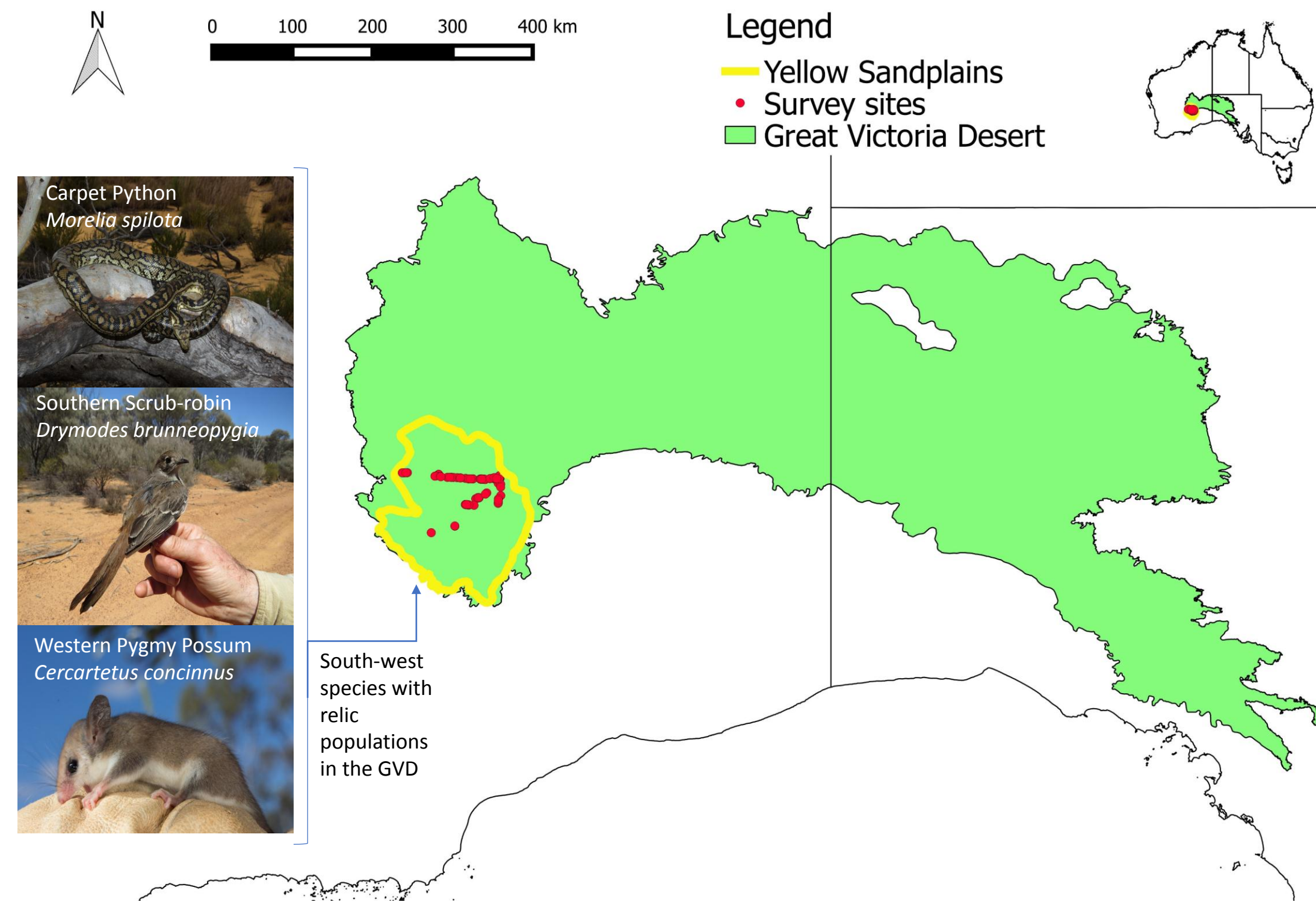
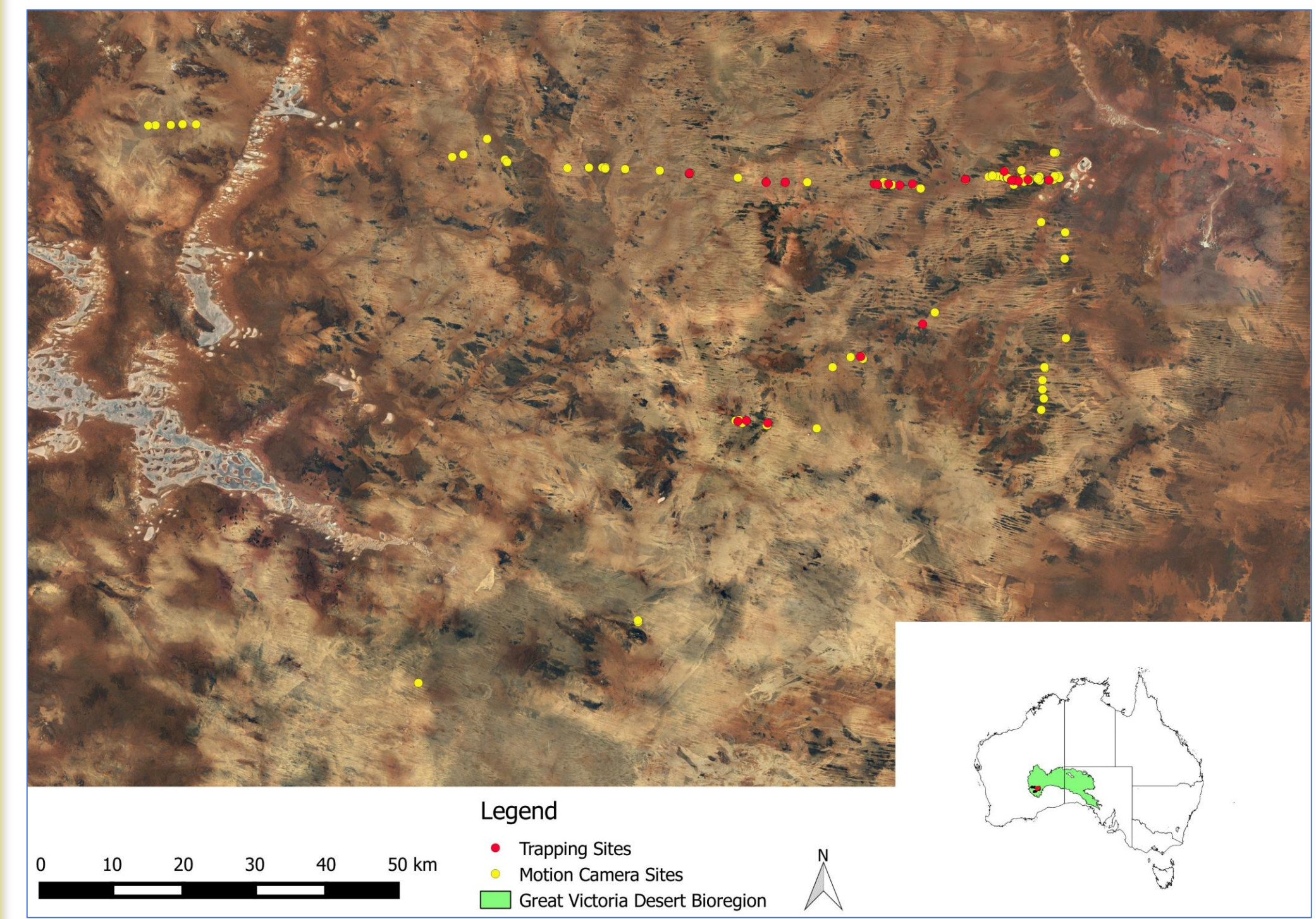


Yellow Sandplain Mammals of the Great Victoria Desert

Jeff Turpin, Jo Riley and Ray Lloyd

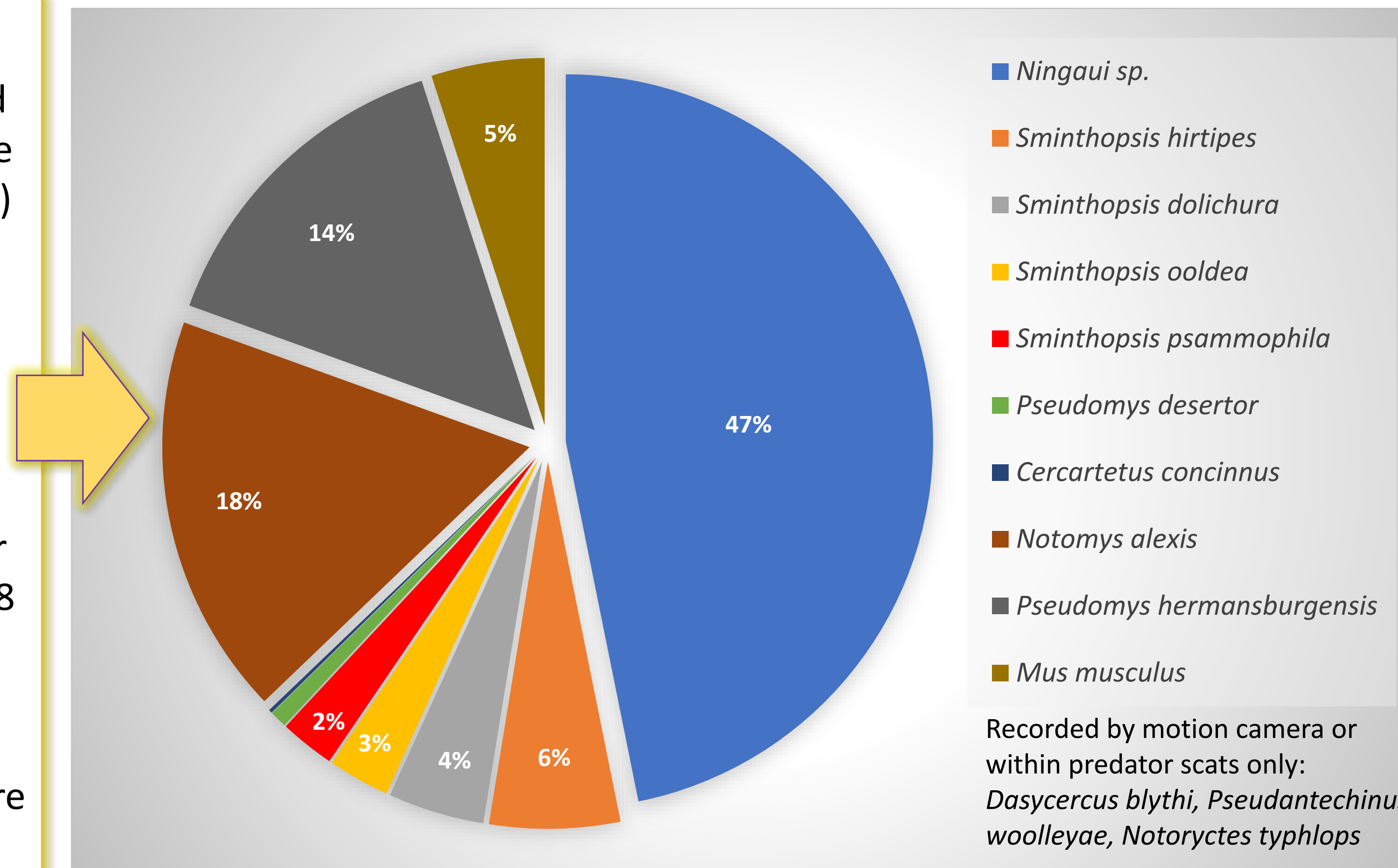


- The Great Victoria Desert is Australia's largest desert but is remote and the region's fauna is poorly sampled and little understood
- A series of uniquely yellow dune-fields and elevated sandplains about the desert's south-west fringe on a biogeographic interzone
- They support a diverse assemblage of plants and animals, containing a unique mix of species from the temperate south-west and arid interior
- Atypical desert fauna occur at the arid extreme of their range, in small, restricted populations.
- Over a decade (2007 – 2017) we surveyed the region's fauna using a range of techniques (20 trapping sites, 100+ Motion Camera Sites, predator scat analysis, trace searches)



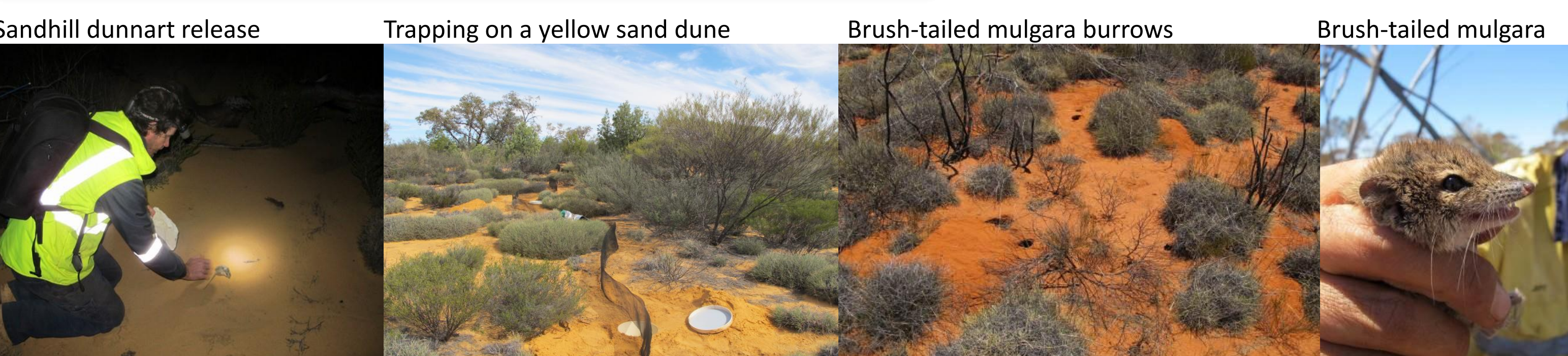
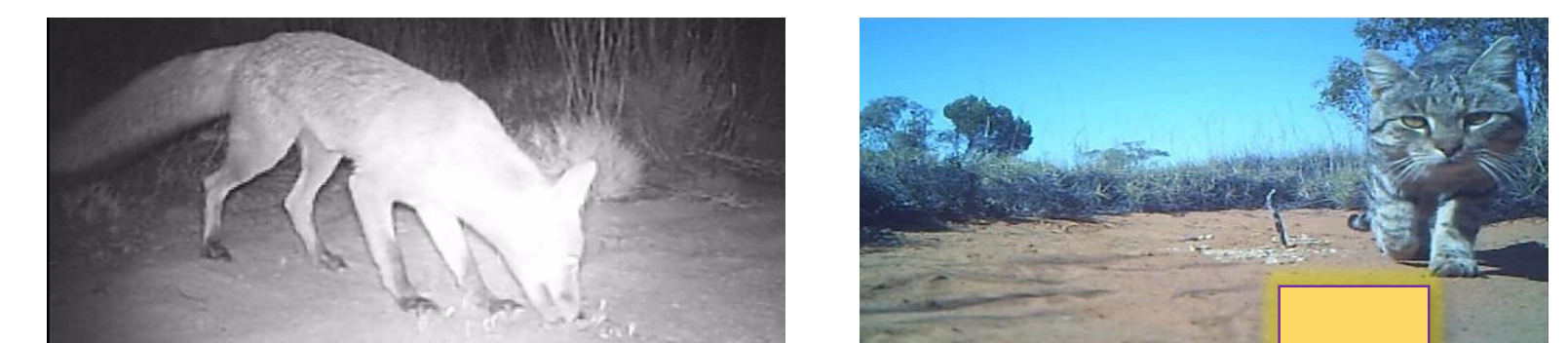
MAMMAL ASSEMBLAGE

- 14 small (<200g), ground dwelling mammals recorded via trapping (12 species), cameras (11), trace evidence (6) and the analysis of feral cat, fox and dingo scats (7)
- Assemblage dominated by widespread, arid species but also included outlying bassian taxa reflecting the areas location on a biogeographic interzone
- 3 taxa accounted for 80% of captures (*Ningai* sp., *Notomys alexis*, *Pseudomys hermannsburgensis*)
- 3 species rarely detected (*D. blythi* and *S. psammophila*: rarely recorded via trapping, camera or predator scats; *C. concinnus*: trapped once over 11028 trap nights) suggesting a sparse regional distribution
- Unlike most Dasyurids, captures of the Ningai fluctuated dramatically within / between sampling
- Assemblage variations between sampling periods were attributable to temperature, rainfall and fire



FERAL PREDATORS

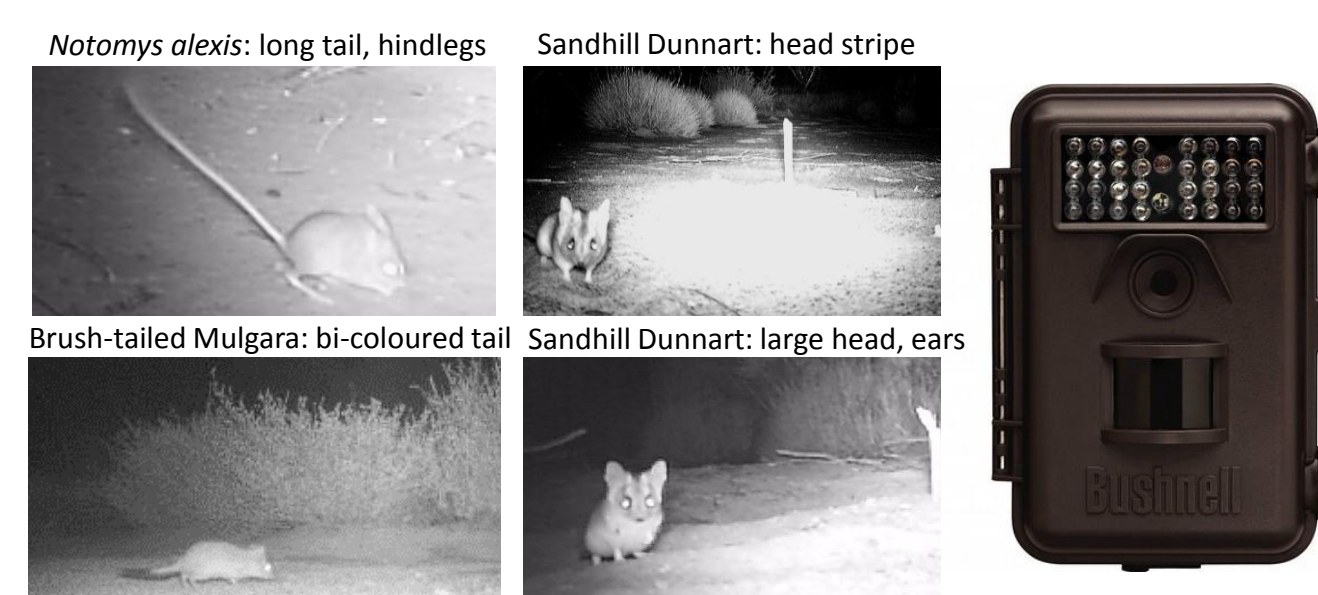
- Feral cat, fox and dingo are abundant across the GVD
- Scat analysis (2014 – 2017) revealed the feral cat and fox predate a wide range of small mammals including the Endangered Sandhill Dunnart (*S. psammophila*), the uncommon Brush-tailed Mulgara (*D. blythi*) and the cryptic Southern Marsupial Mole (*Notoryctes typhlops*)
- Dingo's diet was dominated by larger mammals (the macropods *M. rufus*, *M. robustus* and *M. fuliginosus*) and invertebrates.
- As the dingo suppresses the predation pressure (of feral cats and foxes) conservation measures in the Great Victoria Desert should allow for the Dingos' persistence



MOTION CAMERAS

Significantly boosted detection rates of cryptic species:

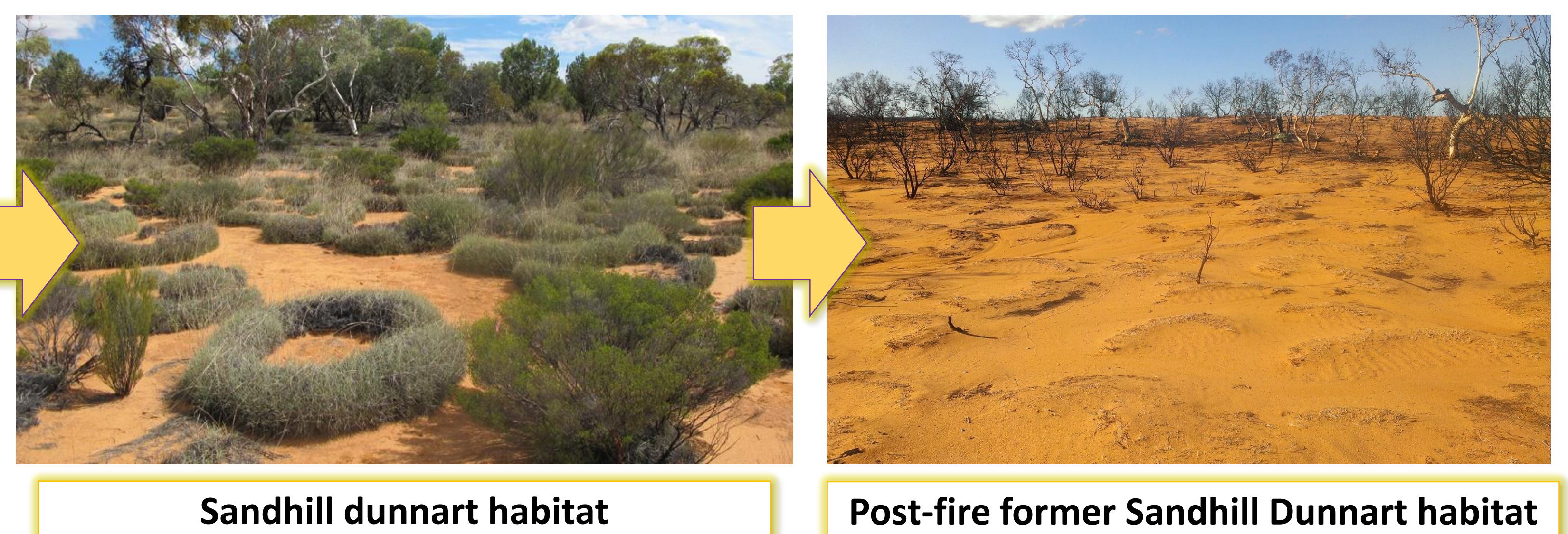
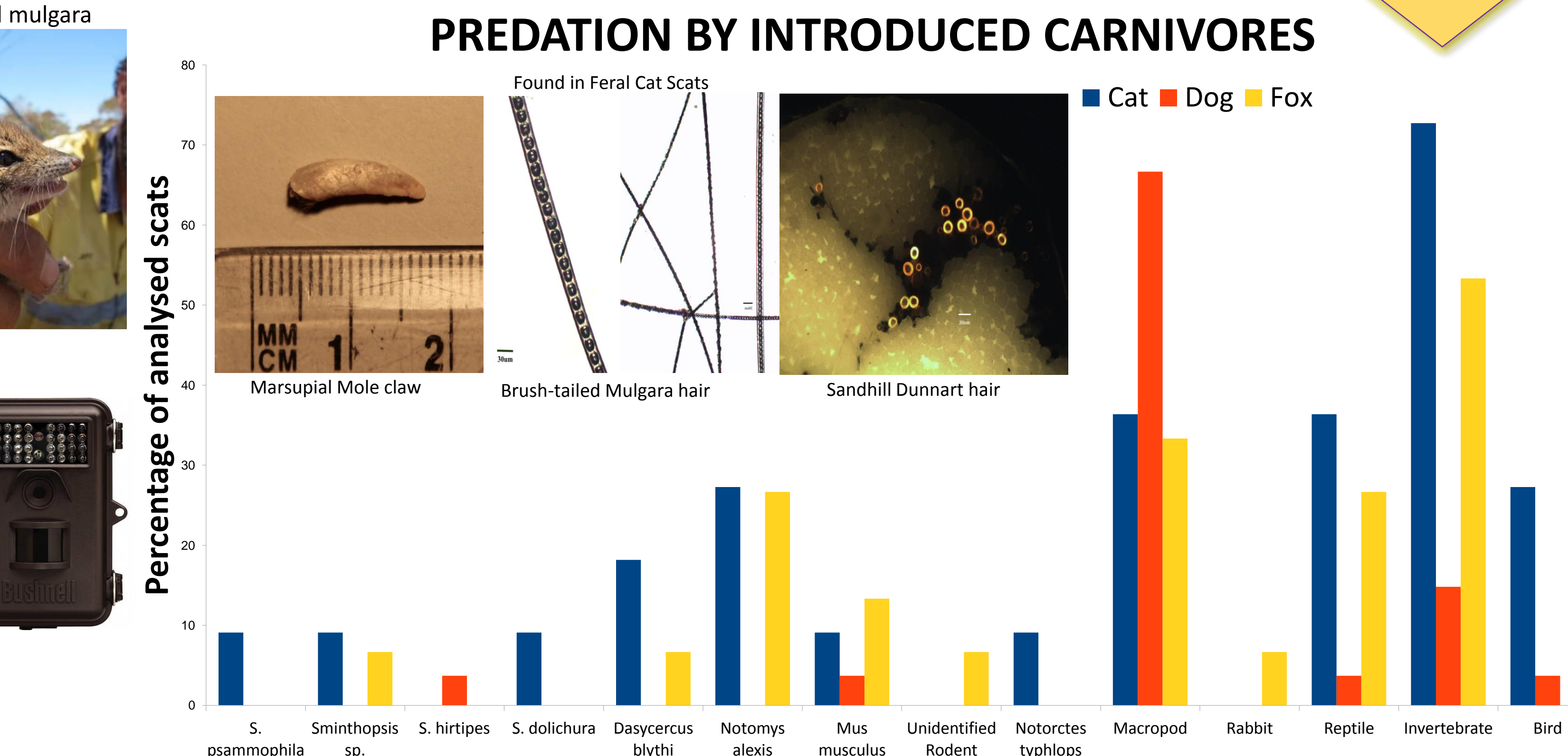
- D. blythi*: large, bi-coloured tail with terminal brush
- S. psammophila*: large prominent head with distinctive stripe, large ears and distinctive gait.
- P. woolleyae*: large size, short, swollen tail.



FIRE – A MAJOR THREAT

Hot summer fires burn large swathes of habitat, fragmenting several specialised species which favour long-unburnt habitats (develops over many years in the absence of fire) and occur in the region at the arid limit of their range:

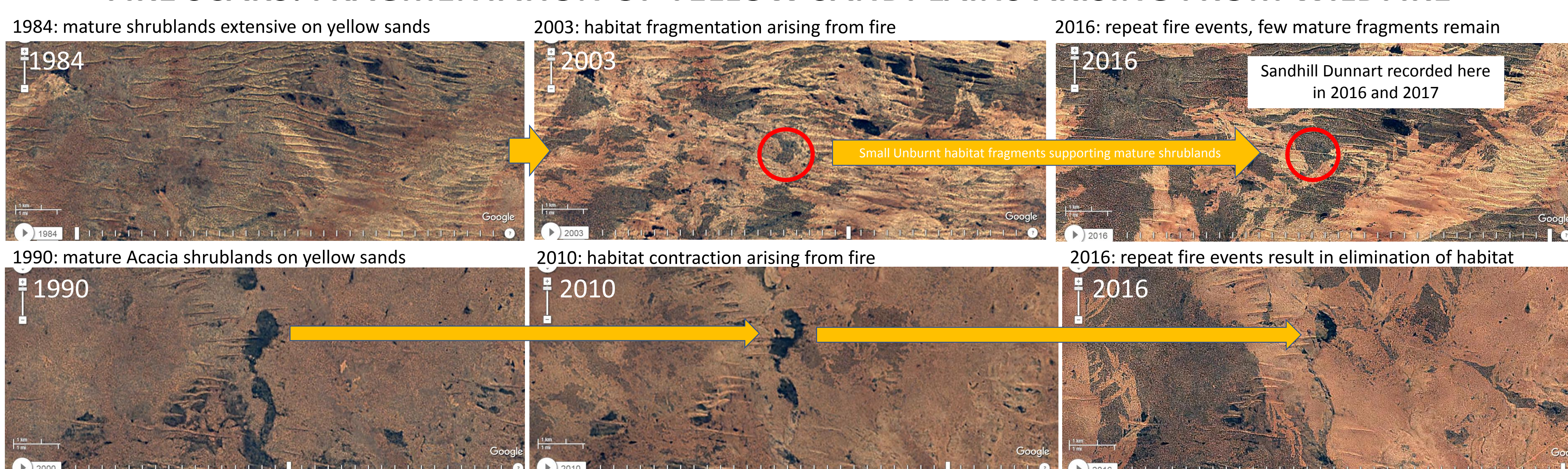
- Sminthopsis psammophila*: inhabits mature hummock grasslands with diverse shrub layers;
- Cercartetus concinnus* inhabits mature Eucalypt woodland with tree hollows;
- Also birds (*Leipoa ocellata* and *Drymodes brunneopygia*) and reptiles (*Morelia spilota*);
- Across our study area, the dune dominated sandplains support a fire-induced mosaic of vegetation, dominated by recently burnt or regenerating vegetation, fragmenting smaller patches of much longer-unburnt vegetation;
- Due to the region's ongoing and destructive fire regime, sedentary, restricted species with limited capacity for dispersal are at risk of local extinction;
- As the feral cat is a highly effective predator in open and recently burnt habitats, fire and predation are two complex and interrelated processes impacting the region's fauna.



Sandhill dunnart habitat

Post-fire former Sandhill Dunnart habitat

FIRE SCARS: FRAGMENTATION OF YELLOW SANDPLAINS ARISING FROM WILDFIRE



FUTURE WORKS & FURTHER INFORMATION

- Biannual fauna monitoring and GPS tracking (by J Riley) of small mammals, collection and analysis of feral scats
- Fire-scar mapping with the GVD Biodiversity Trust
- CONTACT: jeff.m.turpin@gmail.com
- <http://www.publish.csiro.au/PC/PC16019>

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