

Seed banks support botanical garden conservation programs by preserving seeds for future research, propagation and restoration. They give gardens a way to protect genetic diversity beyond the living plants growing on their grounds.

## Protecting diversity in storage

A garden may have room for only a limited number of plants from a species. A seed collection can hold material from many individuals and, where appropriate, several wild populations. This broader sample can preserve inherited variation that helps a species adapt to different conditions.

Seeds are collected under permits and other applicable rules, with care not to damage the source population. Records of where and when seeds were collected help staff understand what each collection represents. Good records also make it easier to select material for a particular research or restoration project.

Not every species can be conserved this way. Some seeds do not survive drying or conventional freezer storage, so gardens may need to maintain living plants or use other conservation methods.

## From collection to storage

Seed banking is more than placing a packet in a freezer. Gardens and their partners use a documented process to keep collections useful over time.

1. Plan a collection that represents the target population while leaving enough seed in the wild.
2. Collect mature seeds and record their source, date and habitat.
3. Clean the seeds, removing material that could take up space or encourage pests.

4. Dry and store suitable seeds under controlled conditions.
5. Test samples for germination and monitor them over time.

If tests show that viability is declining, staff may grow plants to produce fresh seed or make a new collection, subject to applicable rules and conservation plans.

## Supporting research and living collections

Banked seeds provide material for studying germination, dormancy and plant growth. These studies can reveal what a species needs to establish successfully, such as a period of cold or exposure to light.

Gardens can also use seeds to grow plants for conservation collections. Keeping records of the source and parentage helps staff manage those plants and avoid treating a few related individuals as a complete picture of the species.

## Helping restore wild populations

Seeds can support restoration when a habitat has been damaged or a population has become too small. Garden staff may grow plants from stored seed for a planned introduction or provide seed to conservation partners.

Using seed alone does not solve the cause of a decline. A project may also need to address habitat loss, invasive species or other threats. The source of the seed matters too: restoration teams consider local conditions, genetic diversity and guidance for the species before planting.

## Questions about seed banking

### Can all seeds be frozen?

No. Some species produce seeds that are damaged by drying or freezing and need different conservation approaches.

### How long do stored seeds last?

Longevity varies by species and storage conditions. Regular testing helps staff track whether seeds can still germinate.

### Do seed banks replace living collections?

No. Living plants and stored seeds serve different purposes and can support each other.

### Can gardens collect seeds anywhere?

No. Collection depends on permission, applicable law and a plan that protects the wild population.

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