

# Conservation Ecology of Sharman's Rock Wallaby

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# Sharman's rock wallaby, *Petrogale sharmani*

- “Vulnerable” in Queensland
- Tiny geographic range
  - North Queensland tropical woodlands
  - Hoop pine growing on rock
  - 20 known colonies; 800-1000 individuals



# Sharman's rock wallaby



- Poor understanding of distribution and biology
- 4kg
- Invasive predator threats e.g. cats?
- Tropical mammal decline

# Research questions

- Australia's northern mammal decline
  - Recent decline of tropical mammals: fire-prone habitats
  - Interaction: fire and invasive predators/weeds
  - Protective function of rocky outcrops/small fires
- Collaboration between UQ and Australian Wildlife Conservancy
- Key questions
  - Distribution and demography
  - Effects of fire regime and invasive species
  - Management strategies

# Mount Zero Taravale

- Australian Wildlife Conservancy
- 80km north-west of Townsville
  - 73 ecosystems; 84 mammal species
- Home to 80% of known *P. sharmani* colonies



# Species distribution

- Survey Mt Zero Taravale/neighbouring properties
- Distribution and range limits in relation to topography and habitat features
- Boundary with neighbouring species – genetic tests
- Live trapping – folding cage traps
- Camera trapping
- Scats from rock ledges - DNA analysis



# Fire history and management

- How is distribution associated with fire history?
  - Mosaic of fire scars
- Mark-recapture population studies
  - Varying fire schedules
  - Birth/death rates
  - Survival of adults and juveniles



# Individual movements

- Habitat use and home range – topography and fire history
  - How far from outcrops?
  - Exposure to threats
- GPS data
- Camera trapping
- Extent and location of predation
  - Collection of feral dog, cat and fox scats
  - Gut contents from carcasses



# Research outcomes

- Distribution/demography
  - Improve understanding of conservation status
- Effects of varying fire regimes and introduced predators
  - Key threats; relative importance of threats
- Management strategies
  - Fire regimes
  - Predator control e.g. baiting
  - Preventing habitat degradation e.g. grazing off-reserve
- Australian tropical mammal declines - role of topography and fire regimes

# Acknowledgments

- Funding

- Queensland Government (Everyone's Environment research grant)
- Australian Wildlife Conservancy

- Pictures

- <http://www.australianwildlife.org/wildlife/sharmans-rock-wallaby.aspx> (Slide 2)
- <https://www.flickr.com/photos/leandri/530071428/> (Slide 3)
- <http://www.australianwildlife.org/sanctuaries/mount-zero-taravale-sanctuary.aspx> (Slide 5)
- <http://www.australianwildlife.org/field-updates/2014/ground-burning-operations-commence-at-mount-zero-taravale.aspx> (Slide 7)