Australian Network for Plant Conservation Inc

President's Report

2023

Deane's boronia (*Boronia deanei*) - Richie Southerton

President's Report

To the Annual General Meeting, 15 November 2023

2023 has been a very busy year for the ANPC and our role as Australia's key plant conservation organisation. We have continued to receive significant project and grant funding this year to keep us extremely active in the plant conservation sphere, as well as financially viable. We have extensively collaborated with partners across the country to:

- Provide safe custody for Native Guava (Rhodomyrtus psidioides) which is at risk of extinction due to Myrtle Rust.
- Further enhance the Native Guava project and initiate a safe custody project for Scrub Turpentine (Rhodamnia rubescens).
- Coordinate recovery of Queensland's threatened plants.
- Prevent extinction of Victoria's threatened flora.
- Prevent rare plant extinction and reduce impacts of future fires, continuing our field surveys and assessments of species of national significance potentially adversely impacted by the 2019/2020 fires.
- Plan the next ANPC conference will be held in Southeast Queensland in 2024.
- Hold a webinar on collective action to provide hope for future recovery from Myrtle Rust
- Hold the online Flora After Fire Symposium on the post-fire recovery of plants.
- Hold the inaugural Australasian Myrtle Rust Conference
- Organise a Plant Translocation Workshop in Perth
- Produce and launch three Myrtle Rust videos on the Native Guava project.
- Published a paper in Plants, People, Planet entitled "Ex situ germplasm collections of exceptional species are a vital part of the conservation of Australia's national plant treasures" in collaboration with many partners following the second day of the Australian Academy of Science Fenner Conference on the Environment 'Exceptional times, exceptional plants' held in 2022.
- Promulgate and share the endorsed Healthy Seeds Roadmap.

PROJECTS

Safe Custody for Native Guava

https://www.anpc.asn.au/safe-custody-for-native-guava/

In April, the ANPC successfully completed this federally funded project, a collaboration between botanic gardens and government agencies in QLD, NSW, the ACT and Victoria. The project delivered conservation actions for Native Guava (Rhodomyrtus psidioides) using a pilot dispersed-custody model (metacollection). This species is listed as Critically Endangered under federal, New South Wales and Queensland legislation. Native Guava had stable healthy populations before Myrtle Rust was introduced to Australia in 2010 but has suffered significant declines as a result of this pathogen. Ex situ (offsite) conservation was needed to ensure this species will survive while long-term recovery options are pursued. Action to conserve Native Guava was rated as an emergency priority in the Myrtle Rust National Action Plan.

This pilot project aimed to show what is possible with collaborative action on germplasm capture, propagation and dispersal. We also aimed to understand the workflow and take any learnings into similar future ex situ conservation projects on emergency priority species.

Images (L-R): Veronica Viler, Nathan Emery, Veronica Viler

The project provided a coordinated national response to the conservation of this species across its range through the following activities:

1/ Germplasm Capture: Boosting ex situ conservation through collection of Native Guava germplasm from both NSW and Queensland. Genetic analysis of this new material has allowed us to better understand population dynamics in the wild.

2/ Propagation: Providing resources for establishing and maintaining potted Native Guava ex situ collections in Queensland and NSW.

3/ Collaboration: Engaging with researchers and promoting partnerships to provide Native Guava plants for further research. This can include tissue culture trials, susceptibility assays, RNAi vaccine trials, genetic research and investigating host/pathogen interactions.

4/ Planting Out: Supporting the creation of an in-ground living collection of Native Guava at several locations across NSW, Victoria and the ACT. This dispersed living collection of 60 individual plants contains genetic lineages from the NSW germplasm collection.

5/ Production of Native Guava videos: Raising awareness of Myrtle Rust and promoting the project by producing two short videos.

Germplasm Capture

Conservation of plant species in their existing habitat is critical, but for species in rapid decline such as Native Guava, ex situ conservation (away from the natural habitat) is the only way to safely preserve genetic variation. Our collaborative Native Guava project helped meet the objective of Germplasm Capture, which is a very high priority in the 'Myrtle Rust in Australia National Action Plan'. Without germplasm capture, there are no future options for species preservation or recovery. For species undergoing significant decline, germplasm capture is urgently required to secure insurance collections of these species before genetic diversity is lost.
Monitoring and sampling were undertaken over the range of Native Guava, and this project supported sampling and genetic analysis in both Queensland and NSW.

Germplasm sampling of Native Guava.
Credit Craig Stehn

Dead Native Guava (*Rhodomyrtus psidioides*) trees at Simpson Falls, Brisbane, September 2022. Credit: Geoff Pegg.

Propagation

While seed is the easiest and most efficient form of germplasm to store, species such as Native Guava are undergoing such significant decline due to Myrtle Rust that they no longer produce viable seeds for collection. Therefore, cutting propagation was used to capture genetic diversity and establish the ex situ collections that provide a measure of insurance against extinction.

Where possible, cuttings from the wild were taken to establish the new collections at the Department of Agriculture and Forestry (QLD) nursery in Gympie and at the Australian Botanic Garden Mount Annan (NSW). These collections provide a source of future propagation material, an accessible collection for research, and a way of distributing germplasm across partner organisations as a further measure to establish the species in safe custody.

Cutting propagation of Native Guava (*Rhodomyrtus psidioides*) at the Australian Botanic Garden Mount Annan. Credit: Amelia Martyn Yenson

Cutting propagation of Native Guava at the Department of Agriculture and Forestry, Gympie (QLD). Credit: Tracey Menzies, Department of Agriculture and Forestry (QLD).

Potted Native guava plants at Mt Annan awaiting dispersal and planting. Credits: Veronica Viler (L) and Nathan Emery.

Planting Out

Five project partner gardens received plants to add to their living collections. Advanced Native Guava plants were sent from the Australian Botanic Garden Mount Annan to Lismore Rainforest Botanic Gardens (NSW), the Blue Mountains Botanic Garden Mount Tomah (NSW), the Australian National Botanic Garden (ACT), and Dandenong Ranges Botanic Garden (Victoria). Plants were also added to the existing collection at the Australian Botanic Garden Mount Annan.

Ashleigh Poynter and Ryan Newett planting critically endangered *Rhodomyrtus psidioides* (Native Guava) at the Australian Botanic Garden Mount Annan. Credit: Michael Elgey

Dr Zoe Knapp and Toby Golson with critically endangered *Rhodomyrtus psidioides* (Native Guava) planted at the Australian National Botanic Garden. Credit: Amelia Martyn Yenson.

Production of Native Guava videos

Filming was undertaken by our production team at The Australian Botanic Garden, Mount Annan and Lismore Rainforest Botanic Gardens. The three videos were released in early 2023 and are featured on the ANPC YouTube channel as part of a dedicated Myrtle Rust playlist:

1/ Safe Custody for Native Guava - 3min 50secs
https://youtu.be/L9kH7QSiXRc?feature=shared
2/ Safe Custody for Native Guava - Short version 1min 47secs
3/ The Native Guava Project at Lismore Rainforest Botanic Gardens
https://youtu.be/AXADcP69pv4?feature=shared

High quality images were also taken and have been used, as well as the videos, on the ANPC website, social media and by partners, such as Research Centre for Ecosystem Resilience
https://recer.org.au/2023/07/genetics-helping-to-save-plant-species-from-myrtle-rust/

Veronica Viler preparing cuttings in the nursery for the videos. Credit: Amelia Martyn Yenson

Filming the living collection of Native Guava at the ABGMA nursery. Credit: Amelia Martyn Yenson

Filming Stephanie Chen from Botanic Gardens of Sydney undertaking genetic analysis in the DNA extraction lab. Credit: Amelia Martyn Yenson

This project was supported by funding from the Australian Government.

Australian Government

We'd like to thank our partners for their generous support and commitment to the Native Guava project:

- NSW Department of Planning and Environment (DPE).
- Queensland Departments of Environment and Science and Agriculture and Fisheries.
- Australian Botanic Garden Mount Annan (ABGMA -Science Education & Conservation Division and the Horticulture Management Division).
- Blue Mountains Botanic Garden Mount Tomah.
- Australian National Botanic Gardens.
- Dandenong Ranges Botanic Garden.
- Lismore Rainforest Botanic Gardens.
- Research Centre for Ecosystem Resilience, Royal Botanic Garden Sydney.

Myrtle Rust Project extension

https://www.anpc.asn.au/news/myrtle-rust-project-extension/

The ANPC would like to thank the NSW Department of Planning and Environment which this year funded an extension of the above 'Safe Custody for Native Guava' project for a further 6 months or so, with the aim to:

- Continue monitoring the already-dispersed Native Guava (R. psidioides) collection.
- Ensure continued integration of Qld's dispersal and monitoring activities with those in NSW.
- Send new lineages of Native Guava to partner garden dispersed collections.
- Collate monitoring data and suggest updates to monitoring methods.
- Communicate progress and lessons.
- Trial sharing of Scrub Turpentine (Rhodamnia rubescens) lineages to partner gardens.

ANPC Project Manager Chantelle Doyle is coordinating this project.

To date, the project has achieved the following:

- New partner Booderee Botanic Gardens has joined the group with ex situ plantings and attending regular meetings.
- Dispersal of 10 additional Native Guava plants and lineages sent to three partner gardens.
- 13 Scrub Turpentine plants and lineages sent to 3 partner gardens.
- Continued collation of dispersal data.
- Five collaborative partner meetings held with much discussion on managing the collections and presentations from key researchers Dr Manueal Cascini, Dr Jason Bragg and Dr Karen Sommerville from Botanic Gardens of Sydney outlining status of genetic analysis, Myrtle Rust resistance and fruit viability.
- One outreach flyer developed for the general public when visiting the ex situ collections including on guided walks, outlining the project background and aims.
- Epicollect project monitoring is ongoing and has been streamlined for ease of use. All gardens can now access the raw data and export for their personal records (training by DPE's Craig Stehn).
- Additional actions from the group to collect germplasm and genetic material from healthy R. psidioides appearing in response to drying climate.
- Additional actions from the group to collect genetic material from healthy R. maideniana and R. whiteana plants observed in the field to Dr Manuela Cascini for additional genetic analysis.
- Additional actions from the group to collect Rhodamnia and Rhodomyrtus fruit as observed and sent to Mt Annan for storage and viability testing.
- Held meeting with the BGANZ Collections and Records Management (BCARM) group to discuss regular co-facilitated practitioner meetings for managing Myrtle Rust impacted collections.

Thank you to all our partner organisations for their generous support and commitment to this project:

- NSW Department of Planning and Environment (DPE).
- Queensland Departments of Environment and Science and Agriculture and Fisheries.
- Australian Botanic Garden Mount Annan (ABGMA -Science Education & Conservation Division and the Horticulture Management Division).
- Blue Mountains Botanic Garden Mount Tomah.
- Australian National Botanic Gardens.
- Dandenong Ranges Botanic Garden.
- Lismore Rainforest Botanic Gardens.
- Research Centre for Ecosystem Resilience, Botanic Gardens of Sydney.
- Booderee Botanic Gardens.

Supporting coordinated recovery of Queensland threatened plants - a pilot (to be formally launched in early 2024)

I am proud to report that the ANPC has this year partnered with Threatened Species Operations (TSO) within the QLD Department of Environment and Science (DES) on a two-year pilot project to commence in early 2024, to support threatened plant recovery through ANPC Queensland member engagement, training, communications, and project reporting.

Queensland is the custodian of a globally and nationally significant proportion of Australia's biodiversity. It is home to around a quarter of the nation's threatened species. As of November 2022, there were 1048 threatened species listed under Queensland legislation including 793 plant species. Of these, more than 70 per cent of threatened plants are endemic to the state.

The DES Threatened Species Program 2020-40 (TSP) sets the framework for threatened species recovery in Queensland, identifies priority threatened species and facilitates coordinated recovery actions and research across tenures to support recovery.

The TSP Vision of 'Queenslanders supporting threatened species to prosper in self-sustaining populations, now and into the future' has a strong focus on enabling and facilitating all Queenslanders to participate in threatened species recovery. The TSP recognises the value of collaboration to deliver threatened species recovery in Queensland.

This project will be a new initiative that aims to bring together people and organisations that contribute to threatened plant recovery, to participate and achieve shared goals and outcomes. It will support and facilitate collaborations through a Queensland Threatened Plant Network (QTPN) and transform them into active, working communities of practice. Additionally, it will enable the building of social and intellectual capital to help solve threatened plant recovery problems and issues.

The QTPN will support, facilitate and enable people and organisations to achieve shared goals and outcomes to advance threatened plant recovery in Queensland. It will also contribute significantly to threatened plant species conservation. A Project Manager has been recruited and a Project Committee is being formed to provide guidance on the project.

Stay tuned for more information in 2024!

Queensland's *Grevillea hodgei*. Credit: Jason Halford

Paper published on ex situ germplasm collections of exceptional species

Read the paper 'Ex situ germplasm collections of exceptional species are a vital part of the conservation of Australia's national plant treasures' here https://nph.onlinelibrary.wiley.com/doi/10.1002/ppp3.10421

Conservation seedbanks maintain collections of many seed-bearing plant species, providing propagation material and data to support management of wild populations. But some plant species produce seeds that are difficult to collect, dry, store and utilise; collectively these are recognised as 'exceptional' species.

In this paper published in September by the ANPC, with the Australian Seed Bank Partnership and many collaborators in the journal Plants, People, Planet, we test a framework for identifying exceptional species within the Australian flora. Our expert working group documents examples and case studies for each 'Exceptionality Factor'. We also want to make it easier for conservation practitioners to recognise exceptional species and work around the challenges they present. Therefore, the paper includes a workflow that may be used to identify additional exceptional species, and direct efforts to establish appropriate collection types.

The paper was co-authored by researchers from the Botanic Gardens of Sydney, Australian National Botanic Gardens, Kings Park and Botanic Garden, the Western Australia Seed Centre, WA Parks and Wildlife Service, CSIRO, The University of WA, Alcoa Australia, and the Australian Academy of Science following the 2nd day of the Fenner Conference on the Environment 'Exceptional times, exceptional plants' held in 2022, funded by the Australian Academy of Science and The Ian Potter Foundation (IPF). Special thanks to Amelia Martyn Yenson for pulling it altogether!

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OPINION

Plants People Planet PPP

Ex situ germplasm collections of exceptional species are a vital part of the conservation of Australia's national plant treasures

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Post-fire funding from San Diego Zoo Wildlife Alliance

https://www.anpc.asn.au/prevent-rare-plant-extinction-and-reduce-impacts-of-future-fires/

This four-year project aims to prevent rare plant extinction and reduce impacts of future fires in eastern Australia. Our progress to date:

1/ Funding has supported (in combination with other funding sources) the assessment and preparation of 'Fire regimes that cause biodiversity decline' as a Key Threatening Process (KTP) under the national Environment Protection and Biodiversity Conservation Act (EPBC Act) which was formally listed in April 2022 https://www.dcceew.gov.au/environment/biodiversity/threatened/key-threatening-processes/fire-regimes-that-cause-declines-in-biodiversity. Funding has also helped develop guidance on recovery actions to build the resilience of biota to future fires, through lead authorship of a major technical report, a chapter in Australia's megafires: Biodiversity impacts and lessons learned from 2019-2020 published this year, and contributed to six journal articles (see Appendix 1). These articles are aimed at building the human contribution to the resilience of biota to future fires by quantifying the mechanisms of risk and investigating new approaches to reduce the incidence of future fires.

2/ Species of national significance that were potentially adversely impacted by the 2019/2020 fires were identified, with a focus on those not currently recognised as threatened and with restricted geographic ranges. A priority list of species for field inspections was developed to identify factors threatening their recovery after fire. Unfortunately, the field surveys suffered from significant delays due to COVID-19 lockdowns and travel restrictions, and more recently from road and track closures due to heavy rainfalls and flooding in eastern Australia. Two groups of taxa were chosen (which were not targeted by other similar efforts such as state and federal government initiatives):

(i) Species which allowed comparisons of those with canopy versus soil seed banks and between resprouting versus obligate seeding plants. Obligate seeding species (i.e. those killed by fire) with canopy seed banks are thought to be most at risk from high frequency fire or loss of recruitment following the 2019/2020 fires, as the seed bank is exhausted in a single recruitment event after a fire. Obligate seeding species with soil seed banks are somewhat at risk as the seed bank declines, but some buffer may be present. Resprouting species are considered likely to be less at risk unless drought conditions have led to increased plant mortality before, during, and after the 2019/2020 fires.

The focus of this part of the project has been on NSW endemics with a narrow-range, as NSW was the part of Australia most impacted by the 2019/2020 fires, and to collaborate with the NSW Department of Planning and Environment (DPE) and universities who are working on the recovery of other plant species following those fires. Standardised field data sheets were developed for this. The ANPC is also working with UNSW on IUCN Red List assessments and Conservation Assessments for some of these species.

IUCN Red List assessments and Conservation Advices have been completed for several species, in collaboration with UNSW and the Commonwealth of Australia. This includes species of fire sensitive Banskia, Darwinia, Dillwynia, Grevillea, Hakea and a resprouting Bursaria species. A number of these species are recommended for listing as threatened as there is evidence of decline in habitat quality or the number of mature individuals, due to ongoing threats and impacts of the 2019/2020 fires.

Other species have recovered well after the fires and are not currently considered to be threatened.

(ii) Epiphytic orchids. A group of 10 of these orchids, which occur on rocks and/or trees, have been chosen to examine the risk of fire severity on their survival, as data was lacking and assessment difficult. Depending on local fire severity, these orchids may escape being burnt, be scorched, and survive, or may be killed. However, the 2019/20 fires are thought to have hit many of these species particularly hard. This is because they are killed by intense fire, due to a lack of both an underground dormant phase and a persistent seed bank from which to recover. Surveys of four of these species were completed in May this year, for Plectorrhiza purpurata, Sarcochilus aequalis, Tropilis angusta (syn. Dendrobium aemulum sens.lat.) and Adelopetalum argyropum. The surveys have documented the impact of the fires and established the geographic distribution and population size of the remaining populations. This is currently informing Conservation Assessments and threatened species listing which is being undertaken by CSIRO.

Dr Jeremy Bruhl (University of New England & JJ Botanics, who undertook the surveys) and Dr Heidi Zimmer (CSIRO) gave a presentation called "Post-Fire Epiphytic Orchid Surveys, Four Australian Cinderella Orchids" on the survey outcomes at the ANPC's Flora After Fire symposium in August, which can be viewed on the project webpage. Many populations were found to be heavily impacted, with most host plants dead and all epiphytes killed. All four species were found to now be endangered according to the IUCN criteria.

Plectorrhiza purpurata growing in Cottan-Bimbang National Park.
Credit: Lachlan Copeland

Preventing extinction of Victoria's threatened flora

https://www.anpc.asn.au/preventing-extinction-of-victorias-threatened-flora/

The ANPC is collaborating with the Royal Botanic Gardens Victoria, La Trobe University and various other partners over the next three years on this Victoria-wide project which commenced in June. The project aims to prevent the extinction of 24 endangered or critically endangered Victorian plants.

The focus is on two botanical hotspots, the Gippsland and Grampians regions, as well as threatened flora from the Barwon South West and Port Phillip Regions. The project will address key threatened species recovery actions from 11 threatened species Action Statements and 11 National Recovery Plans and work to optimise conservation actions across the life cycle of the plants.

In 2025, the ANPC will coordinate three one-day workshops on Victorian threatened flora conservation, in the Port Phillip, Gippsland and the Grampians (Gariwerd) regions, as part of the project.

The project will lead to long-term conservation benefits for the 24 plant species, both in situ and ex situ. Ex situ actions include collecting seeds, spores, rhizobia and mycorrhiza, which will be kept in seed and spore banks and nursery facilities at the Royal Botanic Gardens Victoria. These ex situ plant collections will act as long-term insurance populations, a source of material for future reintroductions, and will help us carry out further research. The project will follow an integrated conservation framework which includes the following activities:

1. Threat assessments, field surveys and community surveys.
2. Seed and spore collection.
3. Conservation genetics.
4. Germination trials.
5. Pollination studies.
6. Developing permanent ex situ living collections.
7. Establishing new populations through propagation.

One of the 24 threatened plant species, *Phebalium glandulosum subsp. macrocalyx*. Credit: Andre Messina

Project partners are:

- Royal Botanic Gardens Victoria
- La Trobe University
- Australian Network for Plant Conservation
- DEECA
- Trust for Nature
- ENVITE
- Bairnsdale and far East Gippsland Field Naturalists
- Friend of the Grampians Gariwerd
- Halls Gap Botanic Gardens
- Australasian Native Orchid Society Victorian Branch
- Nillumbik Shire

This project is funded by the Victorian Government Department of Energy, Environment and Climate Action (DEECA) Nature Fund.

SUBMISSIONS

The ANPC continued to maintain its involvement in the UN Decade on Ecosystem Restoration 2021 – 2030 this year with the now 21 other Australian environmental organisations through the Restoration Decade Alliance (RDA), a consortium that supports the goals of the UN Decade in Australia. The decade aims to halt the degradation of ecosystems and restore them.

In collaboration with the RDA, the ANPC supported a submission on the Proposed Nature Repair Market in March. It supported in principle the proposed Nature Repair Market, as it has the potential to attract private and public sector investment in biodiversity restoration and management, though the mechanism of biodiversity certificates. Such investment is urgently required to facilitate restoration and sustainable management of biodiversity at the scale needed to restore the health of ecosystems across Australia, and to meet our international biodiversity conservation and restoration commitments. The integrity of the Market will be a key factor in determining its effectiveness over the long-time horizons associated with biodiversity restoration projects. Establishment of the Market requires careful design to ensure that it achieves the intended high quality and sustainable biodiversity outcomes over the full duration of restoration projects, while avoiding market distortions and unintended outcomes that would undermine the integrity of the Market. Read more here: https://www.anpc.asn.au/wp-content/uploads/2023/11/230303-Submission-Nature-Repair-Market_RDA.pdf

In January 2023, the ANPC made a submission on the statutory review of NSW native vegetation clearing rules (Part 5A of the Local Land Services Act 2013). The objective of Part 5A of the LLS Act is 'to ensure the proper management of natural resources in the social, economic and environmental interests of the State, consistently with the principles of ecologically sustainable development'. Land clearing data shows that since Part 5A of the LLS Act commenced a significant increase in rates of native vegetation clearing for agriculture have occurred. As quoted by the Environmental Defenders Office, land clearing rates for woody vegetation across NSW have increased from 8,500 ha in 2011 to 27,100 ha in 2017, 29,400 in 2018, 23,400 in 2019, and 13,000 in 2020. Additionally, in 2020, 46,100 ha of non-woody vegetation was cleared for agriculture on rural land. This is clearly unacceptable and having a considerable impact on the conservation of threatened plant species and ecological communities in NSW. Preventing broadscale land-clearing and ensuring clearing 'improves or maintains environmental outcomes' are not included as objectives in the Act (unlike the previous Native Vegetation Act). The new Land Management Framework introduced a system that is less stringent (allowing increased clearing), less evidence-based (with more reliance on self-assessment) and less accountable (with less detailed information available on public registers). The objectives of Part 5A of the LLS Act need to be more ambitious.

In April, the ANPC made a submission to the Statutory Review of the NSW Biodiversity Conservation Act 2016. We highlighted a number of areas where the current legislation was not achieving its stated objectives and suggested how to improve biodiversity conservation across NSW. We also noted where components of the legislation were working well. Read more here: https://www.anpc.asn.au/wp-content/uploads/2023/11/ANPC-Submission-to-Statutory-Review-of-NSW-Biodiversity-Conservation-Act-2016.pdf.pdf

The Australian community continues to demonstrate strong interest and support for plant conservation. To meet these expectations, the ANPC is playing a key role in facilitating and communicating plant conservation initiatives and information across Australia. This is reflected in the ongoing participation of land managers, government departments, industry, botanic gardens, the volunteer conservation movement and the broader community in ANPC events and conferences as well as the requests we receive from other organisations and government agencies to participate in and comment on various flora conservation initiatives.

I continue to be greatly impressed by the dedication and breadth of knowledge of ANPC members, and staff. We still face many significant challenges for plant conservation in Australia and beyond. We need to ensure that we continue to effectively promote the inherent value and cultural significance of our unique and wonderful flora to the broader Australian community and remain true to our core business of facilitating Australian plant conservation, threatened species recovery, ecological restoration and remnant vegetation management.

EVENTS AND OUTREACH

Webinar: "Collective action provides hope for future recovery from Myrtle Rust"
https://www.anpc.asn.au/events-page/webinar-collective-action-provides-hope-for-future-recovery-from-myrtle-rust/

https://chabg.org.au/myrtle-rust-survey/

Myrtle Rust is known to infect close to 400 species of the Myrtaceae plant family in Australia, with a range of impact from minor to devastating. In the latter category is the rainforest tree Native Guava (*Rhodomyrtus psidioides*). However, collective action provides hope for future recovery.

This online webinar held in March, jointly hosted with the Botanic Gardens Australia and New Zealand (BGANZ) Collections and Records Management group (BCARM), with speakers from the ANPC and the ASBP, reported on two recent projects directed at saving this and other species from imminent extinction. A recording is available on the ANPC's YouTube channel.

Bob Makinson gave an introduction to Myrtle Rust and talked about how it kills, including its devastating impact on Native Guava (*Rhodomyrtus psidioides*). He talked through scenarios for different species, including management options, and the long-term vision for identification and breeding of resistant genotypes.

Amelia Martyn Yenson outlined the key activities and outcomes of the Native Guava project and shared the new video on the collaborative action providing hope for the

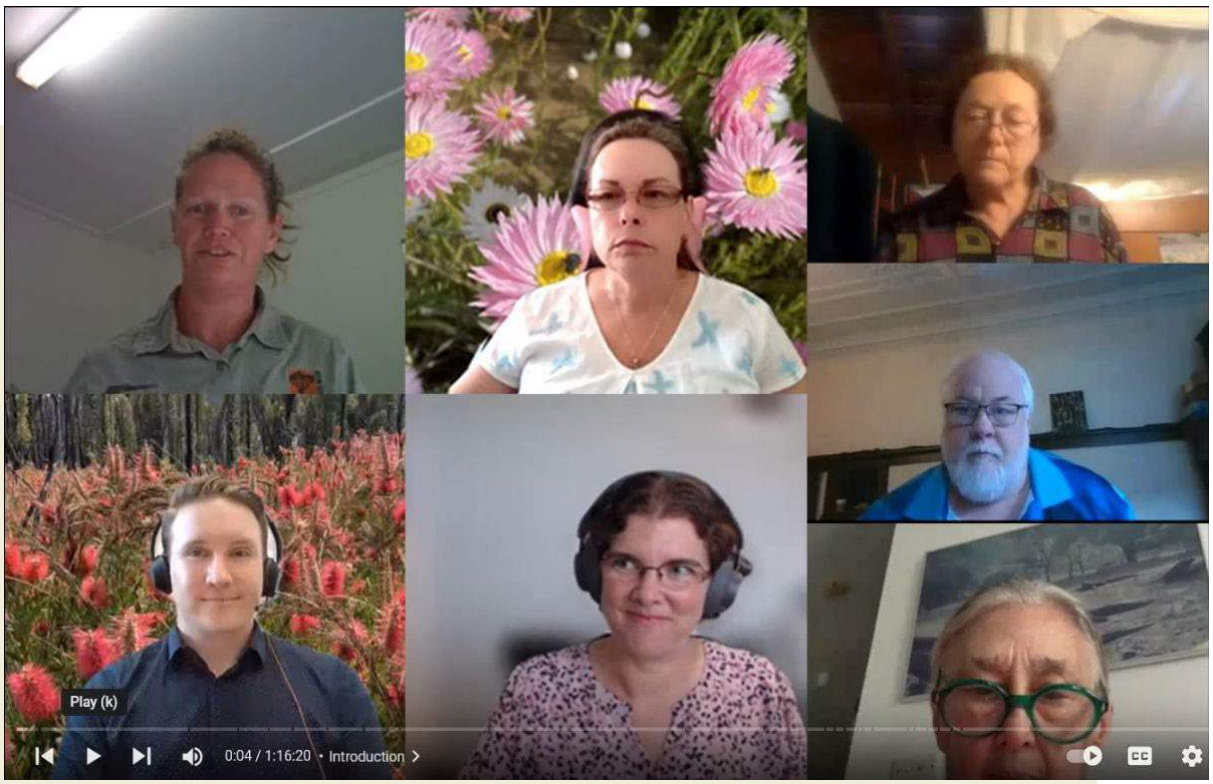
species in the face of rapid decline, collection of germplasm to preserve genetic variation, propagation of ex-situ collections, and planting of collections in botanic gardens of all scales. In another video, Peter Gould and the volunteers of Lismore Rainforest Botanic Gardens walked us through their Native Guava collection.

Zoe Knapp talked about the benefits of the project including hands-on experience for staff using digital technology, the ability to use living collections for research and education, and the importance of sharing information and using an agreed approach to establish collections.

Bradley Desmond (Acting National Coordinator, Australian Seed Bank Partnership) outlined preliminary results of last year's inventory of priority Myrtaceae species held in ex situ collections across Australia and New Zealand. The Council of Heads of Australian Botanic Gardens (CHABG) and BGANZ undertook this first country-wide stocktake of Myrtaceae insurance populations, with thanks to the 29 facilities and their staff who shared data. This will help to understand the ex-situ representation of this Myrtle Rust affected family, and inform strategic planning, management and research.

Many facilities are actively monitoring for Myrtle Rust, and respondents shared whether Myrtle Rust had been observed nearby (within 5km). Existing collections of wild sourced species include both whole plants (>13000 accessions) and seed (>8000 accessions). Many priority species identified in the National Action Plan are already established ex situ, with gaps identified to guide future collections. Stay tuned for the final report.

This webinar was supported by funding from the Australian Government.



Presenters at the online Myrtle Rust webinar held March 2023.

Flora After Fire
Winners, losers and lessons

16 August 2023

Australian Network for Plant Conservation Inc

UNSW Centre for Ecosystem Science

'Flora After Fire – winners, losers and lessons' Post-fire Symposium

https://www.anpc.asn.au/post-fire-recovery-symposium/

In collaboration with the Centre for Ecosystem Science, UNSW, the ANPC held this free online symposium in August, focused on the post-fire recovery of native vegetation with special emphasis on the Black Summer impacts and recovery. We had an excellent line up of 22 experts and experienced practitioners provide a variety of presentations on three key themes: plant and fire relationships, impacts and observations (case studies), and lessons and actions moving forward. The Symposium attracted 256 registrations and the recordings have been made available on the ANPC YouTube channel (to date the two sections have been viewed a combined 565 times).

Topics included:

- Post-fire epiphytic orchid surveys
- Rainforests in SE NSW and the Western Dorrigo
- Plant disease after fire - Bundjalung Country
- Kangaroo Island seed production area for restoration
- Improving the evidence base to support decision-making
- Planning for post fire restoration and reintroductions
- Threat assessments and revised threatened species listings
- Planned Actions of the NSW Bushfire and Natural Hazards Research Centre Environment Node

Thank you to everyone who joined us and to all our fantastic speakers. We appreciate you spending your time to share your expertise with our community. Special thanks to Chantelle Doyle for planning and facilitating the workshop, and the UNSW's Threatened Rare and Endemic Plant Ecology Research Group for their support. The results of the evaluation survey were very positive, and we look forward to being able to hold similar events in the future:

"So many brilliant talks on the interactions between fire and plants/seeds".

"Great talks from extremely knowledgeable people on a topic that is rarely discussed".

"The format of starting with some problems and moving to current potential solutions was good".

"All presenters did a good job of presenting their research in a 'plain english' way - great for those who do not have a high level of academic knowledge".

"It was great to hear broad range of research surrounding the 2019/20 event, some of which I would not usually have a chance to deep dive into".

"Excellent ecological overview of the response to the Black Summer fires".

"For me as a volunteer, the symposium is a great opportunity to see the big picture, and potentially to prepare for future challenges relating to bushfire".

"I got a lot out of the symposium, particularly about impacts on biodiversity from frequency and severity, fire seasonality, KI fires, AABR fire first aid and where to focus response and where reintroduction is not likely to be needed".

Australasian Myrtle Rust Conference

https://www.anpc.asn.au/news/australasian-myrtle-rust-conference-2/ https://eee.eventsair.com/myrtle-rust-conference/

Myrtle Rust threatens an estimated 350 Australian plants, killing new growth, buds and flowers, meaning severely impacted species can no longer reproduce. Worst affected species will disappear from the wild. Myrtle Rust is having such a devastating impact on some native plants, that scientists, community groups and First Nations groups in Australia and New Zealand are working together to devise an Australasian response.

In June more than 90 people, including many from New Zealand, gathered in Sydney to discuss developments across the rapidly expanding field of Myrtle Rust research and conservation action and share knowledge at the inaugural Australasian Myrtle Rust Conference. It brought researchers and experts together to discuss future Myrtle Rust management options and research priorities. Indigenous representation and voice, from both Australia and New Zealand, was the highest of any Australian-based Myrtle Rust conference so far. Included in this event was a poster session and optional field trip to view Myrtle Rust where it is heavily impacting Australian native plants.

The conference was followed by a two-day workshop on the screening potential for rust-tolerant genotypes in some of the most severely affected species, as a basis for reinforcing the declining populations. Conference attendee and guest speaker Dr Richard Sniezko (US Department of Agriculture Forest Service), who has a long history in breeding North American trees for disease resistance, has helped take this management option to a firmer level. Recordings from the conference have been made available on the ANPC's YouTube Channel.

The ANPC then produced a report on the outcomes and achievements of the Conference and workshop, which was submitted to the Department of Climate Change, Energy, Environment and Water for approval. This will help transfer awareness of current research and conservation practice between the countries and Australian states, and will feed into the Commonwealth's development of a Threat Abatement Plan and parallel work in various states.

The ANPC was proud to be collaborate on this conference with the University of Sydney Institute of Agriculture, DCCEEW, Australasian Plant Pathology Society, Plant Health Australia, Biosecurity New Zealand and QLD Department of Environment and Science. Thank you to ANPC Outreach Delegate Bob Makinson for pulling the report together.

Several key themes emerged from the 50 presentations, giving rise to potential simultaneous directions to tackle Myrtle Rust incursions and extinctions:

- **Status of Myrtle Rust** in Aotearoa (New Zealand) and Australia, including current ex situ holdings (Bradley Desmond).
- **Understanding host:pathogen interactions** and well as genetic lineages and spread.
- **Resistance breeding program** using examples from the white pine blister rust programs and genomics informed programs.
- **First Nations response** for Taonga impacted by Myrtle Rust and in QLD and NSW.
- **Ex situ conservation methods** such as specialised seed banking, cryopreservation and tissue culture, as well as dispersed collections of emergency species.
- **Genetics for planning** conservation collections including identification of genetic diversity of impacted species.
- **Resistance identification** and screening using biomarkers and genomics to optimise ex situ holdings for reintroduction and resistance.
- **Emerging detection options** including remote rust spore detection and thermal imaging.
- **Predictive modelling** of refugia.
- **Local management actions** to eradicate and contain.
- **Pre and post infection treatments** such as dRNA foliar treatment.

Participants at the Australasian Myrtle Rust Conference. Credit: Chantelle Doyle

Bob Makinson, ANPC Outreach Delegate and Myrtle Rust champion (left), with fellow rust warriors Peri Tobias from University of Sydney and Geoff Pegg from the Queensland Department of Agriculture and Fisheries, at the Australasian Myrtle Rust Conference. Credit: Chantelle Doyle

Plant Translocation Workshop "Beyond the Guidelines" – Kensington WA, 16 November 2023

https://www.anpc.asn.au/events-cat/plant-translocation-workshop-beyond-the-guidelines/

We have been busy planning this in-person workshop to be held on 16 November as part of the 3rd International Conservation Translocations Conference. Targeted at a range of plant translocation practitioners including researchers, government, consultancy and community groups, the workshop will focus on aspects of planning and practice that can improve the likelihood of establishing healthy, resilient and recruiting plant populations, that will persist over the long term. It will include practical examples of sourcing seed or other germplasm types, selecting recipient sites (macro and microsites), post planting management techniques and genetic health assessments. We will also address creation of populations that are resilient to disturbance. Thanks to ANPC Project Manager Chantelle Doyle and ANPC Committee member Leonie Monks for all their efforts in organising the workshop, all the speakers, and the WA Department of Biodiversity Conservation and Attractions and the UNSW's Threatened Rare and Endemic Plant Ecology Research Group for their support.

APCC14 Conference

The next ANPC conference will be held in Southeast Queensland in 2024. We are currently investigating potential venues and forming an organising committee. More information will be available very soon. For updates, check https://www.anpc.asn.au/conferences/apcc14/.

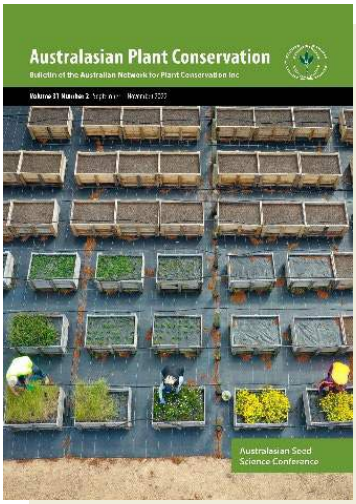
Australasian Plant Conservation (APC)

APC, our quarterly bulletin, has continued to publish high-quality articles relevant to a broad range of plant conservation practitioners and managers. We welcomed Dr Nathan Emery as the new APC editor 12 months ago and he has done an incredible job collating, reviewing and chasing up articles for APC. However, a new more demanding job has necessitated his recent resignation from the position, and we are currently seeking a replacement. The ANPC would like to thank Nathan for all his work this year as editor, as well as for the last few years as associate editor assisting Heidi Zimmer. We would also like to thank Christine Fernance who assisted Nathan this year as Associate Editor. I would like to sincerely thank Nathan and Christine for all their efforts over the past year in ensuring that APC continues to be a quality and well-respected publication communicating Australasian plant conservation issues. Thank you also to the many authors who have contributed to these editions this year.

Nathan introduced a new "Photos from..." section in APC this year. Do you have a great photo from the field, nursery, garden or lab? We'd love to share it. This is your chance to capture a project highlight, show what's growing in the garden or flaunt that scenic field work location. We're seeking one high resolution photo (preferably 300ppi) with a 1-2 paragraph summary to highlight what's happening around Australia in plant conservation. Send your images and captions to editor@anpc.asn.au.

This year, APC has featured a wide range of articles on such diverse topics as *ex situ* conservation, living plant collections for horticultural research, seed banking, threatened plant translocation, papers from the Australasian Seed Science Conference, orchid pollination, restoring seagrass meadows, a climate assessment tool, impacts of drought, new records of endangered species and biodiversity field guides, as well as the regular news from the Australian Seed Bank Partnership and ANPC events and projects.

The Spring 2023 edition will be out soon, with office staff Richie and Jo currently filling in the position until a new editor is found. Submissions for articles to be featured in the autumn edition of APC are due 1 February 2024, more information on how to submit can be found here.



ESA-SCBO 2022

ANPC Committee Members and Project Managers attended the conference of the Ecological Society of Australia and the Society for Conservation Biology Oceania in Wollongong at the end of 2022. President Tony Auld's presentation was on 'Understanding fire impacts on plants'. Amelia Martyn Yenson and Chantelle Doyle spoke during the Emotions in Ecology symposium (which Chantelle helped to convene).

UN Decade for Ecosystem Restoration

The ANPC proudly become an Actor for the UN Decade on Ecosystem Restoration (2021-2030) this year. The decade highlights the urgent need to prevent, halt and reverse ecosystem degradation around the world to combat climate change and species loss. Learn what the decade for ecosystem restoration is about in this short video https://www.youtube.com/watch?v=LIPMERHaLKM

COMMUNICATIONS

New resource page – "Conservation of exotic, economic and ornamental plants"

https://www.anpc.asn.au/conservation-of-exotic-economic-and-ornamental-plants/

The ANPC published a new resource page on our website this year, with information about the conservation of exotic, economic and ornamental plants. The work of the ANPC focuses largely on the conservation of Australian native plant species and ecosystems, but we also recognise and value work, here and overseas, to conserve what are often called 'old varieties' of agricultural and ornamental plants of Australian or exotic origin. Many of these are in danger of becoming extinct. This new webpage contains links to information sources on conservation of exotic, economic and ornamental plants.

ANPC in the News

Australia lacks the seed supplies, knowledge for nature repair market, experts say - Carbon Pulse, 26 July 2023
https://carbon-pulse.com/213942/

"The ANPC has identified a "high level of concern" across the native seed sector that future demand for seed would be difficult to meet from the wild.
"This is due to the high costs of seed collection and the lack of seed from a broad range of the species that are critical for restoration.
"There may not be enough native seed in many regions to support the large-scale restoration required for landscape recovery."
The ANPC said the further development and funding of seed production areas - where native species are cultivated for their seeds, like agricultural crops - would be critical to meeting seed needs and preserving wild populations.
"High quality seed from a range of native species is the foundation for restoring many of our threatened plants and natural landscapes."

Australia doing 'very poorly' at protecting unique plants, researchers warn – Biodiversity Council, 10 October 2023
https://biodiversitycouncil.org.au/#stories

" President of the Australian Network for Plant Conservation, Dr Tony Auld from the University of New South Wales said that,
"Conserving plants is essential to maintaining functioning ecosystems and habitat for many species. Globally, plants face a range of threats, with new threats emerging as the climate warms.
"To better direct conservation priorities, Australia needs increased efforts on both reducing the impact of threats and assessing the risk of threats to plants."
"Conservation should focus on reducing ongoing clearing of native habitat, controlling weeds, pathogens and pest species, especially introduced animals that cause overgrazing, and effectively managing changes to fire and flood regimes.
"We also need to do more to restore degraded habitat," Dr Auld said. The findings of the assessment have also been published in the scientific journal Plants People Planet."

Social media

ANPC channel analytics

	Subscribers as of 18 October 2023	Changes since 19 October 2022
E-newsletter	**1,176**	**Up by 168**
Twitter	**1,555**	**Up by 2**
Facebook	**4,276**	**Down by 37**
YouTube	**290**	**Up by 146**
LinkedIn	**77 public (311 in private group)**	**Up by 77 (new) (private group up by 9)**

Our outreach efforts continue to expand through social media with the regular sharing of news and events in plant conservation via Twitter (now X), Facebook and LinkedIn. Posting several times a week has seen an increase in subscribers across all channels except for Facebook. We experienced a large increase in our numbers of YouTube subscribers, thanks in large part to the posting of the "Myrtle Rust – The Silent Killer" video back in November 2022, which has been shared widely and has had over 6000 views so far. A greater emphasis has also been placed on having a public presence on LinkedIn (rather than just a private group). It is early days, but we are steadily developing a following and posting more regularly there.

Highlights of our posting for the past few months has been around the Australasian Myrtle Rust Conference, the Flora After Fire Symposium, the ex situ conservation paper in Plants, People, Planet, and monthly posts highlighting species from our "Preventing the extinction of Victoria's threatened flora" collaborative project with Royal Botanic Gardens Victoria.

Website update

Richie Southerton, our Communications Manager, has started the process of updating and modernising our website, starting with a visual and layout redesign, and eventually progressing to reorganising current and archiving outdated information. Richie has completed a review (or 'stocktake') of the pages on the website to begin this part of the process.

The major component of the website redesign will be a new landing page for Myrtle Rust which will make it easier to navigate quickly through rather than having to scroll down a long page of text and links. Watch this space for updates.

Free APCC13 Conference recordings and posters

https://www.anpc.asn.au/conferences/apcc13/recordings/
https://www.anpc.asn.au/conferences/apcc13/posters-2/

The recordings and posters from our 13th Australasian Plant Conservation Conference were made freely available to everyone this year. We held this event online and in person in April 2022 with the overarching theme 'Seeds to recovery'. Presentations, workshops and field trips covered topics such as recovery of native plants and vegetation after fire, and native seed supply. Delegates had access to the recordings for the initial 12 months following the conference.

Bob Makinson receives Australian Biosecurity Award

I would like to congratulate our Outreach Delegate Bob Makinson who received a 2022 Australian Biosecurity Award in March this year, in the Environmental Biosecurity category. Bob has been instrumental in galvanising attention and action for the introduced plant disease Myrtle Rust (*Austropuccinia psidii*). He has used his botanical and conservation expertise to raise awareness, and to secure support and funding across community groups, research institutions and governments at all levels. Learn more about the incredible contribution Bob has made and watch a video on his work here https://www.agriculture.gov.au/about/news/aba-bob-makinson

Bob accepting the award, on the right is the MC, Richard Morecroft and on the left is the Minister for Agriculture, Fisheries and Forestry, Senator the Hon. Murray Watt who presented the award. Credit: Jo Lynch.

STAFFING

Many thanks to all our staff who work above and beyond the call of duty for the ANPC. Their dedication, advice and support make my role and the work of the Committee much more effective and ensures that the ANPC continues to function as a highly respected conservation organisation. It has been wonderful to see all the results of their excellent work come to fruition in 2023.

We said farewell to our Project Manager Dr Amelia Martyn Yenson in April this year. Amelia worked with the ANPC from February 2020 as Project Manager for the Germplasm Guidelines review, publication and promulgation, and then for the Safe Custody for Native Guava project. She also led the development of the scientific paper on exceptional species She has been a pleasure to work with and we wish her all the best in her future endeavours. Thank you Amelia, farewell and good luck!

We also said farewell to our Communications manager Christine Fernance in May this year. Over her three years with the ANPC Christine significantly enhanced our communications on social media, improved our e-newsletter and website, introduced the development of communication plans for all our projects, and chaired the membership subcommittee. We also greatly benefited from her terrific graphic design skills and grace under Zoom webinar pressure!

We welcomed Richie Southerton as our new Communications Manager in August. Richie previously worked with CSIRO at Black Mountain on photography and communications material for the new weed identification app WeedScan. He has tertiary qualifications in sustainability and environmental science, and is currently doing a Masters in Science Communication. He is also an excellent nature photographer which can be evidenced here: https://www.richpixelphotography.com/. He is well acquainted with the outdoors, having worked as a park ranger with Parks Victoria in Gippsland, and on various field expeditions with CSIRO and others. Richie's focus is improving the website, social media, ANPC e-news, project and event promotions, and developing and implementing communication strategies.

We also welcomed back our Project Manager Chantelle Doyle who has done an amazing job this year, planning and coordinating the Flora After Fire Symposium, the extension of the Myrtle Rust project and the Perth plant translocation workshop coming up next week. These have all tied in nicely with her other roles at the UNSW and Research Centre for Ecosystem Resilience.

We recruited Jason Halford as the Project Manager for the Queensland Threatened Plant Network project in August, however he will resign at the end of November for another role. Jason worked at the Queensland Herbarium and Brisbane Botanic Gardens Mount Coot-tha for nearly 10 years. He has been working on background project planning and prioritisation before the project's launch in early 2024.

I am excited to report that Paul Donatiu will commence in the role in early December. Paul brings established skills in project management, communication and stakeholder engagement, masters-level qualifications in Environmental Science, and 25yrs experience in conservation, species recovery and environmental management. He has been directly responsible for the resourcing, management, and delivery of large conservation projects in Queensland and NSW.

Our Business Manager, Jo Lynch, has continued her excellent work in the office with grant applications and reports, along with overall project and budget management. Sincere thanks to our office volunteer Robert Hawes, who has helped enormously with various administrative and financial tasks this year.

I am grateful to all the Committee members for their tremendous support over the year. They all have significant commitments outside the ANPC, and it is often challenging to devote the time required to be active committee members. The involvement in the committee by all members is a clear demonstration of their dedication to the ANPC and its goals in improving plant conservation.

I would especially like to thank Andrew Crawford, Singarayer Florentine, Lydia Guja, Cathy Offord and Damian Wrigley who are leaving the committee this year, and I sincerely thank them for their time and support. Also David Coates who is stepping down as Vice President this year, but is nominating as an ordinary member.

FUNDING

Our financial situation will be reported on in detail separately at the AGM but our key sources of income this year have included:

- Australian Government
- NSW Department of Planning and Environment
- QLD Department of Environment and Science
- Victorian Government
- San Diego Zoo Wildlife Alliance
- Memberships and donations.

The hosting of the ANPC by the Australian National Botanic Gardens remains a crucial support for us, and a major contribution by the ANBG to the national effort for plant conservation. This includes provision of office space, computers, phones, electricity, furniture, and a printer. I would like to sincerely thank the Gardens for this support, and look forward to continuing this close relationship into the future.

THE COMING YEAR

2024 will again be a very busy year for the ANPC as we plan to undertake the following:

- Plan and hold our 14th Australasian Plant Conservation Conference.
- Launch and implement the project 'Supporting coordinated recovery of Queensland threatened plants' through the new Queensland Threatened Plant Network (QTPN).
- Hold a quarterly series of informal virtual get togethers to discuss Myrtle Rust management for practitioners, in collaboration with BCARM, to fulfill an identified need for horticulturists and practitioners managing Myrtle Rust susceptible collections to collaborate, share ideas and workshop problems.
- Organise further plant conservation webinars and training workshops.
- Continue surveys of plant species affected by the 2019/20 fires.
- Undertake further fundraising to build on our work on the Myrtle Rust threat.
- Seek further funding for essential projects and ANPC Project Manager roles.
- Develop a five-year strategic plan for the ANPC.
- Plan for Stage 2 of the Healthy Seeds project.

2023 has been another busy year for the ANPC, in particular with ongoing efforts on the conservation of key species impacted by myrtle rust and fire. It is also exciting to be commencing our collaboration with the Queensland government to promote ongoing conservation of threatened plants in that state. A big thanks to everyone involved in all the ANPC's activities for the year, your efforts are greatly appreciated. 2024 looks like being another busy year with our next ANPC conference in Queensland. I would just like to say I have enjoyed my 4 years as President and look forward to watching the ANPC continue to play an effective role in plant conservation in the years to come.

Dr Tony Auld
President
Australian Network for Plant Conservation Inc.

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