

Healthy Seeds PROJECT



'Healthy seeds for resilient restoration – A reliable, genetically appropriate supply of native seed for resilient ecological restoration in NSW'

The ANPC embarked on an 18 month project to deliver an evidence-based Roadmap to secure a reliable, genetically-appropriate, native seed supply in NSW for restoration. This project also involved updating the *Florabank Guidelines best practice guidelines for native seed collection and use*. The Healthy Seeds Project was funded by the NSW Government through its Environmental Trust. Below you will find a summary of the Roadmap.

HEALTHY SEEDS PROJECT: ROADMAP SUMMARY

A STRATEGIC PLAN TO IMPROVE NATIVE SEED SUPPLY FOR ECOLOGICAL RESTORATION IN NSW

Healthy Seeds Project

The NSW Healthy Seeds Project undertook an investigation to learn more about the issues and opportunities for the native seed sector in NSW. This summary report was developed by the Project by the ANPC for the NSW Environment Trust.

Landscapes across Australia need to be restored due to salinity, inappropriate fire regimes, desertification, erosion, development, invasive species, land clearing, and to ameliorate effects of climate change.

Sometimes, landscapes can not recover on their own through natural regeneration. In these cases, restoration depends on us collecting native seeds to sow or to plant seedlings.

Seeds for restoration are mostly collected from the wild. But, due to land clearing, wild populations are fragmented. Insufficient collection areas can lead to overharvesting and low genetic diversity of seeds, which can mean that restored populations are less resilient.

So, can we collect enough seeds of the right species, at the right time, sourced from the right places, with sufficient genetic diversity to do this restoration?

Project aims

1. Establish a better understanding of the most effective and efficient ways to improve seed usage, and reach better agreement and coordination between various industry sub-sectors and government agencies.
2. Improve the reliable supply and genetic health of native seed to achieve resilient ecological restoration in NSW.

Investigation methods

- A survey
- Expert elicitation
- A literature review
- Seed Production Area Audit

THE INVESTIGATION FOUND

Supply and demand characteristics

- Around 90,000 kg of native seed was collected in 2019.
- Most seed was not collected under licence.
- Most seed is collected from the wild on public lands and roadsides.
- A relatively small amount of seed was harvested from Seed Production Areas (SPAs).
- Main clients are government, landcare, nurseries and the mining sector.
- The majority of seed collected (by weight) was grasses, followed by shrubs and trees, followed by forbs.
- Most collectors targeted fewer than 30 species, some targeted more than 30, a few targeted more than 100.
- Record keeping systems varied. Less than a third used databases, the remainder either used spreadsheets or paper records, or kept limited or no records.
- Seed storage capacity was limited, and storage conditions varied across the sector.
- There is a lack of seed supply co-ordination and co-ordinated data collection on seed supply, leading to difficulties in estimating future supply and demand.

Main supply barriers

- Delays, lack of clarity and complexity of seed licences
- Lack of co-ordination at state and regional levels
- Decline in seed availability, supply is not coordinated
- Funding is variable, short term, and not co-ordinated
- Purchasers lack knowledge and training on seeds
- Lack of opportunistic collection and investment in SPAs.
- Inability to attract, train and retain staff

RECOMMENDATIONS TO OVERCOME BARRIERS

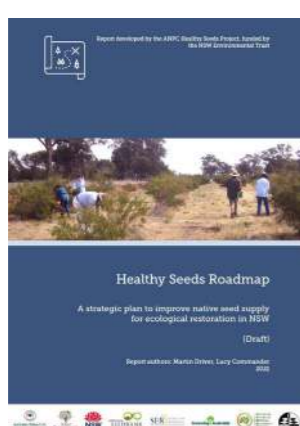
- 1. Co-ordination** Co-ordinate seed supply and demand, plan restoration, identify infrastructure and seed production needs, provide training, and communicate research needs and outcomes at state and regional levels.
- 2. Licencing & Record Keeping** Ensure that licencing systems are more efficient, effective, useful and fit for purpose; licence applications have clear instructions, and achieve the aim of preventing over-harvesting and having a net positive environmental impact. Adopt and implement minimum standards for seed collection (including data collection) and use these to underpin regulatory approvals. Use appropriate record keeping systems and provide data to the buyer to improve transparency in seed quality.
- 3. Project management** Restoration projects and funding models must take into consideration the logistics of the seed supply chain, the time required for seed sourcing, propagation (if needed), implementation and monitoring, as well as the variability of climate from year to year. In some cases, this may mean project budgets and grant timelines should be extended from one year to five or more years.
- 4. Restoration planning** Co-ordinate and plan areas to be restored and seed requirements at a regional level to strategically plan resource allocation and forecast seed requirements. Assist restoration planning and inform seed collection requirements by developing vegetation guides for each region. Identify existing regional infrastructure (e.g. seed stores, seed production areas), and determine infrastructure requirements.
- 5. Training** Initiate and implement a sector-wide training program in seed literacy to improve restoration community capacity.

HOW THESE RECOMMENDATIONS WILL HELP SEED SUPPLY

Seed supply chain involves seed being passed from seed collectors to end users, possibly through a third party such as a testing facility, seed bank or native plant nursery.

Selecting species and locations	Collecting	Seed production areas	Testing	Processing & Storage	Entire supply chain
Funding timelines to allow for collection of sufficient seeds from the required species and the ideal locations. (R3)	Regional coordination and allocation of field collections. (R1) Standardised record keeping. Provision of data to buyer. (R2) Efficient and effective seed collection licencing systems. (R2)	Regional coordination of species needs for seed production. (R1) Investment in regional seed production areas. (R4)	Standardised record keeping. Provision of data to buyer. (R2)	Identify current seed processing and storage infrastructure capacity, and future needs and gaps. (R4)	Seed literacy training to assist seed purchasers, project funders, regulators, users and sector participants. (R5)

Specific suggestions along seed supply chain linked to recommendation number (previous page)



To download the full Roadmap and find out more about the Healthy Seeds Project please visit:

<https://www.anpc.asn.au/healthy-seeds/>