsatellite loci, were identified from potential locations of barriers in the landscape that might be preventing gene flow and contributing to differentiation among these MUs.

Objectives
1. Define regional populations among all sampled individuals.
2. Determine changes in genetic structure between sampling periods.
3. Determine temporal changes in genetic diversity for locations where sample sizes permit.

Figure 1: (Below) Victorian Phascogale tapoatafa sample locations, pooled across 2000-2009. Locations indicated with smaller lettering had only one or two samples, while sample sizes from other locations.

Figure 2: (Right) ‘STRUCTURE plots’ based on microsatellite analysis of 301 Victorian Phascogale tapoatafa. Colours represent each of the 6 genetic clusters identified among the samples on the basis of minimizing genetic disequilibrium. Each vertical bar represents a single individual and the colours indicate the proportional ancestry of that individual’s genotype to each cluster. Genetic similarity between individuals is indicated by colour-sharing, and implies connectivity and gene flow between the relevant geographic locations. Population identifiers are as follows: 1 Aarat; 2 Mt Cole; 3 Clunes; 4 Meredith; 5 Hepburn; 6 Tootomoro; 7 Mallien; 8 Kinnilong; 9 Mandurang; 10 Kinglake; 11 Warrandyte; 12 Trawool; 13 Taggerty; 14 Highlands; 15 Strathbogie; 16 Euroa; 17 Reef Hills; 18 Everton; 19 Beechworth; 20 Mt Pilot.