



# 2022-23 Annual Report



Australian  
Seed Bank  
Partnership

Safeguarding Australia's flora, through a  
national network of germplasm collections

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The Australian Seed Bank Partnership recognises First Nations Peoples throughout Australia, including their continuing connection to Country. We pay our respects to Elders past, present and future.

The Partnership recognise that these connections to Country include the people, plants, animals, land, water and sky. As we continue to work across Australia to support long-term conservation of Australia's rich and endemic flora, we will strive to build and maintain honest and trusting relationships with First Nations Peoples.

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Amelia Martyn Yenson, with thanks to the  
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Cover: Omeo Stork's-bill (*Pelargonium* sp. *Striatellum*  
(G.W.Carr 10345)) (Image: Bradley Desmond).

This page: *Lysiosepalum abollatum* seeds  
(Image: Andrew Crawford).



# Letter from the Chair



The Australian Seed Bank Partnership (ASBP) present our annual report, showcasing yet another year of successful conservation, research and knowledge sharing. Like the resilient plants we secure and study throughout Australia, the Partnership continuously adapts, grows and emerges stronger in the face of recent challenges. The global context of extreme weather events, shifts in fire patterns and the emergence of plant diseases such as Myrtle Rust and Phytophthora serve as a stark reminder that national and global endeavours to protect native flora have assumed greater significance than ever before.

At the national level, the Partnership's recently released Strategic Plan establishes a clear focus on achieving four key outcomes: expanding our collections, research and restoration activities; generating and disseminating knowledge; engaging with diverse communities, including First Nations Peoples; and investing in our human resources and infrastructure. It is gratifying to witness ongoing initiatives such as the Australian Virtual Seed Bank collaboration with the Atlas of Living Australia and the ongoing Collections Review (see our *Year in review* section for more information). These endeavours not only enable us to learn from past approaches but also position us to effectively confront future challenges within an environment characterised by uncertainty. Our collective actions at the national level are meticulously documented for the benefit of the broader conservation community, exemplified by projects of this nature, whose imminent launch we eagerly anticipate.

We extend a warm welcome to the incoming National Steering Committee of the ASBP, whose inaugural meeting took place in June. We express our gratitude to Dr David Merritt, who assumes the role of Chair, and to the National Coordinator, who will serve as Deputy Chair. The Steering Committee will play a pivotal role in implementing the Partnership's Strategic Plan, with a strong emphasis on scientific

acumen and the ability to engage in all aspects of seed banking, including informing our fundraising initiatives.

While our conservation actions yield significant local and regional impacts, as exemplified by the captivating examples elucidated in this report, the work undertaken by the Council of Heads of Australian Botanic Gardens (CHABG) and the ASBP resonates harmoniously with the global conservation priorities outlined in the Post-2020 Global Biodiversity Framework under the UN Convention on Biological Diversity.

CHABG acknowledges the exceptional contributions made by the outgoing National Coordinator, Damian Wrigley, particularly his extensive international networks and outstanding stakeholder engagement. We extend our gratitude for his achievements in strengthening our national seed banking network and for spearheading the development of a comprehensive Strategic Plan to guide our future endeavours. Furthermore, we express our appreciation to the Secretariat for their unwavering support of CHABG, Partners and Associates throughout the past year, ensuring the continuity of our on-ground activities, knowledge sharing and collaborations during a dynamic period of change.

On behalf of the members of CHABG, I wholeheartedly encourage you to further explore our work, celebrate the resilience and capabilities of our esteemed Partners and contemplate the collaborative actions we can undertake to safeguard Australia's invaluable floral heritage.

**Denise Ora**

Chair, Council of Heads of Australian Botanic Gardens Inc.

# Letter from the National Coordinator



This year has been one of reflection and change for the Australian Seed Bank Partnership, as we farewelled our National Coordinator Mr Damian Wrigley in February. Damian's energy and enthusiasm for plant conservation over the last six years are reflected in the breadth of successful activities carried out across the Partnership. We know our Partners and Associates miss his cheerful collaboration and thoughtful strategic input. We are fortunate that he is taking his passion and experience into a new role as Manager of Living Collections and Conservation at the Botanic Gardens of Sydney. Damian leaves the Partnership in a strong position with a clear strategic direction and with key projects in place to ensure we can capitalise on past success as we look to the future.

I would like to thank Assistant Coordinator Bradley Desmond for stepping into the National Coordinator role from February to May this year, capably supporting our Partners in their ongoing projects and ensuring continuity for the CHABG, Partners and Associates. We are also grateful for the support of Janiebelle Reilly, who provided additional experience and support around communication for a short time while Bradley was taking on National Coordinator duties.

It was a great honour to join the Partnership as Acting National Coordinator in mid-May, with the opportunity to build on the considerable legacy of Damian Wrigley, Lucy Sutherland and Tom North as previous coordinators. It has been a pleasure to meet the members of CHABG, and I particularly thank Anthony Whalen for welcoming me and ensuring continuity of funding for the Secretariat through the Australian National Botanic Gardens, and Denise Ora for hosting me at the Australian PlantBank.

The range of conservation activities carried out across the Partnership is once again inspiring, as we reflect on the achievements of the past year.

Current projects such as the Australian Virtual Seed Bank collaboration with the Atlas of Living Australia, the Collections Review and publication of papers from the Australasian Seed Science Conference in 2021 provide an opportunity to measure our success over a longer time frame. Projects such as these help the Secretariat and our Partners to consolidate knowledge, understand gaps in our collections and find ways to enhance our collections and conservation activities in line with global best practice.

I encourage you to read the *Partnership highlights* section (page 39) to learn about the amazing plant species we secure, study and store, and the diverse habitats where our Partners undertake their work. Keep up to date with our project achievements in the *Year in review* section (page 21), which captures projects being completed as a bushfire response, and ongoing activities within the Rare Bloom Project™, Critically Endangered Project and Seeds of Hope Project.

Change continues to be a constant, with facilities growing, new technologies incorporated into seed banking practice and staff developing and consolidating their skills across the Partnership.

We recognise the dedication and commitment required to carry out seed conservation activities and thank all our contributors for their efforts over the last year. We hope you enjoy our annual report, sharing our passion for Australia's incredible flora.

**Amelia Martyn Yenson**

Acting National Coordinator,  
Australian Seed Bank Partnership

# Who we are

## Our vision

A future where Australia's native plant diversity is valued, understood and conserved for the benefit of all.



## Our strategic focus

To deliver a national effort that contributes to the conservation of Australia's native plant diversity through collaborative and sustainable seed and germplasm collecting, banking, research and knowledge sharing



## Our services

The Australian Seed Bank Partnership (ASBP) is a national collaboration of seed banks and flora-focused organisations delivering strategic conservation actions for Australia's native seed. Our dedicated Partners and Associates undertake widespread collecting and complex research to support *ex situ* seed conservation, as well as seed science that underpins these efforts.

Our main areas of service include:

### Germplasm collection and storage

Our native flora face an uncertain future due to the impacts of a rapidly changing climate, biological invasions, land clearing and severe weather events. *Ex situ* seed banking is an essential tool for the safe and efficient storage of wild plant genetic material. This cost-effective method for maintaining genetically diverse and representative collections allows a network of seed banks to strategically store, conserve and research our diverse Australian flora.



### Knowledge sharing

Our national network of experts contribute to the development of policies, programs, research and on-ground projects that seek to improve biodiversity outcomes. We do this by sharing our knowledge and expertise, highlighting good news stories and updating national guidelines and standards. We continuously strive to improve our plant conservation data and make it openly available through the Australian Virtual Seed Bank portal platform.



### Science and research

Our seed science endeavours are critical to understanding the biology and ecology of the seeds we collect and for developing specific methodologies for germinating and storing seed. Our research into the evolution and adaptability of native species informs restoration projects across the country.



### Using our collections

The seeds we secure are always collected for a reason beyond a life in the bank. Collections are used for growing on and planting out at both *in situ* and *ex situ* locations. These plants play an important part in translocation or restoration projects to bolster wild populations and ecosystem management. Germinants from germination trials are also used for seed production areas or living collections in botanic gardens to help educate the public about our work.



# Our outcome areas

Four outcome areas will also guide the evolution of the Partnership into its next decade.



## Outcome 1 Growing our collections, research and restoration contributions

The Partnership will increase the representation of native species and their genetic diversity across our collections. We will focus on increasing the representation of the Australian flora, and the collection and storage of maternal lines to better understand the genetic diversity within species in *ex situ* collections, particularly those secured during our earlier work. This information will inform the prioritisation of future collecting programs, translocations, restoration and research, particularly for threatened species. The Partnership will continue to be at the international forefront of *ex situ* conservation science by supporting and undertaking research into germplasm storage, seed biology and ecology, and informing the management and use of collections to contribute substantially to the global discourse on plant conservation, propagation and use in translocations and ecosystem restoration. The use of Australia's seed collections will continue to increase as further research and restoration opportunities are created through Partner projects and collaborations with governments, First Nations Peoples and land managers across the continent and throughout the region.



## Outcome 2 Growing our investments in our facilities and people

Growing investments in seed bank facilities and people is crucial to ensuring Australia's seed banks grow their capacity and capabilities to address increasing threats to biodiversity and increasing demand for the use of collections. This will be done in line with international gene banking standards, scientific advances in germplasm conservation, and international standards for ecosystem restoration. We will continue to invest in training opportunities through collaborations with universities, academic institutions and conservation organisations to equip the next generation of conservation scientists and practitioners with the necessary skills and expertise. We will work with governments, business and the philanthropic community to secure these strategic investments. We will ensure these investments continue to grow in line with conservation needs, providing greater future capacity and capability to respond to threats, restore native habitats and secure better biodiversity outcomes for Australia.



### Outcome 3 Improving engagement and partnerships with Australia's First Nations Peoples

The ASBP recognises First Nations Peoples throughout Australia, including their continuing connection to Country. We pay our respects to Elders past, present and future. Our facilities are located on many different lands throughout Australia, and we undertake collecting, research, translocations and restoration activities across many more. The Partnership is therefore committed to Reconciliation with Australia's First Nations Peoples. Over the coming years, we will build on our existing collaborations with Indigenous groups to support best practice conservation in line with cultural expectations. We will seek to learn together and improve our understanding and approaches to working on Country for better biodiversity outcomes. We will also strive to secure funding that supports co-development and co-delivery of seed conservation projects on Country, and share any benefits realised through these collaborative efforts, including knowledge and expertise, to complement the work of traditional custodians in conserving flora on Country.

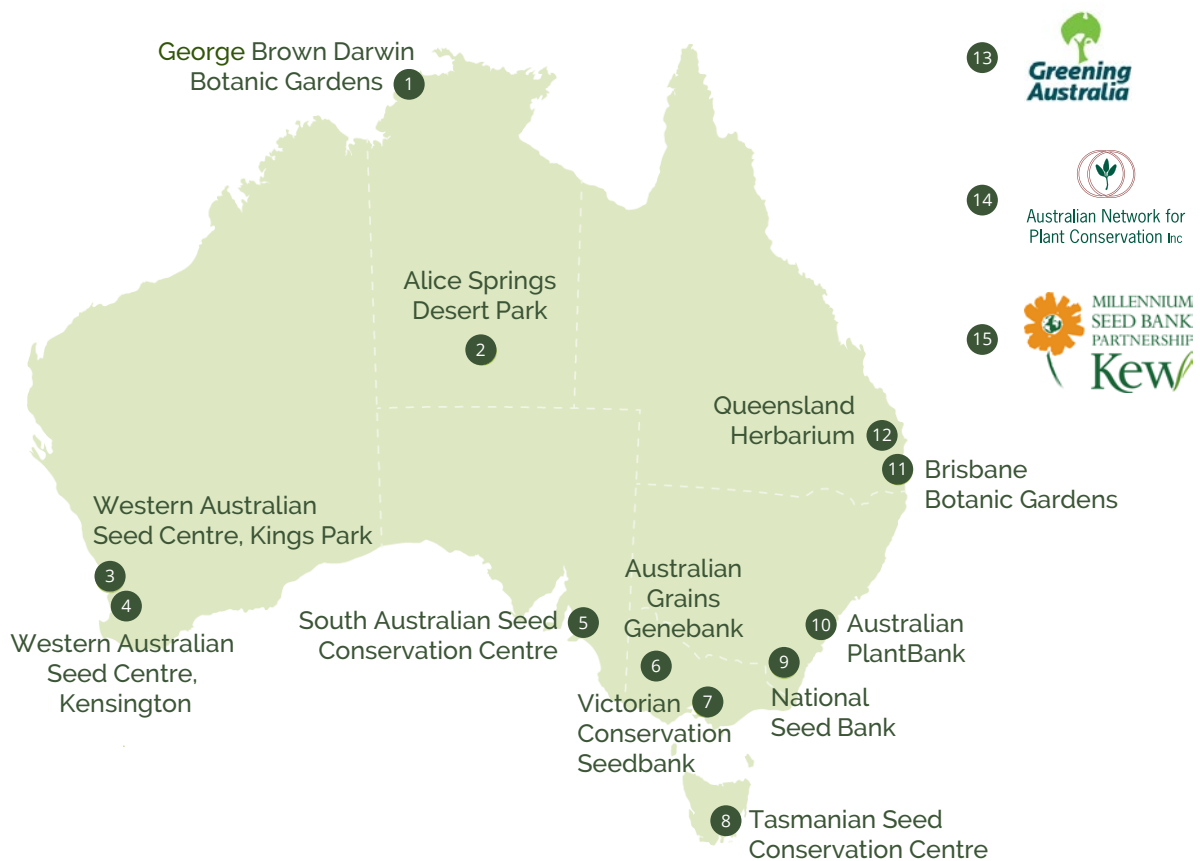


### Outcome 4 Developing and sharing knowledge

We will continue to support the implementation of better conservation strategies, policies and programs at the local, national and international levels by working with governments, industry and the community. We will share our knowledge and data with environmental decision-makers and on-ground practitioners. The Partnership will continue to provide open access to seed and germination data across our Partnership collections online through the Australian Virtual Seed Bank. We will advocate for best practice germplasm conservation by encouraging awareness and use of the guidelines for *Plant germplasm conservation in Australia* (3rd edition) (Martyn Yenson et al. 2021, published by the Australian Network for Plant Conservation (ANPC)), and we will build capacity across the sector by actively sharing our knowledge with the global seed banking and conservation community to enable transformation of the sector.

## Our Partners

The Partnership is an alliance of organisations including at least one conservation seed bank in every Australian state and territory, as well as state environment agencies and non-government organisations (NGOs) such as the Australian Network for Plant Conservation, Greening Australia and the Millennium Seed Bank Partnership of the Royal Botanic Gardens, Kew, in the UK. Our links across conservation and restoration seed banks, governments and the NGO sector allows for strategic national collaborations, enabling our plant conservation goals to be achieved on a countrywide scale.



Our Partners are located across the country and work together to safeguard Australian plants.



## Partner organisations of the Australian Seed Bank Partnership

**1. George Brown Darwin Botanic Gardens** – Parks and Wildlife Commission of the Northern Territory (GBDBG)

**2. Alice Springs Desert Park** – Parks and Wildlife Commission of the Northern Territory (ASDP)

**3. The Western Australian Seed Centre, Kings Park** – Botanic Gardens and Parks Authority (BGPA)

**4. The Western Australian Seed Centre, Kensington** – Department of Biodiversity, Conservation and Attractions (DBCA)

**5. South Australian Seed Conservation Centre** – Botanic Gardens and State Herbarium, South Australia (BGSB)

**6. Australian Grains Genebank** – Agriculture Victoria Research Division, Department of Jobs, Precincts and Regions (AGG)

**7. The Victorian Conservation Seedbank** – Royal Botanic Gardens Victoria (RBGV)

**8. Tasmanian Seed Conservation Centre** – Royal Tasmanian Botanical Gardens (RTBG)

**9. National Seed Bank** – Australian National Botanic Gardens, Parks Australia (ANBG)

**10. The Australian PlantBank** – Australian Botanic Garden Mount Annan, Botanic Gardens of Sydney (BGS)

**11. Brisbane Botanic Gardens Seed Bank** – Brisbane City Council (BBG)

**12. The Queensland Herbarium** – Department of Environment and Science, Queensland (DESQ)

**13. Greening Australia** (GA)

**14. Australian Network for Plant Conservation** (ANPC)

**15. Millennium Seed Bank Partnership** – Royal Botanic Gardens, Kew, UK (MSBP)



## Associate organisations of the Australian Seed Bank Partnership

The Partnership delivers across a diverse range of operational and theoretical areas in collaboration with like-minded individuals, organisations and institutions both within and external to Australia. These Associates support the Partnership to deliver on our objectives across seed collection and banking, applied research, restoration and translocation action and the development of guidelines, standards and scientific advice to governments, business, individuals and land managers.

Our current Associates include:

- Atlas of Living Australia
- Australian Government Department of Climate Change, Energy, the Environment and Water
- Botanic Gardens of Australia and New Zealand Inc.
- Centre for Australian National Biodiversity Research
- Environs Kimberley
- Plant Health Australia
- CSIRO
- Society for Ecological Restoration Australasia

A list of the organisations that supported the Partnership can be found in our *Acknowledgements* section.

Undescribed *Ewartia* species going to seed in Ben Lomond National Park (Image: James Wood).



## Our history

The drive to bank Australian seed for conservation began well before the year 2000, though efforts increased significantly with the start of the Millennium Seed Bank Project supported by the Royal Botanic Gardens, Kew, UK. This international project aimed to safeguard 24,000 global plant species from extinction by 2010, in line with the targets of the Global Strategy for Plant Conservation (GSPC). Australia's contribution to this effort was significant, supported greatly by the establishment of the Australian Seed Conservation and Research Network (AuSCAR). AuSCAR provided Australian seed banks with the opportunity to collaborate more effectively at the multi-jurisdictional level, providing more strategic species targeting for conservation and research across several states.

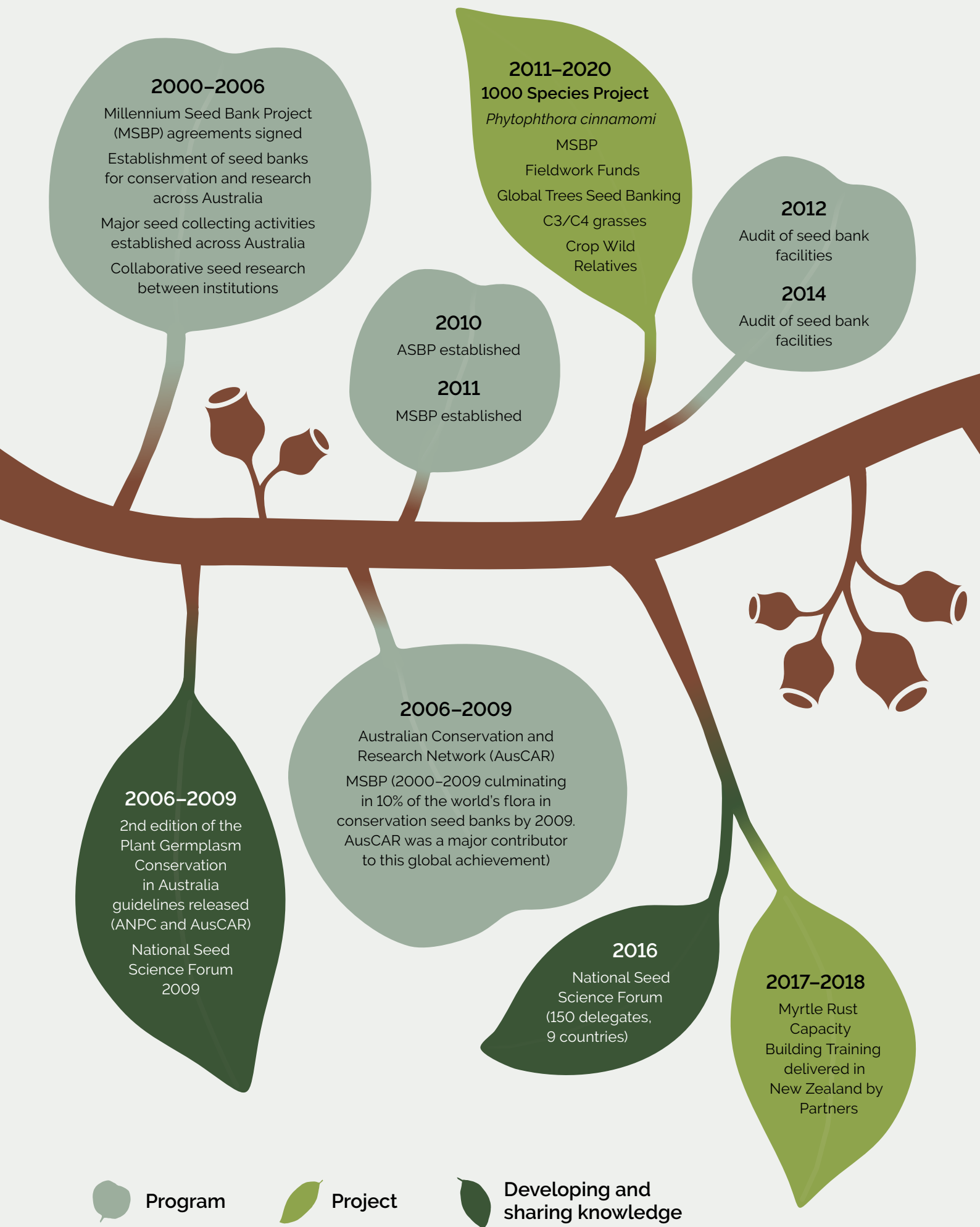
Building on the success of AuSCAR, the Council of Heads of Australian Botanic Gardens formally established the Australian Seed Bank Partnership (the Partnership) in 2010. The Partnership was the first countrywide alliance of seed banks and other organisations delivering collaborative seed collecting, banking, research and knowledge sharing. The Partnership focused on contributing to the second decade of targets of the GSPC by delivering projects in the key areas of threatened species and those taxa previously unrepresented in seed banks. Our efforts contributed to safeguarding against the effects of *Phytophthora cinnamomi* (dieback), securing collections from priority tree and grass species, and banking crop wild relatives.

All of these efforts enabled the Partnership to secure over 1,400 species under our 1,000 Species Project.

Since the 2019–20 summer bushfires, the Partnership has worked tirelessly to deliver emergency post-bushfire seed collecting and research through six projects. This work focused on the 486 plants identified by the *Wildlife and Threatened Species Bushfire Recovery Expert Panel* as requiring urgent management intervention; regional priority plants (including narrow-range endemics, fire ephemerals, Myrtle Rust-impacted species and other culturally significant flora); and threatened species listed under national, state and territory environmental legislation.

More recently, the sharing of knowledge, research and data has been a focus for the Partnership through the preparation of our Australian Virtual Seed Bank Portal, our Collections Review Project and the publication of findings from our 2021 Australian Seed Science Conference. See the *Year in review* section for more information.

The following two pages illustrate the main achievements of the Partnership since its inception. We welcome you to join us as together we write the next chapter in Australian seed banking.



**2000–2006**

Millennium Seed Bank Project (MSBP) agreements signed  
 Establishment of seed banks for conservation and research across Australia  
 Major seed collecting activities established across Australia  
 Collaborative seed research between institutions

**2011–2020**  
**1000 Species Project**

*Phytophthora cinnamomi*  
 MSBP  
 Fieldwork Funds  
 Global Trees Seed Banking  
 C3/C4 grasses  
 Crop Wild Relatives

**2012**

Audit of seed bank facilities

**2014**

Audit of seed bank facilities

**2010**

ASBP established

**2011**

MSBP established

**2006–2009**

Australian Conservation and Research Network (AusCAR)  
 MSBP (2000–2009 culminating in 10% of the world's flora in conservation seed banks by 2009. AusCAR was a major contributor to this global achievement)

**2006–2009**

2nd edition of the Plant Germplasm Conservation in Australia guidelines released (ANPC and AusCAR)  
 National Seed Science Forum 2009

**2016**

National Seed Science Forum (150 delegates, 9 countries)

**2017–2018**

Myrtle Rust Capacity Building Training delivered in New Zealand by Partners



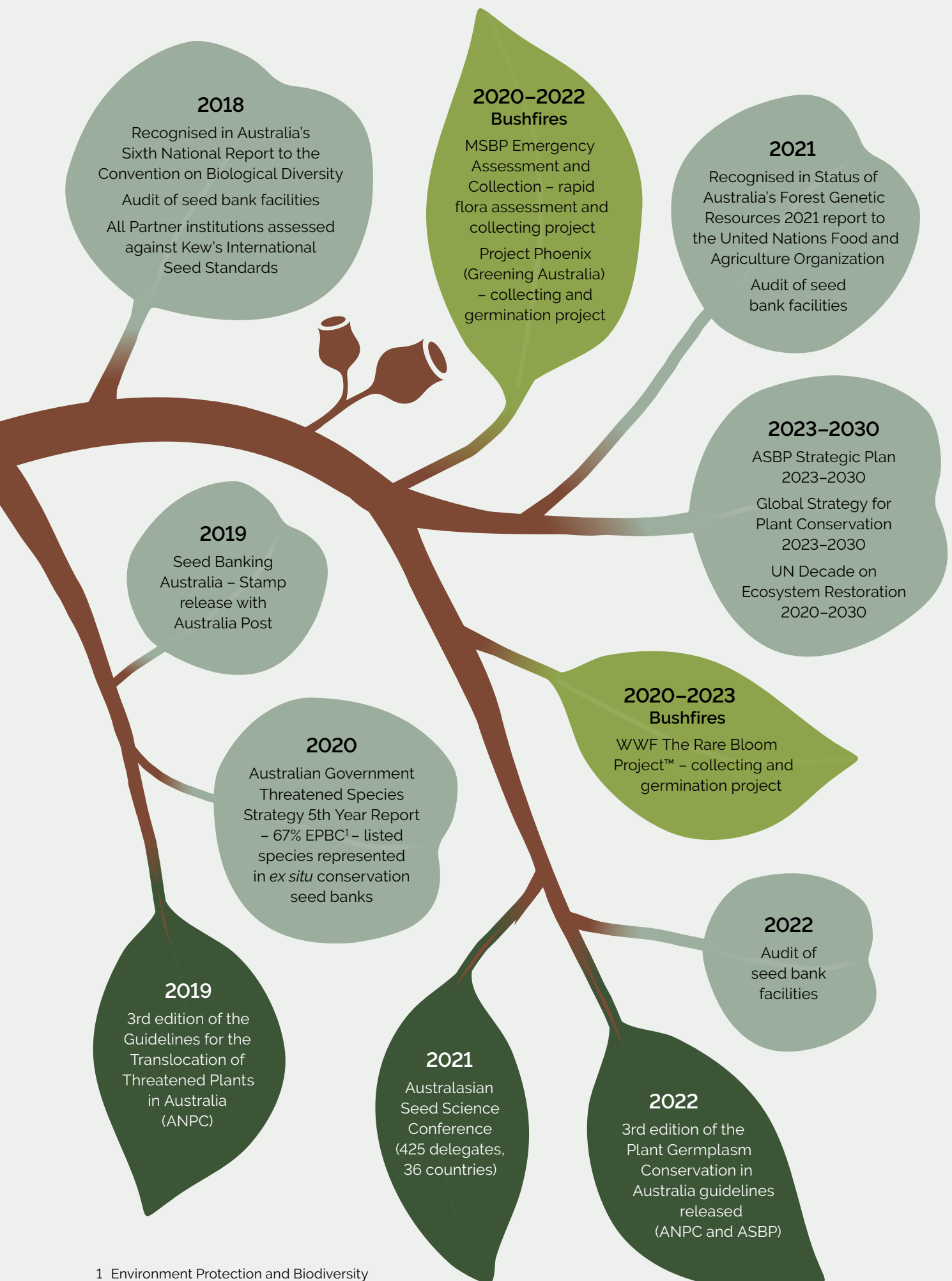
**Program**



**Project**



**Developing and sharing knowledge**



1 Environment Protection and Biodiversity Conservation Act 1999 (Cth)

## Our governance

The Council of Heads of Australian Botanic Gardens Incorporated (CHABG Inc.) draws on the expertise of senior executives from Australia's capital city botanic gardens, who guide the strategic direction of the Partnership's work, ensuring we address national plant conservation priorities and contribute to international conservation targets.

### Members of the Management Committee of the Council in 2022-23

**Ms Denise Ora** – Chief Executive, Botanic Gardens of Sydney (Chair Jun 2022–present)



Ms Denise Ora



Mr Alan Barrett

**Mr Alan Barrett** – Chief Executive Officer, Botanic Gardens and Parks Authority (Kings Park) (CHABG Secretary)

**Mr Dale Arvidsson** – Curator, Brisbane Botanic Gardens



Mr Dale Arvidsson



Prof Tim Entwisle

**Prof Tim Entwisle** – Director and Chief Executive, Royal Botanic Gardens Victoria

**Mr Bryan Harty** – Director, George Brown Darwin Botanic Gardens



Mr Bryan Harty



Mr Michael Harvey

**Mr Michael Harvey** – Director, Botanic Gardens and State Herbarium, South Australia

**Mr Yann Gagnon** – Director, Royal Tasmanian Botanical Gardens



Mr Yann Gagnon



Mr Anthony Whalen

**Mr Anthony Whalen** – Acting Executive Director, Australian National Botanic Gardens

## Other position holders

**Mr Peter Byron** – General Manager,  
Australian National Botanic Gardens, Canberra  
(CHABG Public Officer)

**Dr Brett Summerell** – Director Research and  
Chief Botanist, Botanic Gardens of Sydney  
(CHABG Treasurer)



Mr Peter Byron



Dr Brett Summerell

## Australian Seed Bank Partnership Secretariat

The role of the National Coordinator is to provide strategic leadership and program management to oversee the implementation of the Partnership's business plan, policy and operations. The Assistant Coordinators support the coordination of national *ex situ* seed conservation programs, capacity building and research collaborations. The Secretariat work with the members of the Partnership to secure the necessary funds for operations and programs that will realise the business plan for the Partnership. These positions are generously supported by funding provided by the Director of National Parks, and are hosted at the Australian National Botanic Gardens, Canberra, and the Australian PlantBank, Botanic Gardens of Sydney.

**Dr Amelia Martyn Yenson** – Acting National  
Coordinator, Australian Seed Bank Partnership

**Mr Bradley Desmond** – Assistant Coordinator,  
Australian Seed Bank Partnership

**Ms Janiebelle Reilly** – Assistant Coordinator,  
Australian Seed Bank Partnership (April–July 2023)



Dr Amelia Martyn Yenson



Mr Bradley Desmond



Ms Janiebelle Reilly

## National Steering Committee

The National Steering Committee brings together a team of leading experts from across the Partnership, who help guide the delivery of the Partnership's Strategic Plan, and practical plant germplasm conservation programs and projects. These experts range from seed scientists, botanists, taxonomists and ecologists to horticulturalists and plant conservation ambassadors. At June 2023 the committee members were:

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<b>Australian Seed Bank Partnership</b>	Dr Amelia Martyn Yenson, National Coordinator Mr Bradley Desmond, Assistant Coordinator
<b>Millennium Seed Bank Partnership</b> Royal Botanic Gardens, Kew, UK	Dr Aisyah Faruk, Conservation Partnership Coordinator (Europe and Oceania)
<b>National Seed Bank</b> Australian National Botanic Gardens, Parks Australia	Ms Millie Stevens, Acting Curator (Proxy for Dr Thomas North)  Dr Gemma Hoyle, Seed Scientist
<b>The Western Australian Seed Centre, Kings Park</b> Botanic Gardens and Parks Authority	Dr David Merritt, Principal Research Scientist (Chair of National Steering Committee)  Ms Sue McDougall, Director of the WA Botanic Garden
<b>South Australian Seed Conservation Centre</b> Botanic Gardens and State Herbarium, South Australia	Mr Jerry Smith, Senior Scientific Officer
<b>The Western Australian Seed Centre, Kensington</b> Department of Biodiversity, Conservation and Attractions	Dr Andrew Crawford, Seed Bank Manager & Australian Network for Plant Conservation Committee Member
<b>The Australian PlantBank</b> The Australian Botanic Garden, Mount Annan, Botanic Gardens of Sydney	Prof Brett Summerell, Chief Scientist and Director Science, Education and Conservation (Proxy for vacant Seed Bank Manager position)
<b>The Victorian Conservation Seedbank</b> Royal Botanic Gardens Victoria	Dr Rebecca Miller, Research Scientist— Seed Science  Dr Alastair Robinson, Manager Biodiversity Services
<b>Tasmanian Seed Conservation Centre</b> Royal Tasmanian Botanical Gardens	Mr James Wood, Seed Bank Manager

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## Our people

Each year we feature a selection of staff and volunteers from across our Partner organisations. The below profiles are some of the people who make what we do possible.

### Nathan Emery—Manager Seedbank & Restoration Research at the Australian PlantBank

My passion for plants started indirectly at a young age from a lot of time spent catching cicadas with my family throughout spring and summer. We'd spend hours in National Parks and bushland reserves trying to catch these wary and noisy critters, and it gave me plenty of time to get to know many of the plants in the Sydney region (especially those that scratched and spiked me!).

I enrolled in a science degree in biodiversity and conservation at Macquarie University and hoped to learn more about plants. Sadly, the subject ratio of plants to animals was not in my favour throughout my degree. Unsatisfied, I went in search of botanical books and came across the blue bible, *Seed conservation: Turning science into practice*. I bought it, read it, completed a university assessment with it and was hooked. I knew I wanted to pursue a career in seed science. I was lucky enough to undertake Honours and a PhD on the Sydney Flannel Flower (*Actinotus helianthi*) at the Australian Botanic Garden Mount Annan (ABGMA) under the expert supervision of Dr Cathy Offord.

After four to five years of a hard but enjoyable postgraduate life, I started a Scientific Officer role at ABGMA, working on the translocation program for the critically endangered *Persoonia pauciflora*. Having successfully translocated around 1,000 plants as population supplementations and assisted migrations, I then expanded my research work by focusing on two additional threatened *Persoonia* species. Here, we were able to improve our understanding of the perplexing nature of *Persoonia* seed biology and successfully execute experimental translocations on areas of mining rehabilitation.



Nathan Emery

For the past three years, I have had the privilege of leading seed biology research on species from woodland and dry rainforest threatened ecological communities (TECs) in north-west New South Wales. Having seen the devastating impacts of the drought in 2019, it was heartwarming to monitor the recovery of these TECs following record-breaking rainfall. For this work, I helped develop a new analytical workflow to predict the seed germination response to current and future local site temperatures using bi-directional thermogradient plate data. This provides a framework to identify species whose thermal germination niche may be impacted by climate change, thereby warranting further on-ground monitoring.

I have been acting in the Manager Seedbank & Conservation Collections role at the Australian PlantBank since November 2022. During this time, my primary focus has been to oversee the curation management and collection development of the Seedbank, ensuring our collections are representative of NSW flora, high quality and can support future restoration and conservation challenges.

Last year, I was also appointed as the Data Analyst by the ASBP for the Collections Review Project—a national gap analysis of seed bank collections between 2000 and 2020 across the Partnership. It is an exciting project that will guide the future priorities for the Partnership and benefit the development of Australian seed bank collections.

I look forward to continuing the strong collaboration our organisation has with the Partnership.

## Amelia Martyn Yenson—Acting National Coordinator, Australian Seed Bank Partnership

I am thrilled to join the Partnership this year, as Acting National Coordinator, supporting the diverse range of conservation activities that our experienced Partners and Associates undertake across our incredible landscapes. I am a PhD-qualified horticultural scientist and experienced project manager, with a passion for plants developed over 20 years of working with iconic, threatened and common Australian plant species.

I have been immersed in industry best practice over the last few years working for the Australian Network for Plant Conservation, initially leading the revision of *Plant germplasm conservation in Australia (3rd edition)*<sup>1</sup> and later, *a metacollection project focused on the Native Guava*<sup>2</sup> *Rhodomyrtus psidioides* (a species at risk of extinction due to Myrtle Rust). Key to this effort has been articulating the importance of conservation collections, particularly those curated in botanic gardens and state conservation agencies, as a source of plant material and data to support *in situ* management and translocation initiatives.

My research experience in horticulture and seed science has given me a practical understanding of the challenges of maintaining conservation collections of seeds and living plants. I was introduced to seed germination studies in my Honours project, and still laugh when

I remember that the statistician wanted me to check germination every 12 hours to get the best possible data set! I took a detour into whole-plant physiology during my PhD, working on the iconic Australian Waratah. In 2004, I joined the NSW Seedbank in a research position funded by the Millennium Seed Bank of the Royal Botanic Gardens, Kew. As well as guiding collection priorities, making conservation seed collections and developing research projects, I was fortunate to contribute to *a national seed longevity study*<sup>3</sup> and an earlier edition of the Germplasm Guidelines. Recently, I was honoured to put together a graphic that captured the changes in targets, equipment, funding sources and outcomes over more than 20 years at the Australian PlantBank, part of the Botanic Gardens of Sydney. I am fortunate to be hosted at PlantBank in my current role, supported by funding from the Australian National Botanic Gardens.

Strong networks between teams, and across organisations, are essential to tackle the big challenges facing biodiversity conservation today. Even better, these personal connections with enthusiastic plant-lovers enrich our working and personal lives, as we tackle the daily tasks of seed collection, germination testing and data management.



Amelia Martyn Yenson (Image: Herve Saquet).

1 Available at <https://www.anpc.asn.au/plant-germplasm/>.

2 Available at <https://www.anpc.asn.au/safe-custody-for-native-guava/>

3 Available at <https://doi.org/10.1007/s10531-014-0641-6>

As we implement the [Partnership's Strategic Plan](#)<sup>4</sup>, I am excited by the opportunities that await: growing our collections, supporting people to bring their unique skills and experiences into our seed banks and labs, improving our engagement with communities including First Nations, and continuing to develop and share knowledge. Together with my fantastic Assistant Coordinator, Brad Desmond, I look forward to renewing connections, meeting new staff and students within the Partnership and working together for conservation impact.

## Rebecca Miller—Research Scientist at the Victorian Conservation Seedbank

I joined Royal Botanic Gardens Victoria (RBGV) as Research Scientist (Seed Science) in 2020. This new role was created with support from the Hugh D.T. Williamson Foundation and coincided with an expansion of lab resources via Victorian Government Bushfire Recovery funding, increasing the scale and scope of seed research possible at RBGV.

A major part of my role is to characterise dormancy mechanisms and determine methods to alleviate dormancy in difficult-to-germinate species, working with seed collections held in the Victorian Conservation Seedbank (VCS). I study a wonderful diversity of species from across Victoria's ecosystems, delving into different ecologies, seed morphologies, species distributions and recruitment strategies, and how they may inform required pre-treatments and germination conditions.

I love that my work is highly varied. I contribute to fieldwork for seed collections—a highlight was being part of the team that rafted the Snowy River in 2021, assessing bushfire impacts and making collections of rare species endemic to the Snowy. I oversee the germination testing of new seed collections, and the retesting of existing seed collections as part of research into seed longevity, which will help inform recollection intervals



Rebecca Miller

and collection management. With the recent establishment of a dedicated conservation cryobank at RBGV, I'm looking forward to working on the propagation and banking of fern and lycophyte spores. Working at a significant scientific institution with substantial public outreach, I enjoy giving guest lectures, supervising research students and interns, and engaging with the scientific, educational and wider community about plant science and conservation.

I feel fortunate at RBGV to work with passionate and skilled botanists, conservation geneticists, horticulturists and mycologists, and with staff with diverse expertise across the ASBP. Research challenges and activities vary between species and plant communities, and with the threats they face. Especially satisfying are opportunities to work with land management and conservation agencies where RBGV's *ex situ* conservation collections, seed research and population genetics work can support on-ground conservation actions.

Before joining RBGV, I had 15 years of postdoctoral research and teaching experience at Australian universities. My research variously married aspects of plant ecology, physiology and biochemistry, and always combined fieldwork with lab work to try and understand the mechanisms and processes that underpin plant 'behaviour' in nature.

<sup>4</sup> Available at <https://www.seedpartnership.org.au/about-us/strategies-and-reports/>

My PhD focused on chemical defence strategies plants deploy to deter predators in Australian tropical rainforests. Research on plant responses to environmental stress and climate change took me to sub-Saharan Africa and Antarctica, and out of research on the mechanism of thermogenesis (self-heating) in flowers grew an interest in pollinator interactions in Australia's hot and stinky arum lilies. My interest in seed science grew out of work on chemical defences in floral and seed tissues, and teaching plant propagation and seed ecology. I am deeply concerned about the threats of human activities and climate change to the health and resilience of native ecosystems and plant diversity. That I can now apply my diverse plant science experience to understand species' vulnerabilities and for conservation in the face of these threats is a rewarding challenge and opportunity.

## Janiebelle Reilly—Acting Assistant Coordinator, Australian Seed Bank Partnership

My curiosity for plants sprouted during childhood visits to family in the Philippines, where I encountered the Tickle-me Plant (*Mimosa pudica*) whose leaves whimsically retreat when poked. Back in Australia I felt compelled to poke every verdant leaf that crossed my path, hoping for a playful response. I continue to be disappointed.

My interests in environmental conservation and media arts clashed until a chance encounter in Canada. While participating in the grand backpacking tradition of hitchhiking like an Australian stereotype, I met a fellow named Fred Easton who welcomed me to his lakeside home which was adorned with antique film cameras and photos of whales. Fred shared captivating tales of being the unwitting photographer aboard a vessel crusading to stop illegal whale hunting. Using his quickly corroding camera on the high seas, he captured the iconic image of a harpoon flying into a baby whale—the photo that introduced Greenpeace to the world. And so, I realised it was possible to pursue both passions.



Janiebelle Reilly

I moved to Tasmania, following outdoor pursuits, working on productions like *Little J & Big Cuz*, and exploring environmental conservation as a volunteer. Later, a cycle through the 'Stans exposed me to the devastation of desertification and the fragility of life. Motivated by this existential awakening, I retrained in Victoria, earning a Certificate in Conservation and Land Management. Guided by esteemed conservationists and ecologists, I honed my Natural Resource Management (NRM) skills over the next few years.

In Canberra, my experience in arts and the environment finally came together. From not-for-profits to my own consultancy work, I eventually found myself at Department of Climate Change, Energy, the Environment and Water, where I learned the gymnastics of government.

Then, against no odds, the Partnership granted me a 'working holiday' with great office views. I was gifted the opportunity to learn about germplasm research, the challenges of banking elusive, nascent or difficult species and the tireless efforts of our Partners spanning fieldwork, laboratories and funding battles. The formidable duo, Brad and Amelia, with their remarkable productivity, intellect and cheerful attitudes have left me in awe.

Luckily, our shared affinity for bakery treats and plant puns dispelled some imposter syndrome. Working with the Partnership has been a total joy. I am grateful for the masterful guidance, and am left with a plethora of knowledge to take back to the Department.

## **Jerry Smith—Senior Scientific Officer at the South Australian Seed Conservation Centre**

I recall well my first ever interaction with native flora at age 10 on a Sunday afternoon drive through the Adelaide Hills on a sunny spring day, when my Mum called out to Dad to 'stop the car!' I thought she must have been car sick, but the next words she uttered were 'Spider Orchid'. One by one the five kids hopped out of the van to look at a King Spider Orchid, most of us with mild to moderate disinterest. Noting for the younger generations that this wasn't because we had been asked to stop looking at our screens, we just thought Mum was nuts. But I was struck by this odd-looking thing and it is a memory that remained for years. To this day, the team here at the South Australian Seed Conservation Centre gently rib me about my orchid obsession. I didn't fall naturally into plant conservation; a directionless youth meant a need to repeat my matriculation, and it took me some time to find a purpose. My interest in plants grew working at a native plant nursery in Mount Gambier, where a magazine I read in the lunch room had an article talking about indigenous plants and a story on an indigenous plant nursery in Geelong. This was 1993, and it was all new to me. That weekend, I drove the three hours to Geelong to find out more. And that was the start; from there I had an obsession with knowing what occurred around me and shortly after this I returned to school before heading to the University of Adelaide to undertake a degree in Natural Resource Management. I undertook an Honours Degree on threatened plant species and have worked as a consultant, contractor and for various government sectors and, prior to my current role at the Botanic Gardens and State Herbarium, worked with a project called

Back from the Brink to improve the trajectories of 20 species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), including two of the Top 30 flora species *Thelymitra cyanapicata* and *Prasophyllum murfetii*. It was in this role that I really started to interact with the South Australian Seed Conservation Centre, as I engaged them to develop breeding programs for these orchids and to help me with doing surveys and monitoring. When an opportunity came up to join their team I grabbed it, as the chance to get involved in plant conservation across the state with a team as experienced and dedicated as this was something I really wanted to be involved in. It has only been a short time so far but I am loving the work we do here and the variety it involves; we are looking forward to getting in to do some floodplain assessments and germplasm collections on Murray floodplain ephemerals this year, but I am sure the team has many other exciting projects they will work on and hopefully I can assist them in doing all of it.



Jerry Smith

## Millie Stevens—Acting Curator of the National Seed Bank

Growing up on Dharug and Gundungurra Country in the Blue Mountains, I spent a lot of time in the bush and developed a strong connection with the natural world and love of the organisms with whom we share it. I completed a Bachelor of Science (Honours) in ecology and environmental science with a thesis in seed biology at the Australian National University. Armed with a passion for plants and desire to get my hands in the soil I also attained a Diploma in Horticulture from the Canberra Institute of Technology.

This set me up to build an early career at the intersection of horticulture and science, working as a nursery horticulturist and research technician, propagating native plants for conservation and research, which I have been doing for the past eight years. My work on Ngunawal and Ngambri Country at the National Seed Bank (NSB) involves researching and testing seed collections for viability and germination requirements, managing our biology lab to support research students, scientists and volunteers, and data collection and management to inform the use and curation of our seed collections. I am fascinated by how diverse seeds are and their adaptations to Australian climates. The seed collections held at NSB are incredibly diverse, representing flora from across Australia's landscapes, from of the tropical savanna in Kakadu National Park to the Australian Alps. Discovering how to collect, process, germinate and store seed of each species is a challenge and a delight.

I really enjoy the work I do and have been fortunate to find great mentors in the seed banking and botanic gardens community, who have helped shape me into the well-versed seed biologist I am today. I truly believe plants are some of our greatest teachers; spending my time and energy learning from them and doing my bit to protect and promote their importance to the wellbeing of our societies and planet is an honour. I am privileged to find connection to Country through my work and am a strong advocate for better and proper inclusion of First Nations in seed collecting, banking and research.



Millie Stevens

# Year in review





## Outcome 1 Growing our collections, research and restoration contributions

The Partnership has worked over the past year to further *ex situ* conservation, plant science and species recovery across Australia. We have made progress on seven projects that target priority plants within each state and territory. Join us as we explore these projects, outlining how collaboration has led to both local and nationwide outcomes.

### Completed Partnership projects

#### Emergency Seed Collecting Fund to Save Australian Native Flora

**PROJECT OUTCOMES**

-  **119** collections of **100** taxa
-  **29** rapid flora surveys of **23** taxa
-  **173** germination trials of **148** taxa
-  Plants propagated for **25** taxa

In February 2020, the Australian and UK Governments commenced talks to discuss strategic collaborations between our two countries. As part of those talks the UK Government offered to support Australia's bushfire recovery efforts by funding the Partnership's emergency response

efforts over two years. This generous offer of support enabled [our Emergency Seed Collecting Fund to Save Australian Native Flora project](#) to provide comprehensive and strategic plant conservation actions in bushfire-affected areas across the country.

The project targeted a range of species from [the Australian Government's priority flora list](#), and regional priorities for emergency conservation after the bushfires. Our partnership approach factored in both national and regional conservation priorities before embarking on a package of seed collection, germination, storage and rapid flora assessments.

The project secured 100 taxa in conservation seed banks, including Tasmania's endemic Cider Gum (*Eucalyptus gunnii* subsp. *gunnii*), which was badly impacted by the 2019–20 bushfires. In spring 2022, talented arborists climbed these trees in the Skullbone Plains, collecting 583 g of fruit from 30 individuals, which has now been cleaned and banked at the Tasmanian Seed Conservation Centre.



Arborists at Skullbone Plains collecting Cider Gum fruit (Image: Royal Tasmanian Botanic Gardens).

Germination trials were also a focus of the project, and were completed for 148 taxa. This crucial activity reveals the process needed to germinate plants from seeds, allowing practitioners to understand the germination requirements of the seeds used in the restoration and management of bushland areas. Collectors from the Alice Springs Desert Park ventured into the slot gorges of Palm Valley to secure the threatened MacDonnell Ranges Cycad (*Macrozamia macdonnellii*) for testing. Before germination trials could begin, cycad seeds were x-rayed at a local hospital to determine their viability.

Species from Western Australia, Victoria, New South Wales and South Australia were also propagated via cuttings or from seedlings, with 13 species planted in seed production areas and 12 species used for botanic garden displays to educate the public.

## Paddle to the metal: helicopter rides for a rare Daviesia

Pictured are plants of the threatened Paddle-leaf Daviesia (*Daviesia obovata*) with pods bursting with seed. These plants grow in an isolated region of the Fitzgerald River National Park in Western Australia, in an area impacted by recent bushfire. The plants are so remote they are only accessible by helicopter. Thankfully, staff from the Western Australian Seed Centre, Kensington and the Department of Biodiversity, Conservation and Attractions worked together to collect seed from this species under the Emergency Seed Collecting Fund to Save Australian Native Flora project.



*Daviesia obovata* plants and seeds (Image: Andrew Crawford).



## Island, Alps and Forests project

### PROJECT OUTCOMES



**305** collections  
of **216** taxa



**267** rapid flora surveys  
of **165** taxa



**262** germination trials  
of **148** taxa



**2,500** plants propagated  
for **39** taxa



Engagement with  
Indigenous, NRM and  
community groups

Our Island, Alps and Forests project allowed the Partnership to continue bushfire recovery actions across seven heavily affected regions in eastern and south-eastern Australia. Supported by a grant awarded under the Australian Government's Regional Bushfire Recovery for Multiregional Species and Strategic Projects Program, this work aimed to improve knowledge and ability to conserve native plant species found on Kangaroo Island, in the Australian alpine region and in many forest types in the eastern states.

Our aim was to secure new and genetically diverse seed collections to act as an insurance policy for Australia's native flora, then to complete germination trials of fire-affected species.

Flora surveys of fire-affected areas were another focus, as these surveys provided seed banks and conservation agencies with on-ground data about species recovery. Our work involved active engagement with Traditional Owners and community groups in the affected regions to build relationships, improve knowledge and share skills related to plant conservation in affected regions.

At the end of this project, our Partners secured 216 taxa, tested germination of 148 taxa, and completed flora surveys for 165 taxa. Plants from 39 species were also grown from cuttings and seedlings to act as *ex situ* insurance populations. For example, the critically endangered (Vic) Buffalo Grevillea (*Grevillea alpivaga*) was one of eight species that were successfully propagated by the Royal Botanic Gardens Cranbourne, from genetically diverse cuttings collected from wild populations. Given it is not currently known how to propagate this species from seed, growing plants from cuttings is critical for the perseverance of this species.



*Grevillea alpivaga* germinants ready for *ex situ* planting (Image: Russell Larke).

## Myrtle Rust preparedness

Part of our successes under the Island, Alps and Forests project included collecting seed from Myrtaceae species as an insurance against the introduced fungal disease Myrtle Rust. The disease infects plants in the Myrtaceae family, which includes iconic native Eucalypts, Bottlebrushes, Lilly Pillies and Paperbarks.

Under this project, staff from the Australian Botanic Garden Mount Annan collected seed from 16 Myrtaceae species to increase the genetic diversity in their conservation collections. These seeds will be secured as insurance against the impact of Myrtle Rust.



Seedbank Officer Ruby Paroissien collecting fruits of *Callistemon citrinus* (Image: Laura Watts).

*Melaleuca squarrosa* in flower  
(Image: Lara Watts, RBGDT).



## Protecting Plants with Proctor & Gamble

### PROJECT OUTCOMES



**19** collections  
of **19** taxa



**10** germination trials  
of **8** taxa

The Procter & Gamble Company provides philanthropic support to the Millenium Seed Bank Partnership to help save endangered species in various countries. Through their P&G Save 20 in 2020 program, funding was provided to the ASBP to secure threatened Australian plants. Implementation of the project was delayed due to COVID-19, and ran until mid-2022.

Target species for the project were selected based on their threatened species status, and their ability to provide new information to seed science. Partners across five conservation seed banks in New South Wales, South Australia, Victoria and Western Australia undertook germplasm collection and germination trials.

This project secured seeds of the critically endangered Chalky Wattle (*Acacia cretacea*) from the single known population on Eyre Peninsula. This is the first wild seed collection for this wattle in at least 12 years. The collection was made with the help of a local farmer whose father originally helped discover this species, demonstrating ongoing and active community engagement in threatened species conservation. Under this project, the seed was tested and its germination protocol has been documented.

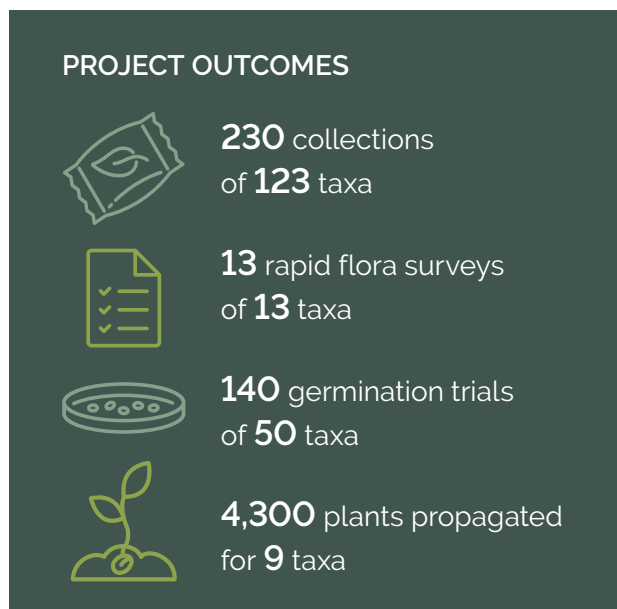


*Acacia cretacea* flowers and seeds (Images: South Australian Seed Conservation Centre and Denzel Murfet).

## Ongoing Partnership projects

Four Partnership projects are ongoing, with project outcomes current as of 30 June 2023.

### The Rare Bloom Project™



The Rare Bloom Project™ is a three-year program delivered in partnership with the World Wildlife Fund Australia (WWF) in collaboration with Botanica by Airwick. It aims to improve conservation outcomes for 120 Australian native wildflowers from fire-affected areas through seed banking, germination research and restoration.

By the end of June 2023, over 123 taxa have been banked, germination experiments have been completed for 50 taxa and nine taxa have been propagated for conservation work across the country.

In late January and early February 2023, collectors from the NSB at the Australian National Botanic Gardens located two previously unknown populations of *Geranium brevicaule* in the Pilot Wilderness area of Kosciuszko National Park.

Two seed collections were made from these populations, increasing the genetic diversity and representation of this species in Australia's seed banks. This is a significant step toward safeguarding this species' future, and provides a valuable resource for research to understand germination requirements and ideal storage conditions for this species.



*Geranium brevicaule* flower in Kosciuszko National Park (Image: Alex McLachlan).

Staff from the Victorian Conservation Seed Bank established germination protocols for two listed threatened species (*Spyridium cinereum* and *Veronica nivea*). The protocol for *S. cinereum* yielded 100 per cent germination of seeds tested. These seedlings will be cared for until they are large enough to be planted in *ex situ* living collections at the Royal Botanic Gardens in Melbourne and Cranbourne.

## Saving a Spider Orchid

As part of The Rare Bloom Project™, Woolworths generously provided funding to support an activation for one species per year. In 2022, the endangered Bussell's Spider Orchid (*Caladenia busselliana*) was selected, given it was previously known from just 13 individuals in the Busselton region of south-west Western Australia.

Thanks to the activation, staff at Kings Park and Botanic Garden were able to successfully germinate this species from seed that was collected in 1999. The germinants were carefully nurtured in the garden nursery while surveys were conducted to detect orchid pollinators and thus identify appropriate wild habitat for translocation. When an appropriate site was located and the orchids were old enough, 216 plants were successfully translocated, safeguarding the survival of this species. A number of the orchids were also planted in the conservation garden at Kings Park as an education tool for visitors.



*Caladenia busselliana* flowering in the wild  
(Image: Belinda Davis).

## Critically Endangered project

### PROJECT OUTCOMES



**25** collections  
of **11** taxa



**8** germination trials  
of **3** taxa



**1** restoration activity  
for **1** taxa

The Royal Botanic Gardens, Kew, provided a grant to allow the Partnership to contribute towards the recovery and overall conservation of ten critically endangered Australian plant species in Western Australia and Tasmania. This includes plants listed as threatened nationally or under state environmental legislation.

Supported by this funding, the Partnership aims to undertake:

- pre-collection field surveys,
- seed collection activities for species not currently banked, or to improve genetic representation of previously banked collections,
- recovery and restoration activities such as development of germination protocols, developing seed production areas or translocations.

A wet winter in 2022 led to a particularly good season for orchid growth in Tasmania. Under this project, the Tasmanian Seed Conservation Centre secured their first ever collection of two critically endangered species, the Midland Greenhood Orchid, *Pterostylis commutata* and the Marsh Leek-orchid, *Paraprasophyllum limnetes*. On the other side of the country, seed from the critically endangered *Grevillea dryandroides* subsp. *dryandroides* were germinated by the Western Australian Seed Centre Kensington. These germinants were then sent to a nursery to be grown on, before being used for future translocations in 2024.



Collecting seed capsules from *Paraprasophyllum limnetes* (Image: Robin Garnett).



Flowers of *Grevillea dryandroides* subsp. *dryandroides* (Image: Andrew Crawford).

## Seeds of Hope project

Thanks to generous community support for our December 2022 [Seeds of Hope Appeal](#), work is being completed to secure, study and safely store the endangered Small Flowered Conostylis (*Conostylis micrantha*). This remarkable species is found only in the Geraldton Sandplains of Western Australia, on the lands of the Yamatji Nation. It is listed as endangered under the EPBC Act and is at risk of disappearing forever due to habitat loss and invasive species. Currently, it exists in only six out of ten known populations. When last inspected, the number of individual plants totalled fewer than 250, indicating a decline in plant numbers since a conservation advice for the species was prepared in 2016.

The Seeds of Hope appeal raised over \$2,500, which was generously matched by the CHABG Public Fund. These funds are supporting the Western Australian Seed Centre, Kensington to work with Yamatji Indigenous rangers on conservation of this species. Over the next two years, the seed from all extant populations will be studied and safely stored at the Western Australian Seed Centre, Kensington, to secure a genetically diverse collection, ready for future restoration efforts.



The Small Flowered Conostylis (*Conostylis micrantha*) (Image: Andrew Crawford).

## Global Tree Assessment

### PROJECT OUTCOMES



**1,349** conservation assessments completed

The [Global Tree Assessment](#) aims to assess the conservation status of every known tree species globally. The Global Tree Assessment will provide prioritisation information to inform conservation action for trees, so that no tree species need become extinct.

Red List assessments are proving very important in policy-making and priority setting. Without species-specific conservation assessment information, tree species are at risk of being neglected in conservation planning. To ensure functioning ecosystems and that conservation action is carried out for the species in most urgent need, an assessment of extinction risk across all tree species is critical.

As Australia is rich in biodiversity, with more than 26,000 plant taxa and one of the highest levels of endemic tree species worldwide, it is imperative we understand the conservation status of every single tree species. This information can help with the allocation of research and conservation resources nationally. While many Australian endemic tree species have already been assessed under state, territory and national endangered species legislation, there remains over 1,000 tree species that have not yet received a conservation assessment of any kind.

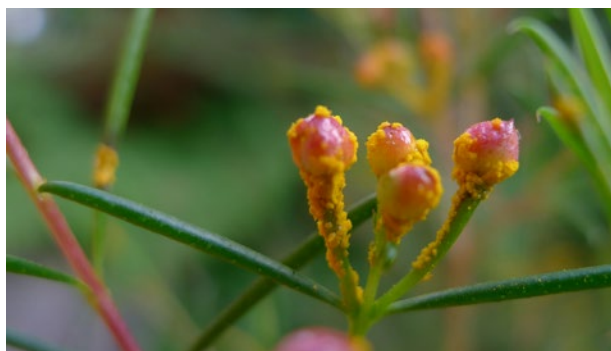
With funding from Botanic Gardens Conservation International, and support from the IUCN Tree Specialist Group and many botanists and taxonomists from around Australia, this CHABG-led project will increase the number of conservation assessments of Australian endemic tree species contributing to the Global Tree Assessment. To date, over 1,300 assessments have been completed.

## Myrtle Rust Survey

Myrtle Rust, a highly invasive plant disease caused by the introduced fungal pathogen *Austropuccinia psidii*, poses a serious and urgent threat to Australia's native biodiversity. Myrtle Rust affects plant species in the family Myrtaceae, which includes iconic Australian species such as Paperbarks, Tea-trees, Eucalypts, Guavas and Lilly Pillies. These are key and often dominant species in many Australian ecosystems. To date, the fungus has proved capable of infecting around 400 native species and this number is likely to grow. Serious declines towards extinction are underway in some species, and broader ecological consequences are expected.

In late 2022, funding from the Australian Government's Department of Climate Change, Energy, the Environment and Water supported CHABG and Botanic Gardens Australia and New Zealand to develop a national living collections stocktake of Myrtle Rust-susceptible plant species. The stocktake was performed through a survey that ascertained which species are held in collections across seed banks, botanic gardens, arboreta and their nurseries.

A final report is being developed for publication, and its outcomes and data will inform strategic planning and management of Myrtaceae collections as well as supporting further research. The results will also be shared with government, business and the philanthropic sector so policy-makers and funding bodies have additional information to assist in the prioritisation of future resources.



Myrtle rust on Geraldton Wax flower (*Chamelaucium uncinatum*) buds (Image: John Tann).



## Outcome 2 Growing our investments in our facilities and people

Investment in our people and facilities is crucial to the continuation of the Partnership. We are committed to equipping the next generation of conservation scientists and practitioners with the necessary skills and expertise. This increased future capacity and capability will allow us to respond better to threats, restore native habitats and secure better biodiversity outcomes for Australia. Learn about how we have worked towards this goal below.

### Collections Review project

The Partnership's Collections Review project aims to examine seed and other germplasm collections that have been secured in Australia's conservation seed banks since the year 2000. The project will enable the Partnership to better understand and prioritise future collecting and research at the national and sub-national levels, leading to more targeted investment in staff and facilities; local, regional and national collecting priorities; and leading-edge biological and ecological research. This project will also help to shape our priorities in line with our new Strategic Plan over the next seven years.

Following an open and competitive expression of interest process, Dr Nathan Emery from the Australian PlantBank was selected to lead the data analysis components of the project. Dr Emery will work closely with the Partners in 2023 to consolidate datasets from Partner facilities and undertake statistical analysis to assist in the review of collections. The review will culminate in a paper that illustrates the representativeness, functionality and value of these germplasm collections.

*Leptospermum arachnoides* in flower  
(Image: Ruby Paroissien, RBGDT)

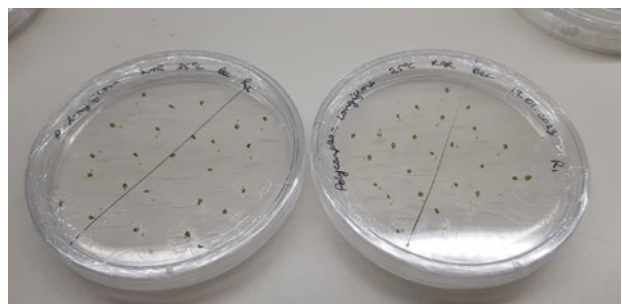
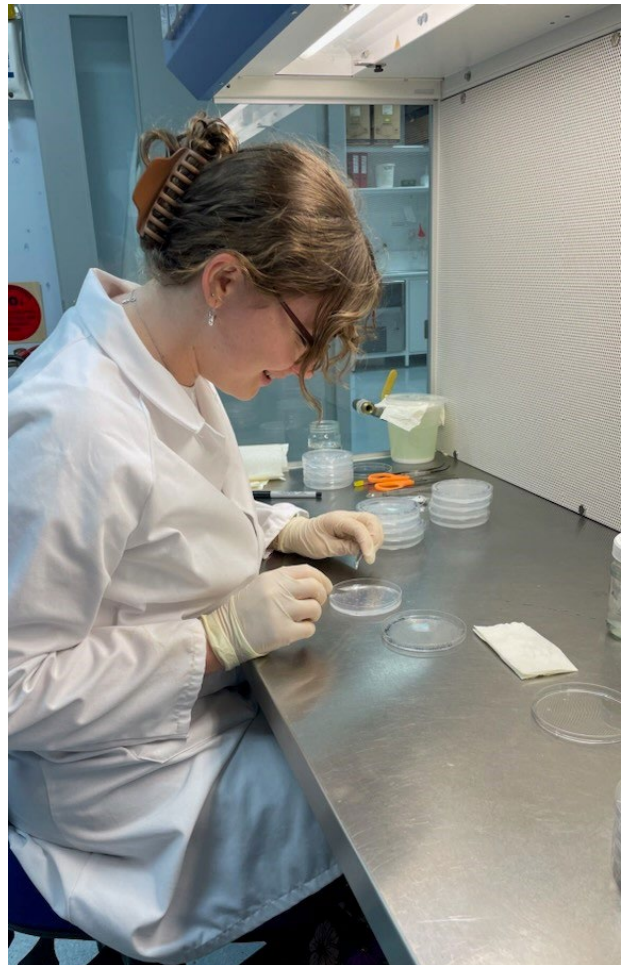


## Student Research Scholarship

In collaboration with WWF-Australia and Botanica by Airwick, the Partnership is delivering The Rare Bloom Project™ with the aim of improving conservation outcomes for at least 120 of Australia's native wildflowers from fire-affected and high-conservation-value areas.

In April 2022, WWF-Australia established a pop-up fundraising boutique in Sydney titled 'The Rare Bloom Florist'. The pop-up raised \$2,500 through the sale of species-themed art, with funds donated to the Partnership. This funding was allocated to a Student Research Scholarship, to provide financial support for an Honours, Masters or PhD student to undertake germplasm-related research to support the conservation of Australia's native flora.

In late 2022, the Partnership ran an open expression of interest process, and Ms Rebecca Jonas was selected as the successful applicant. This scholarship will aid Rebecca during her Honours project, which aims to improve our understanding of how seeds age under different storage conditions, and to develop better methods of modelling seed ageing to support the conservation of Australia's native flora. This work will be completed in collaboration with the University of Western Australia and Kings Park and Botanic Garden, with results to be published by the end of 2023.



Rebecca Jonas undertaking research on *Polycarpaea longiflora* (Image: Rebecca Jonas).

## Outcome 3 Improving engagement and partnerships with Australia's First Nations Peoples

The Partnership is committed to Reconciliation with Australia's First Nations Peoples and our aim is to support best practice conservation in line with cultural expectations. We also strive to support co-development and co-delivery of seed conservation projects on Country, and share any benefits realised through these collaborative efforts, including knowledge and expertise, to complement the work of traditional custodians in conserving flora on Country. This year we made initial steps towards this outcome, with stories discussed below.

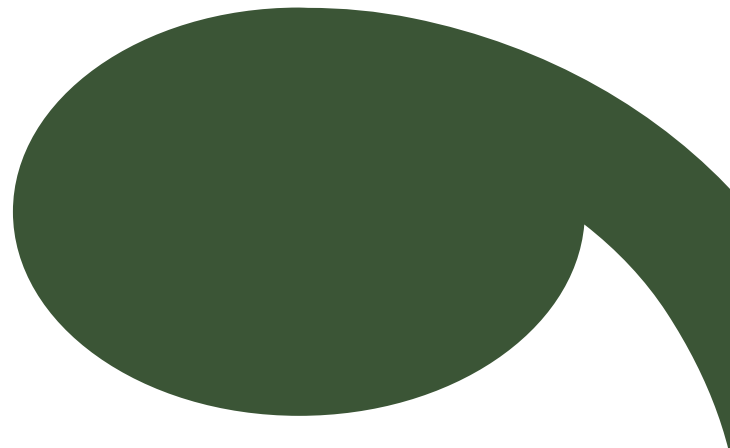
### Island, Alps and Forests project

This year we concluded our [Island, Alps and Forests project](#). A large component of this work involved active engagement with Traditional Owners and community groups in bushfire-affected regions to build relationships, improve knowledge and share skills related to plant conservation in affected regions.

In South East Queensland, staff from the Queensland Herbarium worked with rangers from the Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) to survey the populations of the endangered Swamp Daisy (*Olearia hygrophila*) on Minjerrabah (North Stradbroke Island). This was an opportunity to monitor population size and health of the island's only endemic plant and resulted in the discovery of a new population site. Information was used to conduct a threatened species assessment under the Common Assessment Method. Conversations were also had with QYAC about propagation and reintroduction of plants as part of this species' recovery.

At the Australian PlantBank in New South Wales, the Seed Bank team led a tour in December 2022 for ten First Nations students in the Deadly Tracks TAFE career pathway program. This opportunity allowed sharing of knowledge related to of seed conservation, collecting, bushfire recovery and restoration.

The team at the Victorian Conservation Seed Bank engaged with the Gunaikurnai Land and Waters Aboriginal Corporation and Moogji Aboriginal Council East Gippsland through online and in-person meetings with horticulture and science staff, and the sharing of plant material propagated from seeds held in the Seed Bank.



### Seeds of Hope project

The Small Flowered Conostylis (*Conostylis micrantha*) occurs on the lands of the Yamatji Nation. As part of the Seeds of Hope project, the Western Australian Seed Centre, Kensington will work with Yamatji Indigenous rangers over the next 18 months to undertake field surveys and collect seed from this endangered species.

## The Rare Bloom Project™

As part of The Rare Bloom Project™, staff from the NSB travelled to Uluru-Kata Tjuta National Park in May 2023 to meet with Anangu (the Traditional Custodians of the park) and discuss collecting seeds from country in a culturally appropriate way. This was the first in a series of engagements planned with Anangu to develop plant conservation practices that include cultural knowledge and are co-designed with First Nations people. Exploration of the park's eastern side found populations of potential target species such as *Acacia ammobia*, *Codonocarpus cotinifolius* and *Leptosema chambersii*. More engagement will be undertaken in 2023 to scope seed collection activities in the

park, serving not only the conservation aims of the project, but also the interests of those who have been caring for Country over 60,000 years, and whose connection to the land is an asset to species conservation and seed banking.

Under this project, staff from the Western Australian Seed Centre, Kensington were also involved with delivering seed collection training for rangers from the Gnowangerup Aboriginal Corporation and staff from South Coast Natural Resource Management. As part of this training, the rangers assisted with the collection of *Banksia aculeata*, a rare species (WA Priority 4 species) known only from a few locations within the Stirling Range National Park. In total, over 1,200 seeds were collected from 100 plants.



Andrew Crawford training Gnowangerup Aboriginal Corporation Rangers to collect seeds from *Banksia aculeata* (Image: Karl Hansom).

## Outcome 4 Developing and sharing knowledge

Key to our aims is the sharing of our knowledge and data to support environmental decision-makers and on-ground practitioners to implement conservation strategies, policies and programs. To increase awareness of the work of seed banks, the Partnership also works across various communication platforms. Publicising our achievements is crucial for increasing stakeholder engagement, generating support and sourcing donations that allow our work to continue. In the past 12 months, the Partnership has again been working to develop and share knowledge about germplasm conservation, and we are excited to share the progress.

### Upgrade of the Australian Virtual Seed Bank

The [Australian Seed Bank Online portal](#) is a site for the ASBP to provide open access to our Partners' seed data, ensuring it can be shared and analysed. This online resource is a virtual seed bank for seed collectors, researchers, students and government agencies to examine the status of various *ex situ* collections across Australia. It can also be used to identify national collecting priorities to ensure the diversity of species, as well as the genetic diversity within a species.

The Atlas of Living Australia (ALA) hosts the current version of the Australian Seed Bank Online, but the current portal is now more than 10 years old and requires a significant upgrade to ensure the software meets current industry and accessibility standards. An update will ensure seed collection and germination data is displayed and exportable to support research, *ex situ* conservation and *in situ* management of Australia's native flora.

This year we began the major process of updating the portal platform and its data. Newly rebranded as the Australian Virtual Seed Bank, we will continue to work with ALA and our Partners to finalise the updated platform, currently scheduled to go live in late 2023.

### Special issue of the Australian Journal of Botany

This year we progressed with publishing papers from the Australasian Seed Science Conference held in 2021, which will be collated in a special virtual issue of the *Australian Journal of Botany*. Once complete, an introductory synthesis paper and eight research papers will be available under an open access licence, allowing the community to utilise current research on topics such as seed recruitment and germination under extreme environmental conditions, maternal line collections, the seed microbiome, germination of cloud forest species and the longevity of rainforest species in conservation seed banks. The Partnership is proud to support the publication of a paper collating novel and emerging seed science research from early to middle career researchers, which was a highlight of the conference proceedings. We thank the authors, conference scientific committee and Dr Mark Ooi, the editor-in-chief of the *Australian Journal of Botany* for publishing these articles to ensure active research is documented and shared with the conservation community in a timely manner.

## Grass Roots Giving Appeal

From 01–30 June 2023, the ASBP ran the [Grass Roots Giving Appeal](#), which aimed to raise funds for grassland conservation projects, and educate our audience on the need for action. Australia's diverse grasslands cover a vast proportion of Australia, contain a huge range of plant species that support a diverse array of other organisms, provide ecosystem services, sequester carbon and have strong cultural value for Indigenous peoples. They are under threat from land use changes, invasive species, and climate change. Conserving native grasslands through seed banking can insure these ecosystems against future impacts.

The appeal utilised social media and dedicated appeals webpage to provide information to our audience about Australian grassland ecosystems. The Appeal raised total of \$3,937 from 16 donations, which was generously topped up to \$5,500 by the CHABG Public Fund. Additional to the funds raised, the appeal also achieved a reach of 212,428 people (with 879 link clicks to the webpage), and resulted in 32 per cent increase in our Instagram followers. This successful education and donation campaign will now fund a grassland conservation project, the impact of which will further be communicated to our audience in the coming years.



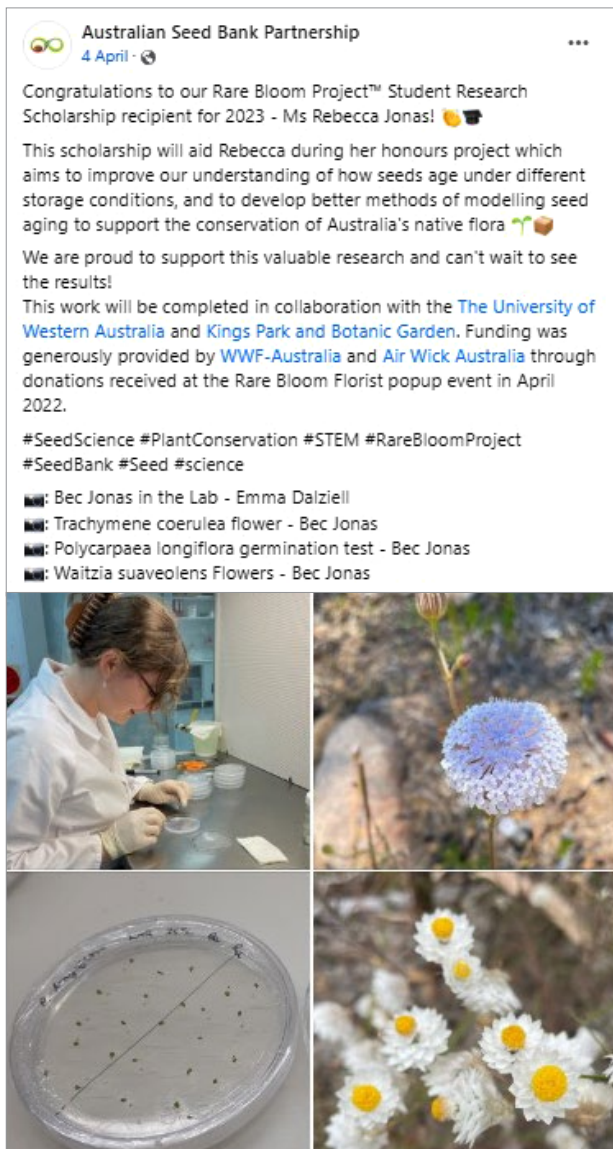
Hummock grasslands in Tjoritja / West MacDonnell National Park (Image: Bradley Desmond).

## Digital media

During the 2022–23 financial year, the Partnership invested in improving our social media presence by sharing weekly partner stories, promoting conferences and our donation appeals.

This included our Grass Roots Giving and Seeds of Hope appeals that aimed to educate our audience about the importance of Australian grassland ecosystems, and encourage support for conservation projects.

Across our platforms we saw an increase in followers (+15 per cent on X, +13 per cent on Facebook and +51 per cent on Instagram), with our most liked post relating to the Student Research Scholarship that we explore more on page 32.



## Conferences

Our Partners and Associates attend conferences to increase our networks, learn more about the plant conservation efforts taking place nationally and globally, and promote the conservation and research conducted across the Partnership. The following conferences were attended by the Partnership Secretariat over the past 12 months, providing valuable opportunities to showcase and improve the work we collectively deliver.

### 7th Global Botanic Gardens Congress

Hosted in Melbourne from 25 to 29 September 2022, the 7th Global Botanic Gardens Congress explored how botanic gardens around the world play an important role in shaping our future. With accelerated loss of biodiversity across the globe, increased urbanisation, population growth and climate change, the conference highlighted the need to work together to find new solutions for the future.

Our previous National Coordinator, Damian Wrigley, presented on outcomes of the Partnership's six bushfire recovery projects, and led a germplasm conservation symposium with Partnership members from South Australia, Tasmania, Western Australia, New South Wales and the Australian Capital Territory, as well as the Australian Network for Plant Conservation.



Mr Damian Wrigley hosting the germplasm conservation symposium at the Congress (Image: Bradley Desmond).

Our Assistant Coordinator, Bradley Desmond, presented on our Myrtle Rust Survey, encouraging botanic gardens to provide data for the stocktake.

As part of this conference, CHABG also held a networking event to bring together staff working in other Australian capital city botanic gardens and seed banks.

## Australasian Myrtle Rust Conference

Hosted in Sydney from 21 to 23 June 2023, the Australasian Myrtle Rust Conference brought together experts from the Oceania region to improve understanding of *Austropuccinia psidii* infection and its impact on susceptible species, and share information about management tools and conservation activities for susceptible native plants. Our Acting National Coordinator, Amelia Martyn Yenson, presented on the importance of germplasm collections—seeds and living plants—in securing species affected by this disease and opportunities to establish metacollections across multiple sites as a risk management strategy.



Dr Martyn Yenson presenting at the Australasian Myrtle Rust Conference (Image: AMRC).

Our Assistant Coordinator, Bradley Desmond, discussed the results of the Myrtle Rust Survey, highlighting the number of facilities engaged in active monitoring for Myrtle Rust, conserving species in seed banks and living collections, and the lack of resources available in some locations for securing additional collections in the future. While many susceptible species identified as a priority in the Myrtle Rust in Australia National Action Plan are present in *ex situ* collections, the survey identified additional priority species that can be targeted for future germplasm collection.

## Partnership publications

Apart from the many research publications developed by our Partners, the Partnership has prepared articles and papers to promote awareness of our work at the project and national levels. These can be viewed following the links below:

- [\*Samara: The International Newsletter of the Millennium Seed Bank Partnership\*](#)
  - Issue 6: An interview with Dr Amelia Martyn Yenson
- [\*Australasian Plant Conservation\*](#)—the bulletin of the Australian Network for Plant Conservation
  - Issue 31(2): Australasian Seed Science Conference special issue
  - Issue 31(3): News from the ASBP: Establishing a new spore bank for Victoria's fern and lycophyte species
  - Issue 31(4): News from the ASBP: Kangaroo Island Rare Plant Garden



# Partnership highlights for 2022–23

Learn about our Partners' highlights for this financial year. While key members of our Partnership, George Brown Darwin Botanic Gardens, Alice Springs Desert Park and the Queensland Herbarium did not contribute stories this year.

## The Western Australian Seed Centre, Kings Park

Over the past year, the Western Australian Seed Centre, Kings Park (WASCKP) has continued the collection, storage and testing of WA native plant seed. Throughout 2022–23, 53 days were spent in the field, with 146 seed collections made. A total of 166 collections were fully tested as part of continued viability and germination testing of new collections and stored Millennium Seed Bank duplicate collections.

Highlights for 2022–23 included a 15-day trip to the West Kimberley in December 2022 that resulted in 33 *Eucalyptus*, *Corymbia* and *Melaleuca* seed collections for research and education purposes, including for botanic garden displays. Much of this trip's success can be attributed to excellent collaboration with Broome-based seed collector Phillip Docherty, who accompanied staff while in the field.

Two trips to the south-west were also undertaken to secure genetic diversity of *Agonis flexuosa* across the species' natural range, as part of ongoing



Lauren Hinkley and Phillip Docherty traversing sandstone pavements on the Phillips Range, West Kimberley, Western Australia (Image: Matthew Stray).

Myrtle Rust preparedness. Over 30 collections were made along the WA coastline between Perth and Gordon Inlet, within Fitzgerald River National Park, along with numerous other collections of species potentially highly susceptible to Myrtle Rust, including *Agonis undulata*—a species not previously represented in Kings Park’s seed bank.

Closer to Perth, WASCKP staff have been working with the Department of Biodiversity, Conservation and Attractions’ (DBCA) Parks & Wildlife Services division towards the John Forrest National Park visitor precinct improvement project. To date, approximately 50 seed and cutting collections have been made throughout the national park and at nearby Perth Hills locations. Plant material is being grown and maintained in Kings Park’s Nursery ahead of inclusion in the proposed regional botanic garden trial project located at the national park.



Translocated plants of *Caladenia busselliana*  
(Image: Belinda Davis).

For Kings Park Science, a focus over the past 12 months has been on recovery actions for the critically endangered Bussell’s Spider Orchid, *Caladenia busselliana*. Under The Rare Bloom Project™, 216 plants have been successfully returned to the wild this year, significantly boosting what was just four wild plants in 2018. This successful translocation follows regional pollinator surveys canvassing suitable habitats for pollinator presence. New seeds and mycorrhizal fungi have also been collected to increase the genetic diversity of *ex situ* collections. Testing of previously stored seed material, some collected in 1999, has allowed for inclusion of genetic material from a wild population that is no longer extant, and a further 50 plants are also now on display for the public in the Conservation Gardens of Kings Park and Botanic Garden.

## The Western Australian Seed Centre, Kensington

The Woolly Lysiosepalum, *Lysiosepalum abollatum*, is a critically endangered species known only from a single population in the Wheatbelt of Western Australia, currently consisting of only 40 plants.

In the spring of 2022, as part of the Australian Government’s Threatened Species Action Plan, DBCA regional and seed centre staff were conducting a survey of another threatened plant species, the Wongan Eriostemon (*Philotheca wonganensis*) when they made an exciting discovery: a new population of the Woolly Lysiosepalum. Over the subsequent months and after the identity of the newly discovered plants had been verified by botanists at the Western Australian Herbarium, a more extensive search of the area where these new plants were found was conducted. This search resulted in the discovery of a total of 20 plants. Capitalising upon this find, the new and known populations were targeted for seed collection as part of the ASBP’s Rare Bloom Project™.

In late spring, breathable fabric bags were placed over fruit to ensure that seed would be captured when it dispersed naturally from the plants. These bags were retrieved mid-summer and the seed taken to the Western Australian Seed Centre where it was later cleaned, quantified and prepared for storage. In total, over 7,000 seeds were collected from the new population, in addition to over 4,500 seeds collected from the previously known population.

A translocated population of the Woolly *Lysiosepalum* was established in 2009, with additional plants added over time. As part of the quality assessment of these new seed collections a sample of seed will be germination tested to determine their viability. It is expected that the germinants produced from this testing will be grown on to produce seedlings which will be used to augment plant numbers in the translocated population.

Woolly *Lysiosepalum* flowers  
(Image: Andrew Crawford, DBCA).

## South Australian Seed Conservation Centre

The South Australian Seed Conservation Centre (SASCC) is currently involved with over 30 plant conservation projects within the Kangaroo Island, Mount Lofty Ranges and Yorke Peninsula regions. The SASCC projects collaborate with a range of external groups such as private landowners and friends groups, NGOs, National Parks and Wildlife, and regional boards. In the 2022–23 season 170 seed collections for 124 species were achieved, including collections for 38 endangered, 27 vulnerable and 25 rare plant species.

In addition to seed collection, the team undertake field surveys, population assessments, plant propagation, translocations and monitoring. Over 1,000 plants of more than ten species of endangered orchids were translocated this winter along with 40+ species for recovery projects.



The Rare Bloom Project™, supported by the World Wildlife Fund (WWF) and coordinated through the ASBP, provided an opportunity for fieldwork on Yorke Peninsula, which is a largely agricultural region that still contains valuable pockets of threatened flora in small reserves and heritage agreements on private property. The project aim was to conserve the genetics from these remaining populations while still extant. A highlight of the fieldwork was meeting local farmers that own significant native vegetation and were motivated to contribute to plant conservation in the region. A threatened flora workshop held in September 2022 included a field excursion through remnant vegetation to observe a number of threatened species. In the days following the workshop, farmers discovered a new population of the endangered Large-club Spider Orchid (*Caladenia macroclavia*). This is now the largest known population for this endangered orchid which is endemic to Yorke Peninsula. The protection of this orchid, and other endemic and threatened plants from the region, is being advocated by the community, working with the SASCC to establish large resilient populations protected on their properties in the future.

A similar approach was demonstrated by the collaboration with BioR and Nature Conservation Society to establish living conservation collections of threatened species in the Kangaroo Island Rare Plant Garden. A year after the garden was opened, the team have delivered several workshops with Friends of the Garden and augmented the plantings with 1,000 plants in July.



*Caladenia macroclavia* flower Yorke Peninsula (Image: Denzel Murfet).



Kangaroo Island Rare Plant Garden Friends planting July 2023 (Image: Dan Duval).

## The Victorian Conservation Seedbank

This year, the Victorian Conservation Seedbank (VCS) made an additional 50 seed collections, securing 19 species new to the VCS. These collections included many of the high-priority species that were still to be collected following the 2019–20 bushfires. Collection of four of these species was made possible thanks to funding obtained from the WWF Rare Bloom Project™ by the ASBP.

A major highlight was a rare opportunity for VCS staff to attend a Bush Blitz species discovery expedition to the eastern alpine region of Victoria, which was held during the seed collection season. These trips are usually held earlier in the year and don't coincide with the fruiting period. This expedition enabled staff to collect from quite remote and otherwise inaccessible areas of the Alpine National Park such as Forlorn Hope Plain and Davies Plain, thanks to use of a helicopter and coordinated support from Parks Victoria Rangers. During this expedition only eight seed collections were made but these included six species that are restricted to more remote parts of the Alpine National Park. The most significant collection made on this trip was a very small collection of the Lemon-scented *Zieria*, *Zieria citriodora*. In Victoria this species is only known from a stand of plants along a remote section of Limestone Creek, on the north-western slopes of the Cobberas mountains.

Previous attempts to collect this species have been thwarted due to the remote nature of this location and time required to find and then collect plants. Along with the small seed collection, cuttings were taken for an *ex situ* conservation collection at Royal Botanic Gardens Victoria (RBGV), and the population was mapped and assessed for its recovery following the 2019–20 bushfires. Only a small portion of this population was burnt. This is perhaps somewhat surprising given its location near the top of a dry, rocky, north-facing ridge, and the section that had burnt appears to be recovering well, with seedlings and resprouting plants observed. While further seed will be required for an adequate conservation collection, we now have a much better knowledge of this species and have ensured its ongoing survival through these *ex situ* collections held at RBGV.



Andre Messina collecting *Zieria citriodora* (Image: Meg Hirst).

## Tasmanian Seed Conservation Centre

Among various activities this season, the Tasmanian Seed Conservation Centre (TSCC) made an attempt to collect seed of two threatened, alpine, cudweeds species—*Argyrotegium fordianum* and *Argyrotegium nitidulum*. The presence of *A. nitidulum* in Tasmania has been uncertain since its discovery in 2000. Survey work this summer discovered that Tasmanian *A. nitidulum* is much shorter-leaved than mainland and New Zealand material. Consequentially, *A. nitidulum* resembles another alpine cudweed, the endemic *Ewartia planchonii*. Surveying recovered over 200 *A. nitidulum* plants at the north end on Ben Lomond. Due to bad timing and ill health, both threatened cudweed targets were missed; however collections were made of *Argyrotegium mackayi* and *Euchiton lateralis*, two other cudweed species new to the TSCC. In the process of examining the several cudweeds occurring on Ben Lomond, the survey appears to have found an undescribed *Ewartia* species and seed of this taxon was also secured. Elsewhere, the Tasmanian Orchid and Research Program had a very fruitful and busy year with 20 collections made of 12 species, totalling over one million seeds.



*Argyrotegium nitidulum* in flower on Ben Lomond (Image: James Wood).

## National Seed Bank

In September 2022, Dr Lydia Guja and Dr Gemma Hoyle travelled to Spain to participate in the seventh *Seed Ecology* Conference of the International Society for Seed Science. Hosted by the University of Oviedo and the Jardín Botánico Atlántico (Atlantic Botanic Garden) in Gijón/Xixón, the conference was attended by 100 delegates from 23 countries and talks addressed all aspects of seed ecology.

The National Seed Bank (NSB) delegation made several contributions to the scientific portion of the conference, chairing sessions, delivering two oral presentations and two posters, and co-authoring a further three presentations. Lydia presented research undertaken in partnership with the University of New South Wales to understand the environmental and genetic controls of seed germination in the genus *Pomaderris*. Gemma presented research conducted in collaboration with the Australian PlantBank, Australian Tropical Herbarium and James Cook University about Australia's tropical mountain cloud forest species at substantial risk of extinction. NSB also presented posters that promoted the recently updated Australian Network for Plant Conservation's guidelines, covering guidelines for translocation of threatened plants, restoration use of seeds (Florabank Guidelines), and *ex situ* conservation of germplasm (produced with ASBP).

Discussions during the conference highlighted the strong seed banking and research partnerships across Australia that have enabled the production of such resources and innovative approaches to seed research in Australia. Following the conference, we feel inspired to incorporate emerging international concepts and approaches into our work at the NSB, to continue to improve our understanding of the ecology of Australian native seed-bearing flora.

Back home, this past year has seen a very successful collecting season for NSB. We have made significant contributions to safeguarding Australia's flora by adding new species to our collections and increasing the genetic diversity of species represented in our bank. Between October 2022 and May 2023, NSB staff and volunteers undertook over 30 collecting trips to the alpine and subalpine regions within and surrounding the Australian Capital Territory. Highlights include seed collector Alex McLachlan finding and collecting seed from two new populations of the rare and threatened *Geranium brevicaule* in the Pilot

Wilderness area of Kosciuszko National Park and the addition to our seed bank of several heavily fire-affected alpine and subalpine endemics including *Gentianella muelleriana* subsp. *jingerensis*, *Viola improcera* and *Leionema lamprophyllum* ssp. *obovatum*. These collections will be banked for conservation and be used to study the unknown germination requirements and seed dormancy of the species. The success of this season was made possible by the dedication of our staff and volunteers and funding made available through a range of collaborative conservation projects, including the Partnership's Rare Bloom Project™.



Seed collector Mitchell Korda (middle) and volunteers Margaret Mahoney (left) and Mel Henderson (right) collecting seeds of *Gentianella muelleriana* subsp. *jingerensis* at Ginini Wetland Complex in Namadgi National Park (Image: Fanny Karouta).

## The Australian PlantBank

This past year has seen the PlantBank team collect seeds of several species that were new to the Seedbank through the Australian Seedbank Partnership's Island, Alps and Forests project and The Rare Blooms Project™. This included two notable species from the Sydney region, *Grevillea speciosa* and *G. sericea*. However, a notable highlight was the first seed-banked collection of Climbing Lignum (*Muehlenbeckia adpressa*). The species is a prostrate or twinning sub-shrub from the Polygonaceae family, and although widespread in other states, its distribution modestly extends along the NSW far south coast near Eden. The area was severely burned in the 2019–20 summer bushfires but is now abundant with regenerating plants. The team located the recovering population while undertaking a collecting trip as part of the Island, Alps and Forests project. A rapid flora assessment was made, which estimated >200 plants had regenerated post-fire before seeds were collected from approximately 10 per cent of the population.



Flowers of *Muehlenbeckia adpressa*  
(Image: Katherine Thomson).

## Australian Network for Plant Conservation

This year, the Australian Network for Plant Conservation (ANPC) has focused on activities relating to Myrtle Rust, raising awareness through their online information hub and communications, and delivering a project to ensure Native Guava (*Rhodomyrtus psidioides*) is well-represented in living collections.

In addition, ANPC staff and scientists within the Partnership have been collaborating to ensure the outcomes of the Australian Academy of Science Fenner Conference on the Environment 2021/22 are captured and shared through publication. While conservation seed banks successfully maintain collections of many seed-bearing plant species, some plant species produce seeds that are difficult to collect, dry, store and utilise; these are collectively recognised as 'exceptional' species. In a paper prepared for the journal *Plants, People, Planet*, the expert working group tests a framework for identifying exceptional species within the Australian flora, collating examples and case studies for each 'Exceptionality Factor'. The paper includes a workflow that may be used to identify additional exceptional species, to make it easier for conservation practitioners to recognise exceptional species and work around the challenges they present, so that appropriate germplasm collections can be established. We look forward to sharing the publication in the second half of 2023.



# Looking to the future

The ASBP is working towards a future where Australia's native plant diversity is valued, understood and conserved for the benefit of all. To achieve this, we will focus on implementing our Strategic Plan, working with our Partners and Associates to enhance their conservation and science activities, and strengthening our links with all members of our community. The Partnership is proud to collaborate with First Nations Peoples, government, natural resource managers, business and the philanthropic community to provide evidence-based conservation and to share our knowledge of Australia's precious plants in all their diversity.



Australian Seed Bank Partnership National Steering Committee came together in person at the Global Botanic Gardens Congress in September 2022. (Image: Bradley Desmond).

# Financial Report Review

The Council of Heads of Australian Botanic Gardens  
Incorporated

For the year ended 30 June 2023

## Contents

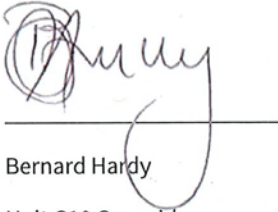
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# Reviewer's Independence Declaration

The Council of Heads of Australian Botanic Gardens Incorporated  
For the year ended 30 June 2023

I declare that, to the best of my knowledge and belief, during the year ended 30 June 2023, there have been:

1. no contraventions of the independence requirements as set out in *Associations Incorporation Act (ACT) 1991*; and
2. no contraventions of any applicable code of professional conduct in relation to the review.



Bernard Hardy

Unit G10 Quayside  
50 Eastlake Parade  
Kingston ACT 2604

Dated: 15 August 2023

# Committee's Report

## The Council of Heads of Australian Botanic Gardens Incorporated For the year ended 30 June 2023

### Committee's Report

Your committee members submit the financial report of The Council of Heads of Australian Botanic Gardens Incorporated for the financial year ended 30 June 2023.

### Committee Members

The names of committee members throughout the year and at the date of this report are:

Committee Member	Date Started	Position
Dale Arvidsson	18/03/2015	Ordinary Member
Alan Barrett	18/10/2018	Secretary
Brett Summerell	09/09/2013	Treasurer
Yann Gagnon	24/11/2022	Ordinary Member
David Reid	21/06/2022	Ordinary Member
Tim Entwistle	04/03/2013	Ordinary Member
Bryan Harty	01/07/2013	Ordinary Member
Anthony Whalen	22/11/2022	Ordinary Member
Denise Ora	19/11/2020	Chairperson
Michael Harvey	05/07/2021	Ordinary Member
Judy West	14/09/2011	Ordinary Member

### Meetings of Committee Members

During the financial year, a number of committee meetings were held. Attendances by each of committee member during the year were as follows:

Committee Members Name	Number Eligible to Attend	Number Attended
Dale Arvidsson	5	5
Alan Barrett	5	5
Brett Summerell	5	5
David Reid	5	4
Tim Entwistle	3	3
Bryan Harty	5	5
Denise Ora	5	5
Michael Harvey	5	5
Judy West	5	5
Gary Davies	2	2
Yann Gagnon	2	2
Anthony Whalen	3	3

### Principal Activities

The Council of Heads of Australian Botanic Gardens Incorporated is a not-for-profit Association established for the purpose of supporting:

- the protection, conservation and enhancement of Australian plants and their ecosystems.
- the provision of information and education.

- undertaking research about plants and plant communities.

### Significant Changes

No significant change in the nature of these activities occurred during the year.


### Operating Result

The profit after providing for income tax for the financial year amounted to \$4,355.18.

### Going Concern


This financial report has been prepared on a going concern basis which contemplates continuity of normal business activities and the realisation of assets and settlement of liabilities in the ordinary course of business. The ability of the association to continue to operate as a going concern is dependent upon the ability of the association to generate sufficient cashflows from operations to meet its liabilities. The members of the association believe that the going concern assumption is appropriate.

Signed in accordance with a resolution of the Members of the Committee on:



Denise Ora (Chairperson)

Dated: 30/08/2023



Brett Summerell (Treasurer)

Dated: 31/08/2023

# Income and Expenditure Statement

The Council of Heads of Australian Botanic Gardens Incorporated  
For the year ended 30 June 2023

	2023	2022
<b>Income</b>		
Donations	23,606	3,607
<b>Total Income</b>	<b>23,606</b>	<b>3,607</b>
<b>Gross Surplus</b>	<b>23,606</b>	<b>3,607</b>
<b>Expenditure</b>		
Accounting Fees	2,575	4,542
Computer Expenses	-	4,426
General expenses	13,980	-
Insurance	2,014	2,159
Printing & Stationery	682	1,500
<b>Total Expenditure</b>	<b>19,251</b>	<b>12,627</b>
<b>Current Year Surplus/ (Deficit) Before Income Tax Adjustments</b>	<b>4,355</b>	<b>(9,019)</b>
<b>Current Year Surplus/(Deficit) Before Income Tax</b>	<b>4,355</b>	<b>(9,019)</b>
<b>Net Current Year Surplus After Income Tax</b>	<b>4,355</b>	<b>(9,019)</b>

The accompanying notes form part of these financial statements. These statements should be read in conjunction with the attached compilation report.

# Assets and Liabilities Statement

## The Council of Heads of Australian Botanic Gardens Incorporated As at 30 June 2023

	NOTES	30 JUN 2023	30 JUN 2022
<b>Assets</b>			
<b>Current Assets</b>			
Cash and Cash Equivalents	2	484,869	1,222,204
Trade and Other Receivables	3	1,100	1,100
<b>Total Current Assets</b>		<b>485,969</b>	<b>1,223,304</b>
<b>Total Assets</b>		<b>485,969</b>	<b>1,223,304</b>
<b>Liabilities</b>			
<b>Current Liabilities</b>			
Bank Overdraft	2	200	200
GST Payable		40,081	26,967
<b>Total Current Liabilities</b>		<b>40,281</b>	<b>27,167</b>
<b>Other Current Liabilities</b>			
Accrued Expenses		3,950	3,950
<b>Total Other Current Liabilities</b>		<b>3,950</b>	<b>3,950</b>
<b>Non-Current Liabilities</b>			
<b>Other Non-Current Liabilities</b>			
Projects		379,253	1,134,058
<b>Total Other Non-Current Liabilities</b>		<b>379,253</b>	<b>1,134,058</b>
<b>Total Non-Current Liabilities</b>		<b>379,253</b>	<b>1,134,058</b>
<b>Total Liabilities</b>		<b>423,485</b>	<b>1,165,175</b>
<b>Net Assets</b>		<b>62,484</b>	<b>58,129</b>
<b>Member's Funds</b>			
Capital Reserve		62,484	58,129
<b>Total Member's Funds</b>		<b>62,484</b>	<b>58,129</b>

The accompanying notes form part of these financial statements. These statements should be read in conjunction with the attached compilation report.

# Notes to the Financial Statements

## The Council of Heads of Australian Botanic Gardens Incorporated For the year ended 30 June 2023

### 1. Summary of Significant Accounting Policies

The financial statements are special purpose financial statements prepared in order to satisfy the financial reporting requirements of the ACT Associations Incorporation Act 1991. The committee has determined that the association is not a reporting entity.

The financial statements have been prepared on an accruals basis and are based on historic costs and do not take into account changing money values or, except where stated specifically, current valuations of non-current assets.

The following significant accounting policies, which are consistent with the previous period unless stated otherwise, have been adopted in the preparation of these financial statements.

#### Property, Plant and Equipment (PPE)

Leasehold improvements and office equipment are carried at cost less, where applicable, any accumulated depreciation.

The depreciable amount of all PPE is depreciated over the useful lives of the assets to the association commencing from the time the asset is held ready for use.

Leasehold improvements are amortised over the shorter of either the unexpired period of the lease or the estimated useful lives of the improvements.

#### Impairment of Assets

At the end of each reporting period, the committee reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have been impaired. If such an indication exists, an impairment test is carried out on the asset by comparing the recoverable amount of the asset, being the higher of the asset's fair value less costs to sell and value in use, to the asset's carrying amount. Any excess of the asset's carrying amount over its recoverable amount is recognised in the income and expenditure statement.

#### Provisions

Provisions are recognised when the association has a legal or constructive obligation, as a result of past events, for which it is probable that an outflow of economic benefits will result and that outflow can be reliably measured. Provisions are measured at the best estimate of the amounts required to settle the obligation at the end of the reporting period.

#### Cash on Hand

Cash on hand includes cash on hand, deposits held at call with banks, and other short-term highly liquid investments with original maturities of three months or less.

#### Accounts Receivable and Other Debtors

Accounts receivable and other debtors include amounts due from members as well as amounts receivable from donors. Receivables expected to be collected within 12 months of the end of the reporting period are classified as current assets. All other receivables are classified as non-current assets.

#### Goods and Services Tax (GST)

Revenues, expenses and assets are recognised net of the amount of GST, except where the amount of GST incurred is not recoverable from the Australian Taxation Office (ATO). Receivables and payables are stated inclusive of the amount of GST

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These notes should be read in conjunction with the attached compilation report.



receivable or payable. The net amount of GST recoverable from, or payable to, the ATO is included with other receivables or payables in the assets and liabilities statement.

### Financial Assets

Investments in financial assets are initially recognised at cost, which includes transaction costs, and are subsequently measured at fair value, which is equivalent to their market bid price at the end of the reporting period. Movements in fair value are recognised through an equity reserve.

### Accounts Payable and Other Payables

Accounts payable and other payables represent the liability outstanding at the end of the reporting period for goods and services received by the association during the reporting period that remain unpaid. The balance is recognised as a current liability with the amounts normally paid within 30 days of recognition of the liability.

2023

### 2. Cash on Hand

Pay Pal	(200)
Westpac 224159 Project Management	274,677
Westpac 224167 Administration	198,800
Westpac 642852 Public Fund	11,392
<b>Total Cash on Hand</b>	<b>484,669</b>

2023

### 3. Trade and Other Receivables

<b>Trade Receivables</b>	
Other Debtors	1,100
<b>Total Trade Receivables</b>	<b>1,100</b>
<b>Total Trade and Other Receivables</b>	<b>1,100</b>

These notes should be read in conjunction with the attached compilation report.

# True and Fair Position

## The Council of Heads of Australian Botanic Gardens Incorporated For the year ended 30 June 2023

### Annual Statements Give True and Fair View of Financial Position and Performance of the Association

We, Denise Ora, and Brett Summerell, being members of the committee of The Council of Heads of Australian Botanic Gardens Incorporated, certify that –

The statements attached to this certificate give a true and fair view of the financial position and performance of The Council of Heads of Australian Botanic Gardens Incorporated during and at the end of the financial year of the association ending on 30 June 2023.



Denise Ora (Chairperson)

Dated: 30/08/2023



Brett Summerell (Treasurer)

Dated: 31/08/2023

# Review Report

## The Council of Heads of Australian Botanic Gardens Incorporated For the year ended 30 June 2023

### Report on the Financial Report

We have reviewed the accompanying financial report, being a special purpose financial report, of The Council of Heads of Australian Botanic Gardens Incorporated which comprises the committee's report, the assets and liabilities statement as at 30 June 2023, the income and expenditure statement for the year then ended, notes comprising a summary of significant accounting policies and other explanatory information, and the certification by members of the committee on the annual statements giving a true and fair view of the financial position and performance of the association.

### Committee's Responsibility for the Financial Report

The Council of Heads of Australian Botanic Gardens Incorporated is responsible for the preparation and fair presentation of the financial report, and has determined that the basis of preparation described in Note 1 is appropriate to meet the requirements of the *Australian Charities and Not-for-profits Commission Act 2012* (ACNC Act) and is appropriate to meet the needs of the members. The committee's responsibility also includes such internal control that the committee determines is necessary to enable the preparation and fair presentation of a financial report that is free from material misstatement, whether due to fraud or error.

### Reviewer's Responsibility

Our responsibility is to express a conclusion on the financial report based on our review. We conducted our review in accordance with Auditing Standard on Review Engagements ASRE 2415 *Review of a Financial Report: Company Limited by Guarantee or an Entity Reporting under the ACNC Act or Other Applicable Legislation or Regulation*, in order to state whether, on the basis of the procedures described, anything has come to our attention that causes us to believe that the financial report does not satisfy the requirements of Division 60 of the ACNC Act including: giving a true and fair view of the registered entity's financial position as at 30 June 2023 and its performance for the year ended on that date; and complying with the Australian Accounting Standards and the *Australian Charities and Not-for-profits Commission Regulation 2013* (ACNC Regulation). ASRE 2415 requires that we comply with the ethical requirements relevant to the review of the financial report.

A review of a financial report consists of making enquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Australian Auditing Standards and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

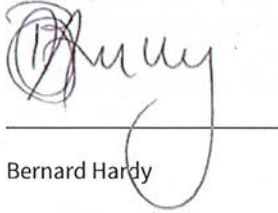
### Conclusion

Based on our review, which is not an audit, nothing has come to our attention that causes us to believe that the financial report of The Council of Heads of Australian Botanic Gardens Incorporated does not satisfy the requirements of Division 60 of the *Australian Charities and Not-for-profits Commission Act 2012* including:

- (a) giving a true and fair view of the registered entity's financial position as at 30 June 2023 and of its financial performance and cash flows for the year ended on that date; and
- (b) complying with Australian Accounting Standards to the extent described in Note 1, and Division 60 of the *Australian Charities and Not-for-profits Commission Regulation 2013*.

### Basis of Accounting

Without modifying our opinion, we draw attention to Note 1 to the financial statements, which describes the basis of accounting. The financial report has been prepared to assist The Council of Heads of Australian Botanic Gardens Incorporated to meet the requirements of the ACNC Act. As a result, the financial report may not be suitable for another purpose.

A handwritten signature in black ink, appearing to read 'Bernard Hardy', is written over a horizontal line.

Bernard Hardy

Unit G10 Quayside  
50 Eastlake Parade  
Kingston ACT 2604

Dated: 15 August 2023

# Certificate By Members of the Committee

The Council of Heads of Australian Botanic Gardens Incorporated  
For the year ended 30 June 2023

I, Denise Ora, c/o Australian National Botanic Gardens, Clunies Ross Street, ACTON ACT 2601 certify that:

1. I attended the annual general meeting of the association held on 27 October 2023.
2. The financial statements for the year ended 30 June 2023 were submitted to the members of the association at its annual general meeting.



Denise Ora (Chairperson)

Dated: 03/11/2023

# Acknowledgements

The Australian Seed Bank Partnership would like to thank all of our supporters.

The financial support we receive through grants, philanthropy and public donations makes a significant contribution to conserving Australia's native plant diversity. A special thank you to all the organisations and individuals who provided funding and donated to the Partnership this year.

Our Partner and Associate organisations also provide crucial in-kind contributions that make what we do possible. The time, effort and expertise that is provided by Partner organisations for the love of native plants makes a tangible difference in what we can achieve.

Our work benefits greatly from the invaluable dedication and skills of volunteers who join us in the field and in seed banks to secure and process the seeds we collect. Their generous contributions ensure our native plants are provided with the best chance to survive in an uncertain future, and allow our seed scientists to focus their time on solving complex challenges with seed dormancy and germination.

Anyone in Australia or around the world can help us in our mission to conserve Australia's native plant diversity. Please contact us if you have an interest in supporting our work into the future.

Organisation/individual	Support provided
Australian Government Department of Climate Change, Energy, the Environment and Water	<ul style="list-style-type: none"> <li>• Funding for the Island, Alps and Forests project through the Regional Bushfire Recovery for Multiregional Species and Strategic Projects Program</li> <li>• Funding to support the implementation of the Myrtle Rust Survey</li> </ul>
WWF-Australia & Botanica by Airwick	Funding for The Rare Bloom Project™
Woolworths Group	Additional funding to support activations for The Rare Bloom Project™
UK Government and the Royal Botanic Gardens, Kew, UK	Provision of funding for the Emergency Seed Collecting Fund to Save Australian Native Flora project, and the Critically Endangered Project
Proctor & Gamble	Funding for the Protecting Plants with Proctor & Gamble project
Director of National Parks and Royal Botanic Gardens Sydney	Hosting the Partnership Secretariat
Hogan Lovells	Pro bono legal services
Anna Moreing	Volunteer with the Partnership Secretariat

# Get involved

Check out our website to learn more about our initiatives



Partner with us to conserve Australian native plants

Donate to support our efforts



Connect with us on social media to follow our journey



*Epacris sprengeioides* in bloom  
(Image: Laura Watts).

## Your donations will make a difference

People like you enable the Partnership to secure plant species for generations to come. With your help we can find and collect our native flora, and invest in world-leading science to unlock their germination secrets. Our nationwide network of seed banks can then safely store these precious genetic parcels of hope until they are needed for the restoration of Australia's landscapes.

Your donation will support the work of the Partnership. Our governing body ([the Council of Heads of Australian Botanic Gardens](#)) has established a Public Fund Committee to oversee the management of donations, so you can rest assured that your gift will go directly to the conservation of Australia's native flora.

Donating to the Partnership is simple when using the secure PayPal portal on our website. We welcome contributions of any size and can work with you to design a package that suits the parts of our work that you would like to support.

CHABG Inc. (trading as the Australian Seed Bank Partnership) is a [registered charitable organisation](#), with deductible-gift recipient status (item 1), and operates the Council of Heads of Australian Botanic Gardens Public Fund. Donations of \$2 and above are tax deductible.  
ABN: 58 153 442 365.



## Contact us

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Canberra ACT 2601 Australia

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+61 (0)2 6250 9473  
[seedpartnership.org.au](http://seedpartnership.org.au)

 @AustralianSeedBankPartnership

 @SeedPartnership

 @SeedPartnership

Seeds from the Wongan cactus flower (*Daviesia euphorbioides*) were collected as part of our Critically Endangered Project (Image: Andrew Crawford).

