



Pollen Banking: A critical tool for conserving plant species

Pollen banking expands our ability to conserve plant species in the face of habitat loss, climate change, and other threats to biodiversity. By building a collaborative network of partners, we can ensure the availability of pollen for enhancing genetic diversity and ecological restoration—and support the recovery of plant species and ecosystems around the world.





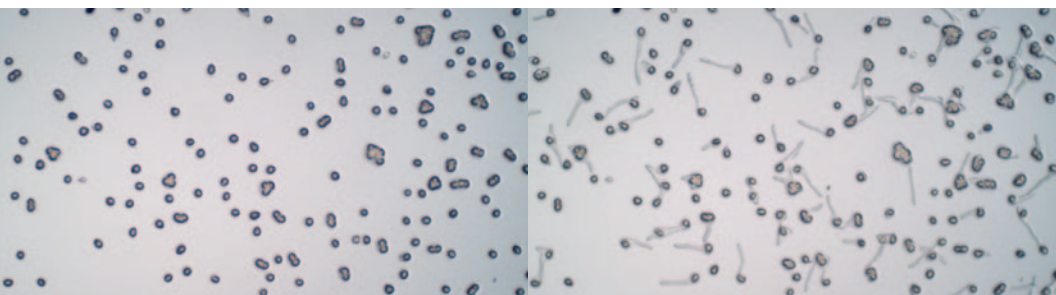
Pollen Banking

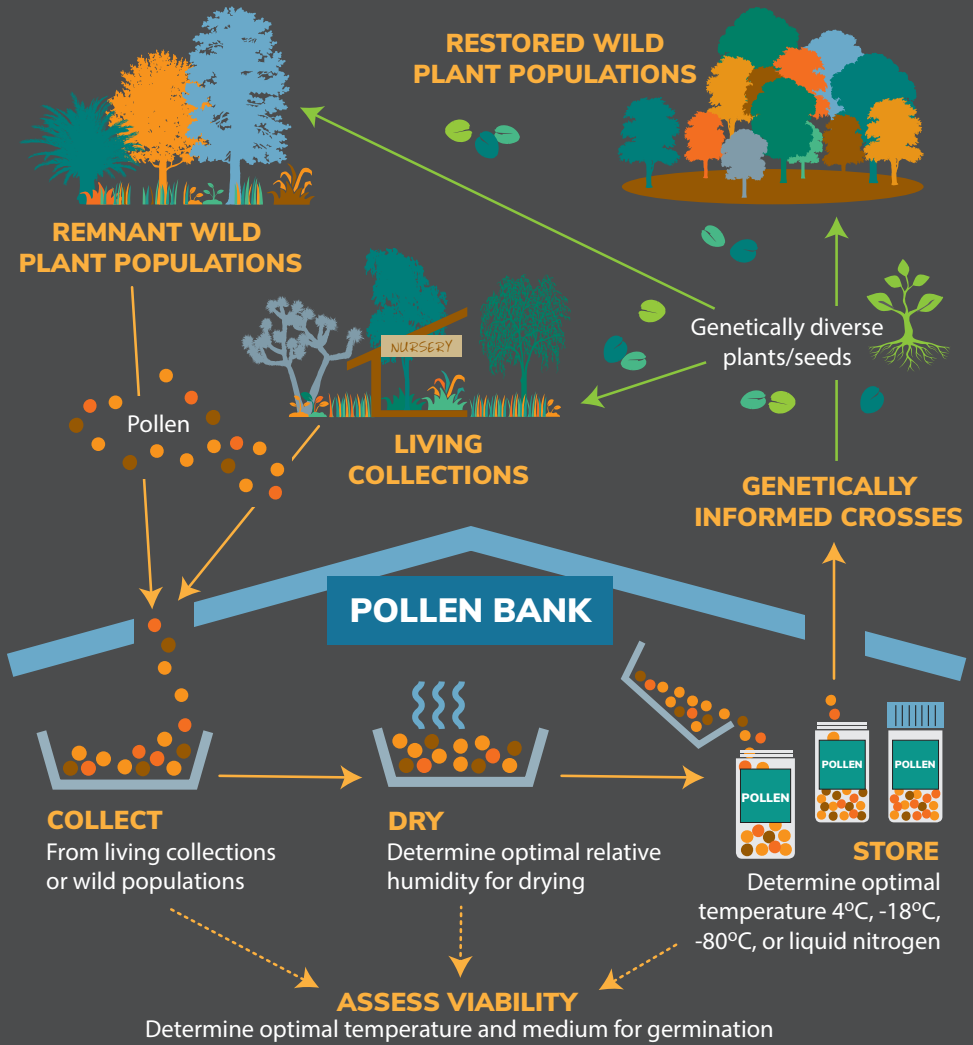
Pollen banking can help overcome limitations of common *ex situ* conservation strategies, offering additional ways to enhance genetic diversity and facilitate informed breeding programs. Most botanic gardens and other research institutions that conserve plant species *ex situ* do so mainly through seed banks and living plant collections—but this combination of strategies is not suitable for all species.

Some plant species don't produce enough seed for effective banking, while some species (i.e., exceptional species) produce seed that cannot be stored long-term in seed bank conditions. Storing seed from certain exceptional species is possible, but requires extensive handling and specialized treatments. With living plant collections, space and resource constraints restrict the number of individuals an institution can maintain, limiting genetic diversity.

Collecting and storing pollen is a less expensive long-term conservation strategy than maintaining living plant collections, and pollen banking can expand the number of species supported by informed breeding programs across space and time (e.g., generation time, dioecy, distance, floral phenology).

Pollen banking can improve plant conservation globally, but only if scaled across a collaborative network of partners. By sharing pollen and expertise, botanic gardens and other research institutions can advance the understanding of pollen, its storage, and pollination to support assisted reproduction and reintroduction of threatened species.





Top far left: *Amorphophallus koratensis* male and female flowers during pollen release. (Jeremy Foster)
 Top left: *Encephalartos trispinosus* pollen (Jeremy Foster)

Bottom far left: *Pritchardia minor* (Arecaceae) immediately after sowing.
 Bottom left: *Pritchardia minor* (Arecaceae) after incubation at 25°C for three hours. (Cecily Eltringham, Dustin Wolkis, Alina Wood)

Right: Collecting pollen from an *Amorphophallus maximus*. (Robin Carlson)



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Front cover images:

Top: *Amorphophallus laoticus* pollen being released by male flowers. (Jeremy Foster)
Bottom: Collecting *Paphiopedilum victoria-regina* pollinia. (Robin Carlson)

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For a list of papers related to pollen banking and materials needed for pollen banking, please scan this QR code or go to linktr.ee/pollenbank



Collecting pollen from *Quercus ilex*. (Daniel Ballesteros)

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