



University of  
South Australia



Barbara Hardy  
Institute

Gunnar Keppel

## Research Profile

### Research Area Specialisation

Biogeography, climate change, community ecology, conservation, islands, evolution, plant biology, population genetics and the interfaces of these disciplines.

### Contributing to a better and sustainable environment

Climate change is one of the major challenges to the persistence of biodiversity. Research on climate change refugia will identify locations that have the greatest potential of facilitating *in-situ* survival of biodiversity under climate change. Gunnar's research is contributing toward the identification and protection of such refugia.

Three of the 25 global biodiversity hotspots are located in the South Pacific, indicating a unique biota under high threat of extinction. Gunnar's research in the South Pacific contributes essential environmental information about the conservation, ecology and taxonomy of the biota in this region and in Mediterranean Australia. Gunnar was recently appointed the principal co-ordinator of the Pacific-Asia Biodiversity (PABITRA) program, which focusses on improving our understanding of the ecology and conservation of Pacific Island ecosystems through local capacity building and high-quality research.

### Research Abstract

Gunnar's research focus is concentrated in the fields of biodiversity conservation, climate change refugia and island biogeography. He is collaborating with Professor Hugh Possingham and Professor Thomas W. Gillespie to develop a new approach for the Theory of Island Biogeography.



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Great Research  
into Sustainability

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## People

- Our researchers are scientists, engineers and social scientists
- We work collaboratively on real-world issues
- Over 100 researchers and 130 research students

## Projects

- Multidisciplinary projects focused on sustainability
- We work in partnership with government, industry and academia
- Extensive testing and evaluation services and consultancy expertise
- Our work is underpinned by community participation and education

His research on identifying and quantifying the quality of refugia under anthropogenic climate change was initiated during a postdoctoral fellowship with Dr Grant Wardell-Johnson from that looked at granite outcrops as climate change refugia. This project has now developed into developing theoretical frameworks for the identification and effective conservation of potential climate change refugia.

In the South Pacific, Gunnar is leading a project on the conservation of rare and iconic Fijian tree species, working with a local Non-governmental organization 'NatureFiji-MareqetiViti', Dr Peter Prentis and Professor Bob Pressey. He is also collaborating with Thomas W. Gillespie on a project about the conservation of Pacific tropical dry forest and with Professor Janet Franklin and Dr Ted Webb to investigate the ecology and biogeography of lowland tropical rainforests in Western Polynesia.

In South Australia, Gunnar is heading a project that investigates the inter-seasonal variation in the diet of the southern hairy-nosed wombat. This project involves Joshua Allen (honours student), Dr Hugh Cross and Noel Riessen, in collaboration with the Australian Wildlife Conservancy.

## Research areas of interest

- Climate change refugia
- Island biogeography
- Biodiversity conservation

## Barbara Hardy Institute

The Barbara Hardy Institute provides the opportunity to meet researchers from a broad range of disciplines interested in sustainability, which opens the doors for collaboration and partnerships in new projects.

## Keywords to describe Gunnar's research

- Climate change refugia
- Island biogeography
- Biodiversity conservation
- Community ecology



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