



About us

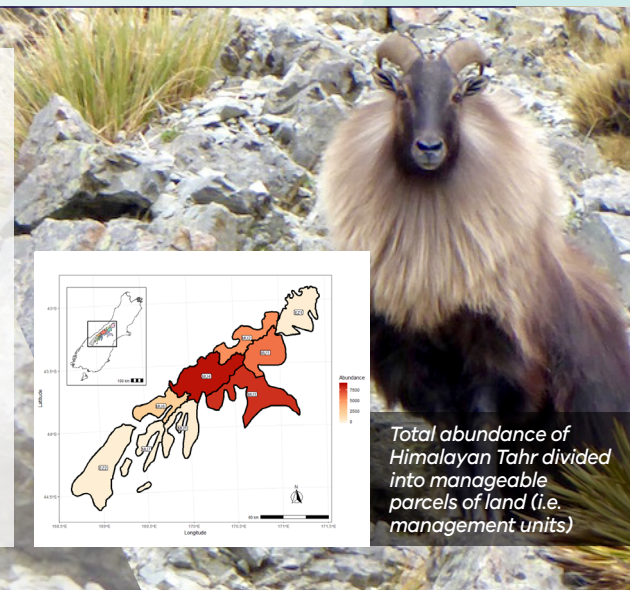
The Arthur Rylah Institute for Environmental Research's terrestrial ecology teams produce high-quality science to support evidence based decision-making by governments and communities.

Our growing number of scientists have extensive expertise in fauna and flora research, ecological modelling and data interpretation. We work collaboratively with national, state and local agencies, universities and the community.

ARI provides international expertise

In New Zealand, introduced Himalayan Tahr are having serious impacts on alpine biodiversity. ARI's Dave Ramsey has developed population estimates of the animals to enable the New Zealand Department of Conservation to implement a management strategy to reduce the numbers of this introduced species and support key affected areas.

The population estimates are based on aerial survey data. They provide timely and cost-effective information on abundance that can be used to predict population estimates for 'management units' across the Tahr's New Zealand range in the southern Alps.



Influencing Change

ARI team wins South Australia's Asia-Pacific Excellence Award

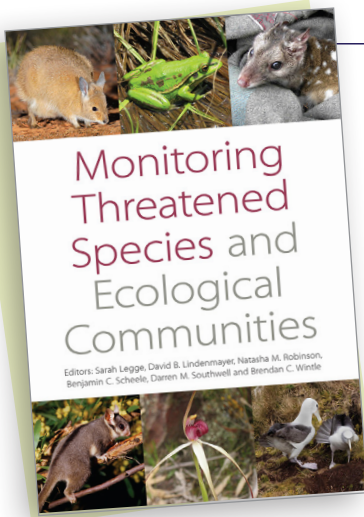
Matt White, Graeme Newell and Peter Griffioen developed a spatial mapping tool for a project that has won the **Asia-Pacific Spatial Excellence Award (APSEA)** in the SA Environment and Sustainability Category. The tool was commended for its scope and quality and will now be judged at the National level of the APSEA awards.

The tool produces a time series (1987-2015 in 5-year increments) of native vegetation extent and land cover across South Australia (the tool is a precursor to the Victorian Native Vegetation Extent time series; see **Terrestrial Quarterly Update December 2018**).

The tool can be used to inform progress towards native vegetation targets with much more accuracy than was possible with previous tools.



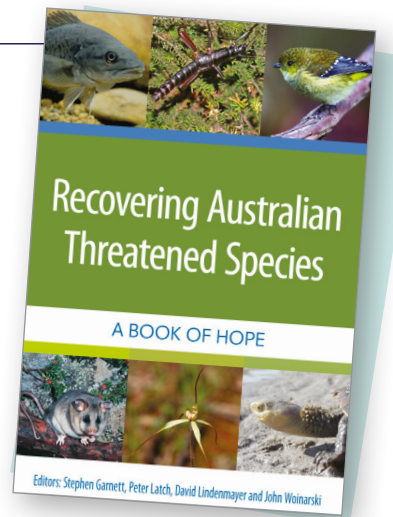
Graphical interpretation of the land cover time series model



Danny Rogers contributed to Chapter 11: 'Shorebird monitoring in Australia: a successful long-term collaboration among citizen scientists, governments and researchers'

2018 Whitley commendations for Conservation Zoology

Danny Rogers and Peter Menkhorst were contributing authors on two publications that shared the Commendation for Conservation Biology at the recent Whitley Awards Ceremony held by the Royal Zoological Society of New South Wales. Congratulations Danny and Peter.



Peter Menkhorst contributed to Chapter 24 'Twenty-five years of Helmeted Honeyeater conservation: a government-community partnership poised for recovery success'

THE ROYAL SOCIETY OF VICTORIA:

Informing Regional Forest Agreements

Lindy Lumsden ('Landscape scale species surveys') and Graeme Newell ('Habitat distribution modelling') presented at the first of a series of public lectures hosted by the Royal Society of Victoria. These lectures provided insights from scientific experts who are involved in the assessment of Victoria's public forest values to inform the modernisation of Victoria's Regional Forest Agreements.

The presentations centred around the use of science and data to better understand the forest values of Victoria, and the systems and processes which underpin forest planning and decision making.

Influencing Change

Protecting gains provided by environmental water

Alan Robley and Luke Woodford from ARI's Predator Management Program assessed whether the benefits of environmental watering for freshwater turtles are offset by opportunistic introduced predators like foxes and cats. They also explored the likely outcomes of various alternative management strategies for controlling introduced predators.

This project builds on a body of work at Hattah-Kulkyne National Park that is identifying the most effective method of broad-scale control of introduced predators in a landscape receiving environmental watering.



Fox at a bait station



A threatened species (*Lawrenca spicata*) identified by Geoff Sutter (pictured)



Threatened bird species (Bar-tailed Godwit and Little Tern) are important for Ramsar classification

Extending Ramsar wetland boundaries

A team of staff from the Community Ecology section is assessing wetland areas to determine if Ramsar boundaries could be extended across the **Bellarine Peninsula and Port Phillip Bay**.

This project is monitoring both waterbirds and wetland vegetation and is generating new records of threatened species.

Potential extensions to the boundaries of the Ramsar site will further protect important fauna and flora of the region (including international migratory shorebirds, Orange-bellied Parrots and Temperate Coastal Saltmarsh), while enhancing the area and connectivity of the Ramsar wetland.

Use of nest boxes in Victoria

Phoebe Macak has **documented the use of nest boxes in Victoria** by collating information from a survey of 98 nest box programs across Victoria, incorporating almost 10,000 nest boxes.

This survey helps us understand the number and distribution of nest boxes in Victoria, which species are using them, and whether monitoring data are being collected.

Many mammals and birds were documented to be using the nest boxes, with most boxes monitored at least once a year. The most common native animals found were Sugar Gliders, Common Brushtail Possums, Brush-tailed Phascogale, Common Ringtail Possums, Agile/Yellow-footed Antechinus, Crimson/Eastern Rosellas, microbats and the Australian Owlet-nightjar.

ari.vic.gov.au



Sugar Gliders are one of the most common native mammals found in nest boxes in Victoria



A microbat nest box

Influencing Change

Feature publications

Koerner, S.E., Smith, M.D., Burkepille, D.E., Hanan, N.P., Avolio, M.L., Collins, S.L., Knapp, A.K., Lemoine, N.P., Forrester, E.J., Eby, S., Thompson, D.I., **Moxham, C.**, and Zelikova, T.J. 2018. Change in dominance determines herbivore effects on plant biodiversity. *Nature Ecology & Evolution*, 2(12), p.1925.

<https://doi.org/10.1038/s41559-018-0696-y>

Pakeman, R.J., Bates, A., Corlett, R., Cumming, G.S., Johns, D., Koh, L.P., Loyola, R., Maas, B., Pejchar, L., Primack, R. and **Regan, T.J.** 2019. Fifty years of biological conservation. *Biological Conservation*, 230, p.A1-A4.

<https://doi.org/10.1016/j.biocon.2018.12.005>

Liu, C., Newell, G., White, M. and Bennett, A.F. 2018. Identifying wildlife corridors for the restoration of regional habitat connectivity: A multispecies approach and comparison of resistance surfaces. *PLoS one*, 13(11), p.e0206071.

<https://doi.org/10.1371/journal.pone.0206071>

Griffiths, S.R., **Lumsden L.F.**, Bender, R., Irvine, R., Godinho, L.N., Visintin, C., Eastick, D.L., Robert, K.A. and Lentini, P.E. 2018. Long-term monitoring suggests bat boxes may alter local bat community structure, *Australian Mammalogy* (early online).

<https://doi.org/10.1071/AM18026>

Nimmo, D.G., Avitabile, S., Banks, S.C., Bliege Bird, R., Callister, K., Clarke, M.F., Dickman, C.R., Doherty, T.S., Driscoll, D.A., Greenville, A.C., Haslem, A., Kelly, L.T., **Kenny, S.A.**, , **White, W.** and **Bennett, A.F.** 2018. Animal movements in fire-prone landscapes. *Biological Reviews* (early online).

<https://doi.org/10.1111/brv.12486>

Forsyth, D.M., Latham, A.D.M., Davis, N.E., Caley, P., Letnic, M., **Moloney, P.D.**, **Woodford, L.P.** and Woolnough, A.P. 2019. Interactions between dingoes and introduced wild ungulates: concepts, evidence and knowledge gaps. *Australian Mammalogy*, 41(1), p.12-26.

<https://doi.org/10.1071/am17042>

Knowledge transfer: some recent presentations and workshops by our ARI Terrestrial Team

Radio National: 1-hour conversation about owls (Peter Menkhorst)

Australia Society of Herpetologists Conference: Fragmentation and disturbance drive occurrence and persistence of grassland herpetofauna (Michael Scroggie)

Protect, Respect and Reconnect Grassland Conference: Native grasslands near Melbourne and the Melbourne Strategic Assessment (Steve Sinclair)

Birdlife Australia: Keynote address: Shorebirds of Roebuck Bay (Danny Rogers)

Zoos Victoria: Wicked problems in frog conservation (Nick Clemann)

Australian Naturalists Network: Hopping down the Main Street (Jemma Cripps)

Southern Peninsula Indigenous Flora and Fauna Association: Looking for nest boxes in Victoria (Phoebe Macak)

Port Phillip DELWP: Helping fire planning by measuring *Banksia* reproduction (Annette Muir)

Victorian Biodiversity Conference

Matt White (Plenary) • Khorloo Batpurev • Jemma Cripps • Louise Durkin

link: VicBioCon program



Ecological Society of Australia Conference

Steve Sinclair • Matt Bruce • Tracey Regan
Graeme Newell • Luke Collins • Jim Thompson
Peter Griffioen

link: ESA program



Further info: research.ari@delwp.vic.gov.au