



## Seed – getting back to Landcare’s roots

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Australian Network for Plant Conservation (ANPC)



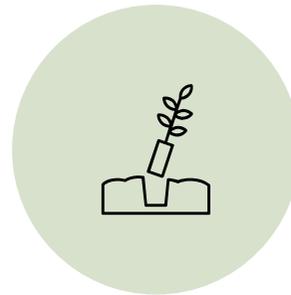
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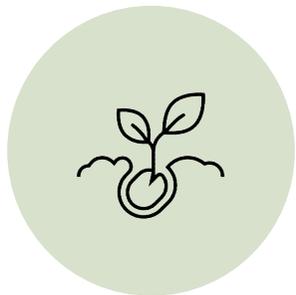
# FOR SOMETHING SO TINY, NATIVE SEED PACKS A LOT OF PUNCH



Native seed – one of the fundamental ingredients for Landcare



We need guidelines to help best use this precious resource



ANPC has updated the Florabank Guidelines – best practice guidelines for native seed collection and use

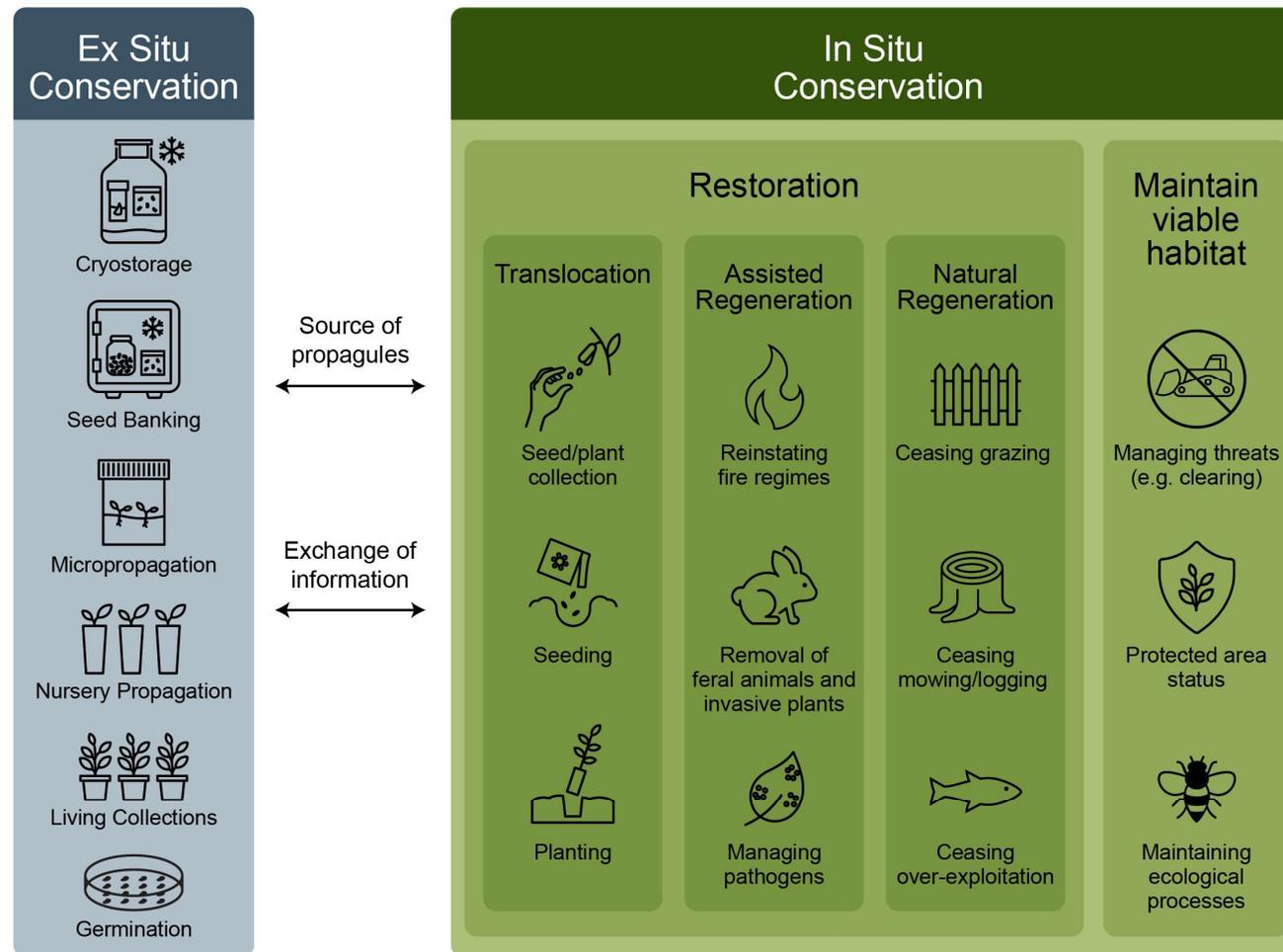


Everyone involved with native seeds, from policy makers to practitioners, collectors to conservationists should read the Florabank Guidelines

# WHEN DO WE NEED SEED?



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Commander LE, Offord CA, Auld TD (2021) FloraBank Guidelines Module 1 - Introduction. In 'FloraBank Guidelines (2nd edn).' (Ed. LE Commander) (FloraBank Consortium: Australia)

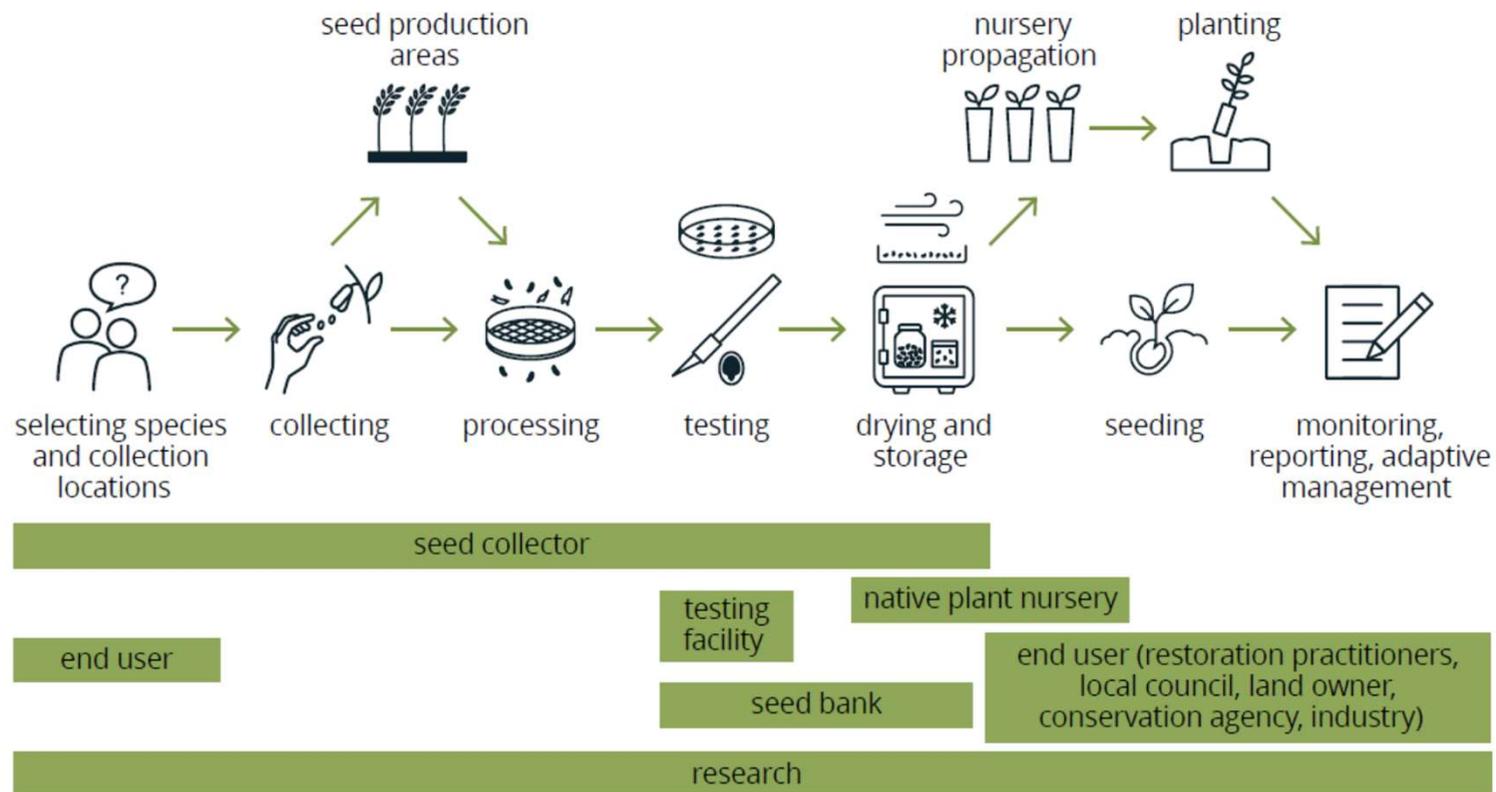
# SEED SUPPLY CHAIN



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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.



# SO MANY QUESTIONS!

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Which species?

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Where from?

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How much?

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Which licence?

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What's the quality?

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How to store?

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Pre-treatments?

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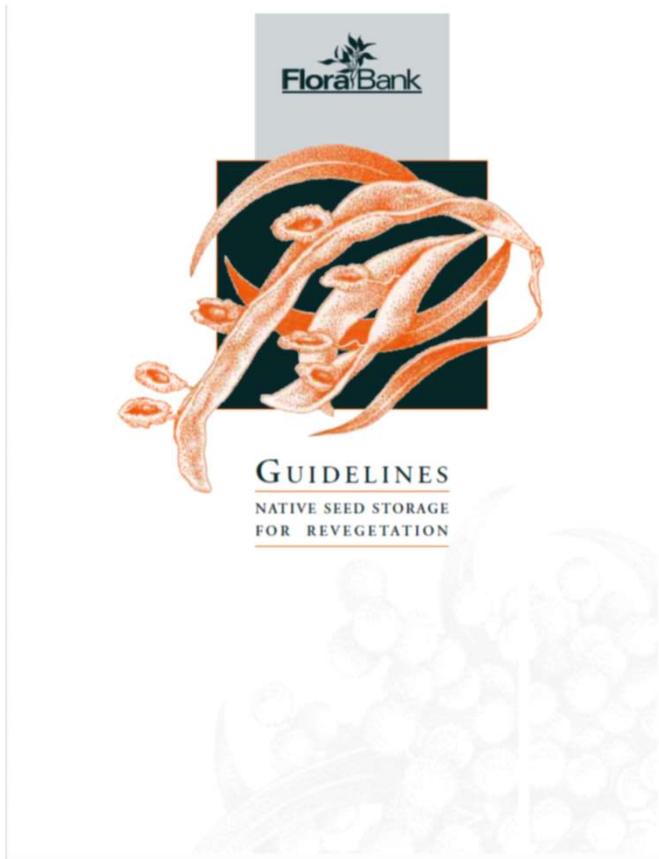
How to sow?



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# FLORABANK GUIDELINES – 1<sup>ST</sup> EDITION

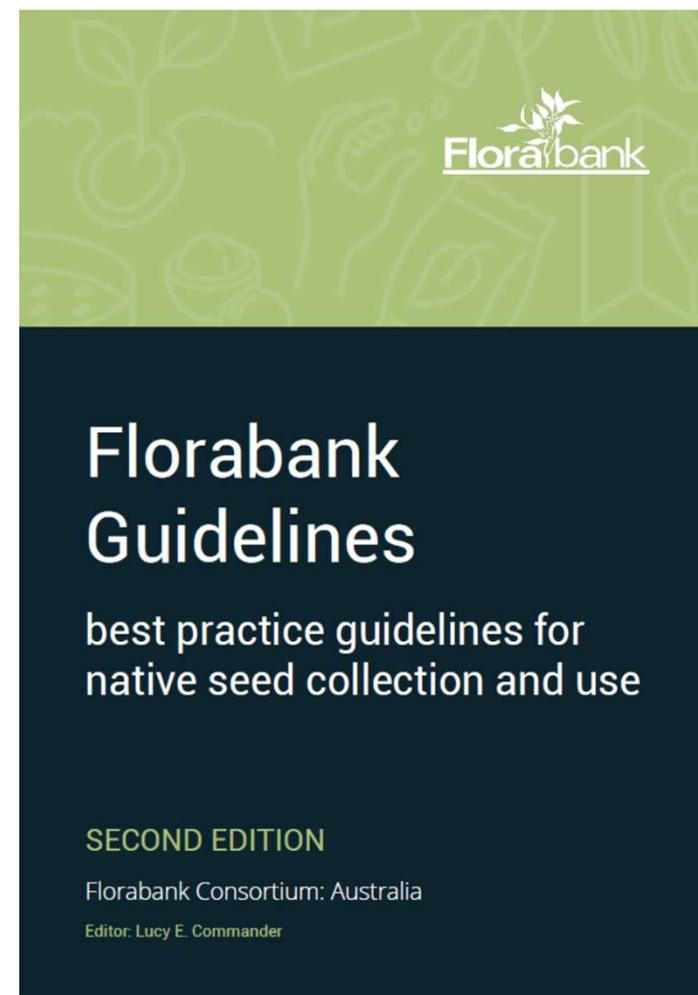


- 10 guidelines
- Written 1999/2000
- Partnership
  - Greening Australia
  - CSIRO Forestry and Forest Products through the Australian Tree Seed Centre
  - Australian National Botanic Gardens
- Funded by the Bushcare program of the Natural Heritage Trust

# FLORABANK GUIDELINES – 2<sup>ND</sup> EDITION



- Update funded by the NSW Government through its Environmental Trust
- Part of the ANPC Healthy Seeds Project
- Consortium of ANPC and 7 organisations



# UPDATE PROCESS

 Formed a reference group

 Listed modules – some merged, some split, some new

 Invited >85 authors, >45 said yes

 Drafted each module

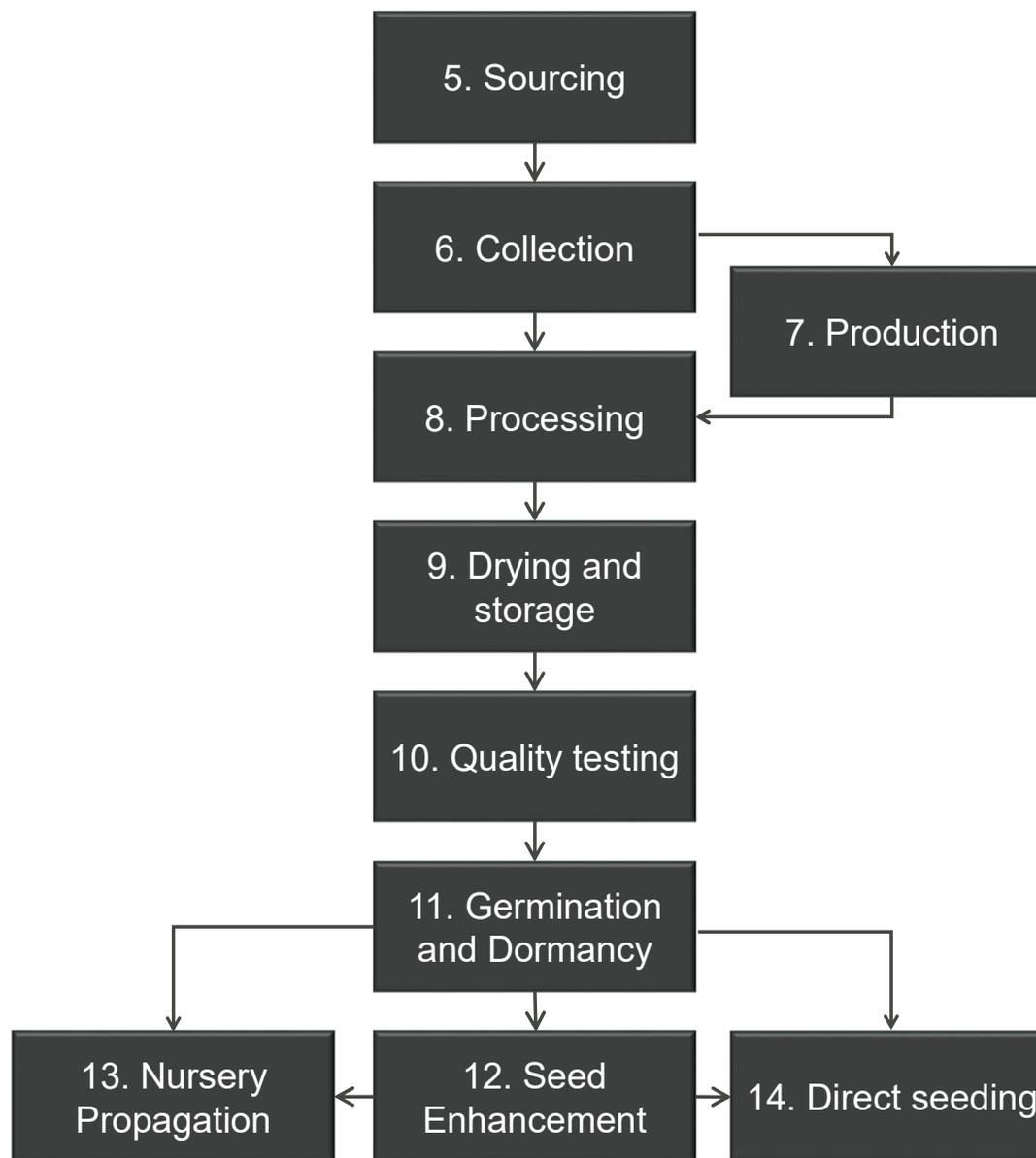
 Invited >120 reviewers, >50 reviewed at least 1 module

 Addressed reviews

 Proof reading

 Production

# STRUCTURE





1. Detailed restoration planning informs species selection for seed collection



5. Select seed source (local, non-local, mixed). Source seed from many well-spaced plants across a population to capture greater genetic diversity.

2. Obtain permission to collect from Indigenous managed lands. Consider partnerships.



6. Tips for collecting - when, how much, methods and equipment.



3. Obtain relevant licences for seed collection.



7. Seed production can help increase seed for restoration: benefits and downsides, sourcing founding material, design and growing systems.

4. Keep records of every part of the seed supply chain, and transfer records when seed changes hands.



8. How to process seeds to extract seeds, reduce bulk for storage and improve quality: Post-harvest drying, separating, extracting, cleaning, pre-storage drying





•9. Store seeds under dry conditions at a constant, cool temperature: storage conditions determine storage time



13. When and how to propagate tubestock.

•10. Test seed quality so you know can calculate seeding rates and you know you are using live seeds.



14. When and how to do direct seeding, what machinery to use.



11. How to test seed germination and tips on overcoming seed dormancy.



15. Top tips for seed purchases and calculating value for money.

12. Seed enhancement technologies include coating, priming, pelleting, acid digestion and flash flaming



# HEALTHY SEEDS PROJECT: ROADMAP SUMMARY

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

- Investigation to learn more about barriers and opportunities in NSW seed sector
- Provide recommendations to improve seed supply



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, and communicate research.



## 2. Licencing & Record Keeping

Ensure that licencing systems are more efficient, effective, useful and fit for purpose. Minimum standards for seed collection. Use record keeping systems and provide data to the buyer.



## 3. Project management

Restoration projects and funding models must incorporate the time required for seed sourcing, propagation (if needed), implementation and monitoring, and climate variability.



## 4. Restoration planning

Plan restoration and seed requirements regionally to forecast seed requirements. Develop vegetation guides for each region. Identify existing regional infrastructure (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.

# ANPC EVENTS AND PUBLICATIONS



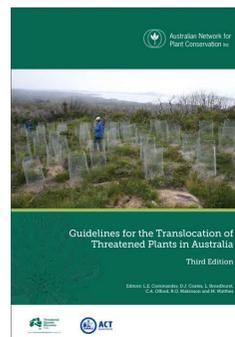
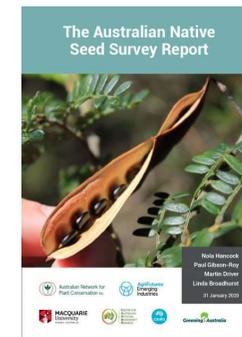
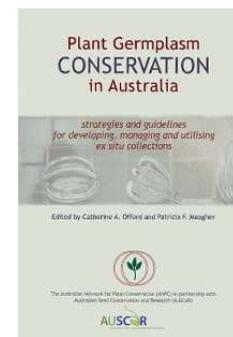
## ■ Events

- 9 Sept 2021, **Australian Academy of Science Fenner Conference on the Environment**, online
- March/April 2022, **Threatened Species Translocation Workshops**, Melbourne, Ballarat, Bairnsdale VIC
- 3-7 April 2022, **Australasian Plant Conservation Conference (APCC13)**, Albury NSW

## ■ Publications

- Australasian Plant Conservation
  - quarterly bulletin
- Plant Germplasm Conservation in Australia
  - 3<sup>rd</sup> edition to be launched in September
- The Australian Native Seed Survey Report
- Guidelines for Translocation of Threatened Species in Australia

■ [www.anpc.asn.au](http://www.anpc.asn.au)





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- Reviewers, FloraBank Reference Group and Healthy Seeds Consortium
- ANPC staff and committee
  - Jo Lynch, Christine Fernance, Amelia Martyn Yenson
- Please connect with ANPC
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