

PROJECT PHOENIX



# WHAT ARE CONSERVATION SEED BANKS AND WHAT DO THEY DO?



PROJECT SUMMARY

JUNE 2021

*Across all of our Project Phoenix activities and actions we pay respect to the Traditional Owners and Custodians of the lands and waters on which we work. We honour the resilience and continuing connection to country, culture and community of all Aboriginal and Torres Strait Islander people across Australia. We recognise the decisions we make today will impact the lives of generations to come.*

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# EXECUTIVE SUMMARY

## About the project

***What are conservation seed banks and what do they do?* reviews efforts across Australia in terms of the number of taxa represented in conservation seedbanks, research capacity, training capacity, native plant production, and storage capacity to meet Australia's restoration capacity now and in the future.**

## Scope

The scope of the project was to undertake a review of the conservation seed sector to articulate national seed and plant restoration capacity (in combination with commercial capacity).

This project identifies entities associated with native seed management including the location and number of non-commercial (conservation and community) native seedbanks, threatened species seed production areas (SPAs), and seed storage and native plant production capacity nationally.



## Introduction

**This project assists in identifying what information is available on the conservation sector to establish its restoration capacity.**

In the context of native seed, the conservation and restoration sectors are closely linked. The seedbanks, seed production areas (SPAs) and nurseries within the conservation sector assist in the provision of seed for restoration purposes.

There are 'pure' conservation entities, such as botanic gardens, that act as repositories for seed and hold capacity in research and development.

There are community-based conservation groups who hold stores of seeds with the purpose of improving or restoring the local environment. Some community-based seedbanks sell seed to the restoration (and other) sectors.

In addition, there are several commercial organisations that have been identified which have specific capacity in terms of conservation and provide environmental services and seed for restoration purposes.



## Issues

Several issues were identified during the gathering and preparation of data for this project:

- Although a short online survey was developed (see Appendix A in full report *What are conservation seed banks and what do they do?*) and circulated to the conservation sector via the Australian Network for Plant Conservation and Council of Heads of Australian Botanic Gardens, only three surveys were completed. This caused a pivot in approach to a desktop review of the conservation sector augmented with some stakeholder consultation.
  - Low survey responses may be due to a number of different survey instruments running concurrently throughout Project Phoenix (although not specific to the conservation sector) that may have led to survey fatigue.
- Although a large number of organisations were identified, some have more publicly available information than others. This means the data available is highly variable and there are considerable gaps, particularly in relation to capacity.
  - Specifically, there is no information on financial capacity or threatened species production areas.
- Although effort was taken to ensure all relevant organisations were identified, this report details a sub-set of entities whose data was publicly available on the internet. It is not a complete nor comprehensive audit of the native seed conservation capacity.

## Comments

Not applicable



## Key output

The key output from this project is the report *What are conservation seed banks and what do they do?*

## Outcomes

- The number of conservation seedbanks = 17.<sup>1</sup>
  - conservation seedbanks have the objective of providing a repository for Australian (and other)<sup>2</sup> flora. These repositories are generally used for the purpose of conserving biodiversity, scientific research, display and education
  - conservation seedbanks account for 94 per cent of the taxa (species) identified.
- The number of community seedbanks = 21.<sup>3</sup>
  - community-based seedbanks are used for the purpose of improving the local environment, but are also repositories. Many of them are not-for-profit organisations, some of them sell seed to the public and some retain seed only for their own community use<sup>4</sup>
  - community-based seedbanks account for six per cent of the taxa identified.
- Government-funded seedbanks = 17.
- Non-government funded seedbanks = 22.<sup>5</sup>
- The approximate number of taxa represented nationally in these seedbanks = 26,291 native species.<sup>6</sup>

Refer to the full report *What are conservation seed banks and what do they do?* for a breakdown of seedbanks and taxa by organisation and jurisdiction.

<sup>1</sup> Seedbanks hold native species but may not be entirely native seedbanks.

<sup>2</sup> Some seedbanks include non-native species — many seedbanks report their taxa and also the proportion of native seeds — the numbers presented here correspond where possible to the number of native seed species.

<sup>3</sup> Some of these community seedbanks sell seed but they are generally run by not-for-profit entities. In addition, there is one commercial seedbank that is not a conservation or community-based seedbank (BioBankSeed).

<sup>4</sup> Murray Local Land Services seedbank is an exception as it is government funded.

<sup>5</sup> This includes the commercially operated BioBankSeed seedbank.

<sup>6</sup> These are not unique species — some have been estimated from the stated proportion of native seeds held in a seedbank.





## Findings

The conservation sector, not unlike the native seed sector as a whole, is comprised of multiple players, some big and many small. As a result, it is no surprise that there is limited coordination within and across the sector, and that capacity is highly variable.

Most botanic gardens are government funded and dependent on budgets as well as top up funding from grants or donations. The community-based conservation sector in large part operates as not-for-profit and is dependent on grants, donations and volunteers.

**These funding arrangements are likely to be the reason for variable capacity. Botanic gardens and other government-funded institutions appear to have the highest capacity and community-based entities have lower levels of capacity.**

In addition, there are several networks/societies at a state (17) and national (6) level including the Australian Seedbank Partnership and native plant societies as well as other groups, such as the Australian Network for Plant Conservation and Council of Heads of Australian Botanic Gardens, that hold capacity primarily in terms of staff (capability) and research. However, unfortunately there is limited publicly available information to support this assertion.

The database developed as part of this project is the first of its kind and is a solid start that can be further developed with input from the sector. The database is limited as it only focuses on publicly available information. However, the advantage is that there are no concerns in sharing this information across the sector.

**Sector participants will be able to search for organisations on a state basis, by focus, by objective and by governance. It will also be easier to find seedbanks, SPAs and nurseries involved in conservation.**

In particular, this database goes beyond the major botanic gardens and attempts to capture a large share (55% of organisations in the database are community-based organisations) of the community-based conservation sector nationally.

Privacy concerns and lack of trust in the native seed sector overall limited the information that could be sourced for this project.

## Descriptive statistics

The key findings from this project are:

- NSW has the largest number of organisations (27%) in the conservation space, followed closely by Victoria (22%). The community-based systems in Victoria are well aligned and networked under Landcare and Seeding Victoria.
- Community-based conservation organisations are well represented (55%), followed by those organisations with a conservation focus (e.g. botanic gardens) (34%).



- In line with the large proportion of community-based organisations, the majority are not-for-profits (56%) followed by government agencies (28%).
- 32% of organisations aim to improve the local environment and 22% operate primarily as repositories for conservation purposes.
- Networks and societies are a key feature. State-based networks and societies (18%) are more integral to the sector than national networks and societies (6%).
- Commercial players identified on the internet with an interest in conservation are primarily found in NSW.
- There were 17 conservation seedbanks and 21 community-based seedbanks identified across Australia. Between them they hold approximately 26,000 non-unique species, of which 94% are held by the conservation seedbanks.
- There was very little publicly available information on the capacity of these organisations.
- The botanic gardens, as key players in the sector, have a well-developed research network and considerably more reported capacity than community-based entities who operate primarily on a volunteer basis with the objective of improving the local environment.

## Observations

The following observations from stakeholder consultations broadly align with the findings of this review and add some context to capacity in the conservation sector.

- Stakeholders consider that there is limited capacity in the sector, specifically in relation to regionally specific training, for different sector participants (collectors, sellers and purchasers) and Traditional Owners.
- Several stakeholders noted that the uncertainty of demand for native seed stifles investment in capacity across the sector and, as a result, there are funding shortages for infrastructure, skills/training, testing and seed production areas (SPAs).
- The conservation sector, with a good public aim, may have less reliance on demand for native seed than the restoration or commercial sectors. An exception is seedbanks, many of whom sell seed as well as store it for local/community use. Funding for the conservation sector is predominantly provided by government (with some philanthropic support) and is generally considered to be insufficient and highly variable.
- It should be noted that for a large proportion of organisations that are community-based not-for-profits, reliance on donations and grants is likely to be more variable and less sufficient than the funding available to botanic gardens and other government agencies.
- Many stakeholders noted the importance of networks for the provision of information and coordination across the sector. The botanic gardens are considered to have a strong network focus that works well but is only focused on botanic gardens. Native Plant Societies and Landcare appear to be the most active at the state and regional level. However, these organisations are not solely focused on native seed — although many are active in conservation and have links to seedbanks.



Key observations include:

- There is capacity available in the botanic gardens that could be targeted towards building the sector from the bottom up.
  - Botanic gardens have the capacity to become more involved in the conservation of native seed in their states. They hold the majority of identified capability and have more financial assurance than other players in the sector. For example, fee-for-service extension programs such as specific training and development, and the provision of specialised information services or facilities could be made available for the use of the community conservation sector.
- The conservation sector has the potential to support the restoration sector. However, this should be a two way relationship, as it is likely that the restoration sector has the capacity to support the conservation sector, in particular community-based entities and those that are not-for-profit.
  - An example may include the use of restoration sector equipment (e.g. seed harvesting, sorting, cleaning etc equipment) that could be made available to the community-based conservation sector either through an in-kind or a commercial (fee-for-service) arrangement.

## Evidence

In May and June 2021, a series of six one-on-one interviews were conducted on conservation capacity. These stakeholders included:

- Kate Andrews — NRM Regions Australia
- Damian Wrigley — ASBP
- Clare McDougal — Hunter LLS
- Peter Cuneo — Royal Botanic Garden Sydney
- Martin Driver — Healthy Seeds Partnership
- Eamonn Flanagan — BGANZ.

In April and May 2021, a series of 14 strategy design workshops were conducted as part of the Project Phoenix ten-year Strategy development.<sup>7</sup> Conservation and capacity were discussed as a part of each of these workshops and there was one workshop that focused on the conservation sector specifically. Thirty-six stakeholders attended the conservation workshop.

Refer to the full report *What are conservation seed banks and what do they do?* for further information including survey questions and stakeholder lists.





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<sup>7</sup> This report contributes to the evidence base for a ten-year strategy to guide the native seed and landscape sector. The document, which is untitled until endorsement in September 2021, is referred to as the Strategy in all Project Phoenix publications.



# RECOMMENDATIONS

Key recommendations from this review are as follows:

RECOMMENDATIONS	
 <p>1</p>	<p><b>The database provides valuable information for the conservation and restoration sectors and should be made publicly available. This should be possible as all the information contained in the database has come from the public domain.</b></p>
 <p>2</p>	<p><b>Consideration should be given to do further work on the database including:</b></p> <ul style="list-style-type: none"> <li>• Broadening the database to include other information captured in other Project Phoenix projects (e.g. <i>Revealed! The National Native Nursery Network</i> and <i>Australian native seed production in 2021</i>).</li> <li>• Deepening the understanding of capacity through a comprehensive audit (noting the limitations of doing so, including privacy concerns).</li> </ul>
 <p>3</p>	<p><b>Botanic gardens should provide fee-for-service extension programs within their state or territory to improve the capacity of community-based conservationists and the native seed sector more broadly.</b></p>
 <p>4</p>	<p><b>The conservation sector should engage in dialogue with the restoration sector in order to identify the restoration sector's needs and understand how the capacity of the conservation sector can be used to assist restoration.</b></p> <p>Conversely, consideration of what the restoration sector may be able to offer the conservation sector in terms of capacity should also be explored specifically in relation to capability, storage facilities, SPAs, nurseries and specialised equipment.</p>



## WANT TO KNOW MORE?

For further information read the full report *What are conservation seed banks and what do they do?*

### Related projects

- *Join the National Seed Network!*
- *Revealed! The National Native Nursery Network*
- *Australian native seed production in 2021*
- *How does the native seed market work?*

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