



Australian Network for
Plant Conservation Inc



APCC 12

12th Australasian Plant
Conservation Conference 2018



CENTRE FOR
AUSTRALIAN
NATIONAL
BIODIVERSITY
RESEARCH



12th Australasian Plant Conservation Conference

'Moving house – a new age for plant translocation and restoration'

CONFERENCE PROGRAM

Sunday 11 November – Thursday 15 November
CSIRO Discovery Centre



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Welcome from the Australian Network for Plant Conservation Inc.

Welcome to the Australian Network for Plant Conservation (ANPC)'s 12th Australasian Plant Conservation Conference 2018.

The ANPC has been promoting and working for plant conservation in Australia for more than 25 years since its inception as a not-for-profit non-government organisation in 1991. Our mission continues to be *"To promote and develop plant conservation in Australia"*. To do this we provide a range of forums for the exchange of information and ideas to connect plant conservation scientists, practitioners and policy makers. Our quarterly bulletin *Australasian Plant Conservation* and the *ANPC News* Newsletter disseminate plant-related research, activities, projects and other information to a broad audience. We also hold plant conservation workshops and promote an ecological focus in on-ground conservation, rehabilitation and management of remnant vegetation, threatened plants and ecological communities.

The Australasian Plant Conservation Conference (APCC) is our flagship biennial conference bringing together researchers, land holders, NRM and NGO groups, practitioners and policy makers from around Australia to focus on a key topic for plant conservation. The theme for this conference is *"Moving house – a new age for plant translocation and restoration"* which has been developed to coincide with the release of the **Third edition of the ANPC's Threatened Plant Translocation Guidelines**. Species translocations have been an important conservation approach for more than two decades to save threatened species from extinction. With no foreseeable reduction in threats from climate change, urban and agricultural expansion and intensification, and invasive pests and diseases, translocations will be increasingly important into the future.

The 6 session themes for this conference are:

- Moving house – lessons from the past.
- Moving house – what's new?
- Crossing over – what can we learn from moving organisms other than plants?
- Effective partnerships – who, why and how? What works and what doesn't?
- Conserving threatened plants, and the policy and politics of translocation.
- Do you need a safe deposit box? The importance of ex situ conservation in translocation.

Environmental change including through climate induced events such as drought and fire, as well as continued habitat loss and degradation continue to challenge many of our plant species. Halting and reversing species decline is a significant global challenge for the next few decades. With Australia being home to more than 21,000 known plant species the challenge to do this here is great but not insurmountable. New genomic approaches are beginning to unlock the genetic past of our plants offering opportunities to understand their capacity to respond to change in the future. The use of remote sensing and drone technology continues to expand the ecological frontier allowing us to better understand our ecological systems and processes. Artificial intelligence and machine learning applications are also rapidly growing and provide considerable promise in better species management such as the remote detection and identification of species in real time. These new technologies will not, however, replace the passion for our flora that ANPC members have. This passion is essential if we are to ensure that we leave an intact floral legacy for future Australian's to love and enjoy as much as we do.

On behalf of the ANPC I'd like to thank the major conference sponsors who have helped make this event possible: in particular the Centre for Australian National Biodiversity Research, the NESP Threatened Species Recovery Hub, and the Australian National Botanical Gardens as our Gold Sponsors; the Ecological Consultants Association of NSW for sponsoring the Plenary for Theme 4; Kerralee winery, Banrock Station and Capital Brewing for sponsoring the catering; Greening Australia, Australian National Botanical Gardens and the NSW Office of Environment and Heritage for sponsoring the Field Trips; the \$750 donation for the Student Prizes; and our minor sponsors the Australian Flora Foundation, the National Arboretum Canberra, CSIRO Publishing and Ecology and Heritage Partners. These organisations have recognised the value of supporting the ANPC in facilitating communication and networking among scientists, land managers, community groups, government and industry for improved plant conservation in Australia.

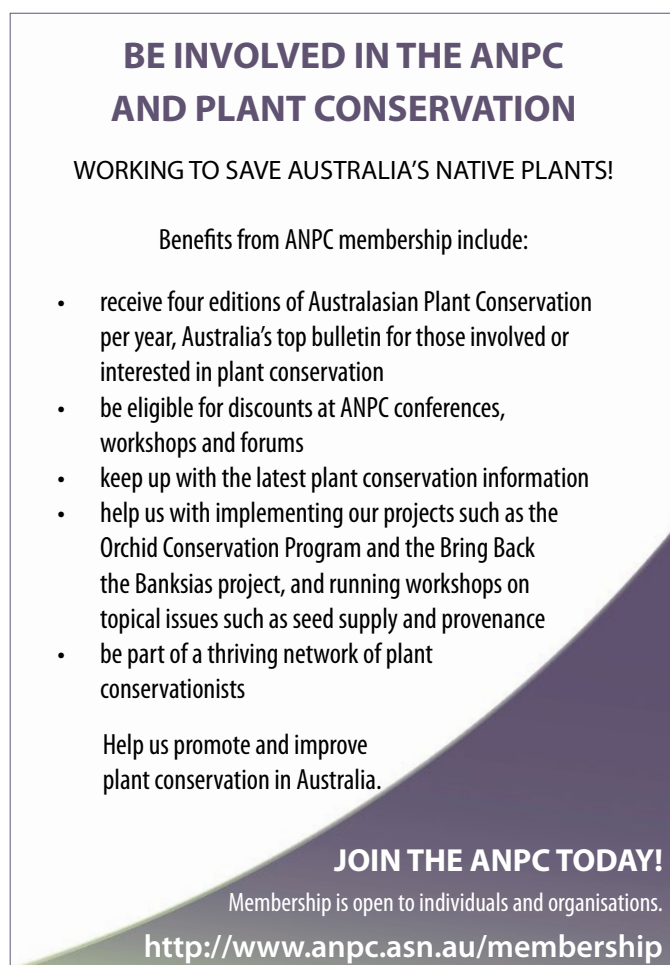
This is going to be an excellent conference and on behalf of the entire ANPC membership I would like to thank the conference organising committee, especially Damian Wrigley (Australian Seed Bank Partnership); Dave Coates and Chantelle Doyle (ANPC committee); Jasmyn Lynch (University of Canberra/Molonglo Catchment Group); Francisco Encinas-Viso (Centre for Australian National Biodiversity Research); and Nicki Taws (Greening Australia). ANPC staff and volunteers Jo Lynch, Lucy Commander, Martin Driver, Carly Westbye, Chris Ikin, Eleanor Gates-Stuart and Robert Hawes, as well as Josh McGregor (Centre for Australian National Biodiversity Research), have worked tirelessly to ensure that this conference will be a success and more importantly, that the conference findings are translated into successful flora conservation initiatives and outcomes.

The ANPC is a membership-based organisation with a diverse range of members including scientists, land managers, State and Commonwealth Departments, industry, the volunteer conservation movement and the broader community. Membership fees are an essential part of our financial base, and members and member-organisations are the lifeblood of our network. If you are not already a member, we would like to encourage you to join for 2019 – special APCC12 discount membership forms are available in your delegate bags.

Linda Broadhurst

President

Australian Network for Plant Conservation Inc.

A promotional graphic for ANPC membership. It features a light purple background with a dark purple diagonal stripe in the bottom right corner. The text is centered and uses a mix of bold and regular fonts. The main heading is 'BE INVOLVED IN THE ANPC AND PLANT CONSERVATION'. Below it is the sub-heading 'WORKING TO SAVE AUSTRALIA'S NATIVE PLANTS!'. A section titled 'Benefits from ANPC membership include:' is followed by a bulleted list of five benefits. At the bottom, it says 'Help us promote and improve plant conservation in Australia.', 'JOIN THE ANPC TODAY!', 'Membership is open to individuals and organisations.', and the website 'http://www.anpc.asn.au/membership'.

Conference Program

SUNDAY 11 NOVEMBER 2018

5:30pm – 7:30pm	WELCOME RECEPTION and Guidelines Launch @ CSIRO Synergy Building <i>Sponsored by the Threatened Species Recovery Hub</i> Stand up drinks and canapés
5:30pm	Early Registration @ CSIRO Synergy Building
6:00pm	APCC12 Welcome to Country
6:15pm	Launch of the ANPC's 3rd edition of the <i>Guidelines for the Translocation of Threatened Species in Australia</i> Sally Box , Threatened Species Commissioner, Dept of Environment and Energy
6:25pm	Sponsor's address – NESP Threatened Species Recovery Hub Brendan Wintle , Director
6:30pm	Sponsor's address – Australian National Botanical Gardens Judy West , A/g Director of National Parks
6.35pm	Project Manager's acknowledgments Lucy Commander , ANPC

MONDAY 12 NOVEMBER 2018

VENUE: CSIRO Discovery Lecture Theatre		
8:30am	Registration @ CSIRO Discovery	
9:00am	Welcome to Conference, Acknowledgement of Country, Housekeeping, ANPC President's Address	Linda Broadhurst – <i>President, Australian Network for Plant Conservation</i>
THEME 1: Moving house – lessons from the past – who's done what where and what do we now know? Exploring plant introductions across Australia over the past 30 years. "There is nothing new in the world except the history you don't know." Harry S. Truman Chair: Linda Broadhurst		
9:15am	PLENARY – Australian plant translocations: a 60,000 year history <i>Sponsored by the Threatened Species Recovery Hub</i>	Jen Silcock
10:00am	Moving plants – revealing the past and informing the future	Margaret Byrne
10:15am	How well is genetic diversity captured in revegetation plantings?	Rebecca Jordan
10:30am	Survival outcomes of <i>Cycas megacarpa</i> across two translocation programs	Alicia Wain
10:45am	Measuring and managing genetic erosion in plant translocations: lessons from <i>Grevillea scapigera</i>	Siegy Krauss
11:00am	Questions and Discussion	
11:10am	MORNING TEA @ CSIRO Discovery Link Room	
THEME 2: Moving house – what's new? This session will include new approaches, ideas or tools to assist you when making decisions about moving plants. "If everyone is moving forward together, then success takes care of itself." Henry Ford Chair: Damian Wrigley		
11:30am	PLENARY - Plant conservation actions and comparative ecology: But we don't know enough!	Peter Vesk
12:10pm	Physiological patterns among trees can aid land-management decisions under a changing climate	John Patykowski
12:25pm	Restore & Renew: Large scale evolutionary, environmental and ecological information in support of restoration practices	Maurizio Rossetto

12:40pm	Is restoration working? An ecological genetic assessment	Melissa Millar
12:55pm	Questions and Discussion	
1:00pm	LUNCH @ CSIRO Discovery Link Room	
1:10pm – 1.55pm	ANPC 2018 ANNUAL GENERAL MEETING @ CSIRO Discovery Lecture Theatre	
THEME 2 continued: Moving house – what’s new?		
Chair: Maurizio Rossetto		
2:00pm	Maximising adaptive potential in translocated populations of clonal saltmarsh plants	Karen Sommerville
2:15pm	Plant mating systems and assessing translocation success	David Coates
2:30pm	Translocation of the threatened rainforest herb, <i>Astelia australiana</i>	Linda Parker
2:45pm	Breeding system and polyploidy in the conservation management – the case of the woolly wrinklewort <i>Rutidosia lanata</i>	Alexander Schmidt-Lebuhn
3:00pm	Interrogate then translocate: identifying potentially recipient sites by modelling the environmental niche of the endangered <i>Persoonia hindii</i>	Nathan Emery
3:15pm	Pollination of the threatened Canberra spider orchid, with a view to translocations	Tobias Hayashi
3:30pm	Securing Silver Daisy - collaborative action to building resilience in a threatened daisy	Amelia Hurren
3:45pm	Questions and Discussion	
3:55pm	AFTERNOON TEA @ CSIRO Discovery Link Room	
THEME 3: Crossing over – what can we learn from moving organisms other than plants?		
This session will include presentations about what lessons have been learnt by moving other types of organisms to expand our understanding of the role and importance of plants.		
“Any investment in knowledge pays the best interest.” Benjamin Franklin		
Chair: Lucy Commander		
4:15pm	PLENARY – Mammals – looking backward, moving forward <i>Sponsored by the Threatened Species Recovery Hub</i>	Sarah Legge
5:00pm	Bettongs as ecosystem engineers – the Mulligans Flat Woodland Experiment	Catherine Ross
5:15pm	Questions and Discussion	
5:25pm	Housekeeping / Prize-giving	
5:30pm – 7.00pm	POSTER SESSION @ CSIRO Discovery Link Room with drinks and canapes	
PERRI – Platform for Ecological Restoration Research Infrastructure		Linda Broadhurst
Applying seed ecology of Australian native species to enhance seed based restoration in degraded habitats		Fernanda Caro Beveridge <i>Student prize recipient</i>
Making a difference: the impact of seed conservation and translocation on threatened plant recovery		Anne Cochrane
Using simulation models to improve effectiveness of plant population offsetting in short-lived perennials		Francisco Encinas-Viso
Raising rarity		Megan Hirst
A genetic assessment of diversity and structure among remnant stands of Sweet Quandong (<i>Santalum acuminatum</i> , Santalaceae): the implications for seed sourcing		Susan Hoebee
Making the most of 20 million trees - embedding a provenance trial		Paul Rymer
Genetic diversity in natural and restored populations of <i>Grevillea wilkinsonii</i>		Amy Westman

TUESDAY 13 NOVEMBER 2018

8:00am	Registration @ CSIRO Discovery	
VENUE: CSIRO Discovery Lecture Theatre		
THEME 4: Effective partnerships – who, why and how? What works and what doesn't? Showcasing partnership projects including citizen science where multiple stakeholders have engaged in translocation and restoration projects. A session not just on what's worked! Here we'll share what didn't work and how we can use these findings to improve partnerships in the future. "Some of the best lessons we ever learn are learned from past mistakes. The error of the past is the wisdom and success" Chair: Chantelle Doyle		
8:30am	Housekeeping	
8:40am	PLENARY – From a burnt-out basement to a new home in the sun: the role of ecological consultants in plant translocation <i>Sponsored by the Ecological Consultants Association of NSW</i>	Belinda Pellow
9:20am	The status of the Australian native seed sector. Results from the ANPC native seed survey	Nola Hancock
9:35am	On the receiving end: long term site management in the zone of the North Rothbury Persoonia	Monica Oppen
9:50am	Responding to the dreaded Myrtle Rust: a New Zealand botanic gardens perspective	Emma Bodley
10:05am	Restoring a Threatened Ecological Community following mining	Lucy Commander
10:20am	Questions and Discussion	
10:30am	MORNING TEA @ Link Room	
THEME 5: Conserving threatened plants, and the policy and politics of translocation. Here we will explore the policy and politics of moving plants – hear from experts about their expectations for policy that guides when, how and where we move plants. "Avoid any specific discussion of public policy at public meetings." Quintus Tullius Cicero Chair: Bob Makinson		
10:50am	PLENARY – Translocating threatened plants: linking policy, planning and practice	Peter Latch
11:30am	A revised policy to support translocations in NSW	Timothy Sutton
11:45am	Next generation conservation is needed to protect the dryland grassland biome of Australia	Glenda Wardle
12:00pm	Conserving Australia's forests and the importance of having a fit-for purpose biosecurity program	Francisco (Paco) Tovar
12:15pm	Questions and Discussion	
12:30pm	LUNCH @ Link Room	
THEME 2 continued: Moving house – what's new? Chair: Jasmyyn Lynch		
1:10pm	Threatened plant translocations at Sydney's urban interface – where do we put them?	Peter Cuneo
1:25pm	Population biology with <i>Plantago lanceolata</i> as a model system – a focus on genetics and seed ecology	Stephanie Chen <i>Student prize recipient</i>
1:40pm	Myrtle Rust poses unprecedented challenges for plant conservation and recovery	Bob Makinson
1:55pm	Faster than nature does on its own: a story of saltmarsh restoration	Paul Adam
2:10pm	What determines species distribution limits along an altitudinal gradient in Acacia?	Paul Rymer
2:25pm	Questions and Discussion	
2:30pm	AFTERNOON TEA @ Link Room	

THEME 6: Do you need a safe deposit box? The importance of ex-situ conservation in translocation.

Here we will explore the role of *ex situ* conservation in plant translocation and restoration including examples of successful plant reintroductions from *ex situ* collections.

"Banking's a sexy industry! Creative - it's dynamic, it's global, it's fast-moving, you bring a lot of talented people together!" James P. Gorman

Chair: David Coates

2:50pm	PLENARY – Ex situ seed banks are a good investment as small deposits drive big returns	Damian Wrigley
3:30pm	Leek orchids vs. extinction: A new hope	Marc Freestone <i>Student prize recipient</i>
3:45pm	Western Australia's safe deposit box	Anne Cochrane
4:00pm	Playing to our strengths: applying horticulture and advocacy to threatened plant conservation at Auckland Botanic Gardens	Rebecca Stanley
4:15pm	Ex situ seed conservation to furnish translocation and restoration: securing currency in the bank, and how to grow it	Caroline Chong
4:30pm	Seed resources for restoration	Paul Gibson-Roy
4:45pm	<i>Cassinia tegulata</i> survival linked to fire	Bryan Haywood
5:00pm	Responses of nitre goosefoot (<i>Chenopodium nitrariaceum</i>) to simulated rainfall, and depth and duration of experimental flooding	Will Higgison
5:15pm	Questions and Discussion	
5:25pm	Housekeeping	
5:30pm	Conference close	
7:00pm onwards	CONFERENCE DINNER @ Debacle, 24 Lonsdale St, Braddon	

WEDNESDAY 14 NOVEMBER 2018

8:30am	Registration @ CSIRO Discovery	
	VENUE: CSIRO Discovery Lecture Theatre	
	PLANT TRANSLOCATION WORKSHOP	
	Based on the new Third Edition of the ANPC's <i>Guidelines for the Translocation of Threatened Species in Australia</i> . Workshop and Guidelines sponsored by the Threatened Species Recovery Hub	
9:00am	Introduction to Workshop	Lucy Commander
9:10am	Plant translocation in Australia	Jen Silcock
9:40am	Pre-translocation assessment of ecology and biology	Lucy Commander
10:00am	When do you need a geneticist, and site selection	Dave Coates
10:30am	MORNING TEA @ Link Room	
11:00am	Translocation policies and requirements for approvals	Simon Nally
11:30am	Pre-translocation preparation – using a model incorporating a genotype collection method	David Taylor
12:00pm	The translocation and ongoing management	Leonie Monks
12:30am	LUNCH @ Link Room	
1:30pm	Experimental design, monitoring and evaluation	Heidi Zimmer
2:00pm	Case study: Whole plant transplantation	Steve Mueck
2:20pm	Case study: Biotic interactions with a focus on Orchids	Noushka Reiter
2:40pm	Case study: <i>Pomaderris delicata</i>	Keith McDougall
3:00pm	AFTERNOON TEA @ Link Room	
3:30pm	Panel discussion on translocation collaboration between states and territories. Topics to include cross-border species management, uniform policy for EPBC-listed species, translocations across states, and co-ordinating translocation proposals to consider species across their entire range.	
4:15pm	Wrap up and thank you	Lucy Commander
5:00pm	Networking Drinks at Fellows Bar, ANU (at own cost)	

THURSDAY 15 NOVEMBER 2018

FIELD TRIP #1	FIELD TRIP #2
Full day: 9:00am – 4:00pm	Half day: 9:00am – 1:00pm
Threatened Plant Translocation Projects Visit two threatened plant translocation sites in the ACT region with officers from the NSW Office of Environment and Heritage and the Australian National Botanic Gardens. First stop will be the <i>Pomaderris delicata</i> (Delicate Pomaderris) translocation site at Pomaderris Nature Reserve, a local success story and a case study to be included in the 3rd edition of the Translocation Guidelines. Second stop will be McLeods Creek Nature Reserve to inspect initial trial plantings of <i>Senecio macrocarpus</i> (Large-fruit Fireweed) and <i>Lepidium hyssopifolium</i> (Aromatic Peppergrass) and discuss future site selection, source of propagating material and collaboration. There will also be a short discussion on the history of the reserve and revegetation of the Box Gum Grassy Woodland Endangered Ecological Community at the site. <i>Sponsored by the NSW Office of Environment and Heritage and the Australian National Botanic Gardens</i>	Barrer Hill Woodland Restoration Project Visit Barrer Hill with Greening Australia looking at a variety of restoration and translocation techniques. A restoration project has been taking place at Barrer Hill in the Molonglo Valley since 2014. The 50 hectare area, on the northern bank of the Molonglo River, across from the new suburb of Coombs, has a long history of human impacts. It was formerly planted with non-native pines as well as used for livestock grazing. Barrer Hill still retains high conservation value with rocky grasslands home to threatened species like the pink-tailed worm-lizard. The area also forms parts of the soon-to-be declared Molonglo River Reserve which will be a key recreational area for the developing suburbs of Molonglo. The restoration work to date has included removing the pines and progressively replacing them with native shrubs and trees, including yellow box, red-stem wattle and clustered everlasting daisy. Grassland restoration has replaced patches of exotic grasses and weeds with a diverse mix of native grasses and wildflowers, including the endangered Button Wrinklewort. A key part of the project has involved returning habitat structures to the area such as rocks, salvaged logs, and dead trees which provide shelter for wildlife. <i>Sponsored by Greening Australia</i>
Coordinators – David Taylor (ANBG), John Briggs (OEH)	Coordinator – Nicky Taws (Greening Australia)

TOUR #1	TOUR #2
Half day: 10:00am – 12:15pm	Half day: 1:30pm – 3:30pm
Australian National Herbarium & Australian National Insect Collection Spend an hour touring the Australian National Insect Collection and then walk to the Australian National Herbarium for another one hour tour. Location @ CSIRO Black Mountain Science and Innovation Park. Limit of 15. No food provided.	Australian National Botanical Gardens & National Seedbank Experience the beauty and diversity of Australian native plants at the Australian National Botanic Gardens. Stroll along the Gardens' paths and explore one-third of Australia's native flowering plants and half of Australia's iconic Eucalypts. Learn about the ANBG's involvement in threatened species conservation, tour the National Seedbank, and visit the newly-established Conservation and Research Garden. Limit of 15 (minimum 6). No food provided.

Organising Committee

Linda Broadhurst (Chair)	Centre for Australian National Biodiversity Research
Josh McGregor	Centre for Australian National Biodiversity Research
Francisco Encinas-Viso	Centre for Australian National Biodiversity Research
Damian Wrigley	Australian Seed Bank Partnership
Nicki Taws	Greening Australia
Jasmyn Lynch	University of Canberra / Molonglo Catchment Group
Chantelle Doyle	ANPC Committee member
David Coates	ANPC Committee member
Jo Lynch	ANPC Business Manager
Lucy Commander	ANPC Translocation Project Manager
Martin Driver	ANPC Project Manager

Additional Organisational Support

Thank you to the people behind the scenes who have provided support for the conference, particularly:

Volunteers from the Australian Network for Plant Conservation Inc.

Robert Hawes	ANPC Office volunteer
Eleanor Gates-Stuart	ANPC Office volunteer
Chris Ikin	ANPC Treasurer

Field Trip coordination

David Taylor	Australian National Botanical Gardens
John Briggs	NSW Office of Environment and Heritage
Keith McDougall	NSW Office of Environment and Heritage



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National **Environmental Science** Programme

The Threatened Species Recovery Hub is working with over 100 partners across Australia to undertake research to support the recovery of Australia's threatened flora, fauna and ecological communities.

Projects include revising Australia's guidelines for plant translocation and identifying Australia's 100 most imperilled plant species.

The Hub is supported by the Australian Government's National Environmental Science Program.

The Ecological Consultants Association of NSW has been developed to support those in the industry, as well as others in associated fields.

Benefits include training and information events, regular information emails, communication with regulatory authorities, maintenance and improvement of standards in the industry and Consulting Ecology, the ECA of NSW biannual journal.

See www.ecansw.org.au for more information, contact details and membership forms.



Wine & Wetland Centre

Situated in the heart of the Riverland, Banrock Station is the ideal setting to enjoy an outstanding wine, food and nature experience

Wetlands

At Banrock Station, our commitment to producing good wine is matched only by our passion for conserving the environment.

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CSIRO Discovery Centre

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Swainsona recta (Small Purple Pea). (John Briggs)