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News from the Australian Seed Bank Partnership

Outcomes of our Critically Endangered Project

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Australia is home to some of the world's most extraordinary and often vulnerable plant species. With increasing threats from habitat loss, climate change, and invasive species, urgent action is needed to conserve those teetering on the edge of extinction. From 2022 to 2024, the Australian Seed Bank Partnership (ASBP) led the Critically Endangered Project, a targeted effort to collect and support recovery of some of Australia's most at-risk flora.

The Project

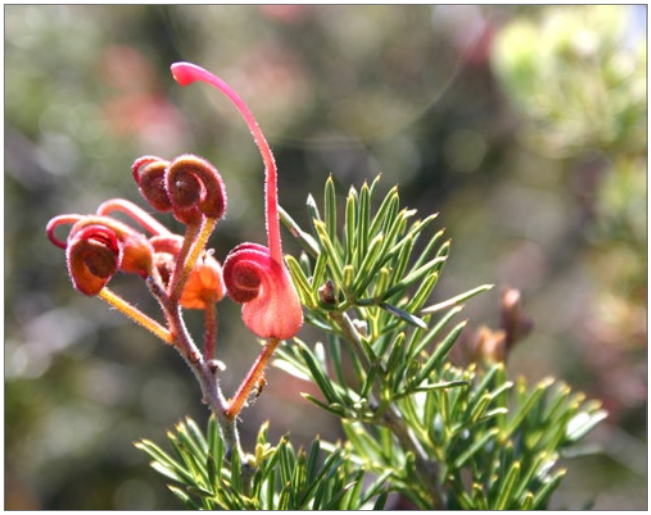
Key partners included the Tasmanian Seed Conservation Centre, and both the Kings Park and Kensington branches of the Western Australian Seed Centre. Together, we designed a project to secure seed collections and initiate recovery efforts for 10 Critically Endangered plants (under either national or state legislation) across Western Australia and Tasmania. Each partner began with pre-collection field surveys to locate target species, assess population health, and determine optimal collection timing. Collections were prioritised for previously unbanked species, and to improve the genetic representation of existing accessions. Once seed was secured, teams developed germination protocols and applied recovery techniques such as establishing seed production areas and translocations.

Project highlights

A standout success came from the Tasmanian Seed Conservation Centre, where scientists trialled new orchid germination media using alternative cereals as carbon sources for mycorrhizal fungi. Replacing traditional oatmeal with quinoa flakes, brown rice, and polenta, the team developed highly effective protocols for the Golfers leek orchid (*Paraprasophyllum incorrectum*) and six other species. Seedlings reached the green leaf stage in just six weeks—a first for the Centre—with many advancing to dropper initiation by week twelve, greatly improving their chances of survival for future replanting.

Another major success was delivered by the Western Australian Seed Centre, Kensington. They enhanced a long-running translocation of *Grevillea batrachioides*, a species with fewer than 20 individuals remaining in the wild. Following seed collection and propagation, 61 nursery-grown seedlings were planted in 2024, boosting the translocated population's long-term viability and genetic resilience.

Alternate germination media was trailled on *Paraprasophyllum crebiflorum*. Photo: Magali Wright



***Grevillea batrachioides* in flower. Photo: Andrew Crawford**

Outcomes

Over two years, the project achieved outcomes well beyond its original scope. In total, the project supported conservation actions for 22 listed species, including 16 Critically Endangered taxa (see Table 1). Key achievements included:

- 92 seed collections made for 15 Critically Endangered species, plus six other listed taxa.
- 20 germination trials completed, establishing protocols for 12 Critically Endangered species.
- 11 recovery actions, including translocations and seed production areas, for 10 Critically Endangered plants.

Importantly, the project also leveraged over $132,000 in in-kind support from Australian partners, maximising the impact of project funding. For more information about this project visit seedpartnership.org.au

Acknowledgements

The ASBP sincerely thanks the Royal Botanic Gardens, Kew for its financial support of the project and enduring commitment to international plant conservation through the Millennium Seed Bank Partnership (MSBP). As the MSBP celebrates its 25th anniversary, the Critically Endangered Project stands as a powerful example of how global collaboration, local expertise, and seed banking science can work together to secure the future of Australia's unique and irreplaceable flora. We also warmly acknowledge our project partners for their scientific expertise, field experience, and unwavering dedication, without which this project would not have been possible.

Table 1: Outcomes of the Critically Endangered Project by taxa. State or federally listed Critically Endangered taxa are shown in green.

Taxa	National status	State status	Germplasm collection	Germination trial	Recovery action
Caladenia anthracina	CE	EN	✓		
Eucalyptus morrisbyi	CE	EN	✓		
Paraprasophyllum incorrectum	CE	EN	✓	✓	Translocation
Paraprasophyllum limnetes	CE	EN	✓	✓	
Paraprasophyllum milfordense	CE	EN	✓		
Paraprasophyllum olidum	CE	EN	✓	✓	Seed Production Area
Pterostylis commutata	CE	EN	✓		
Pterostylis wapstrarum	CE	EN	✓	✓	
Caladenia elegans	EN	CE	✓	✓	Seed Production Area
Caladenia viridescens	EN	CE	✓	✓	Seed Production Area + living collection
Daviesia euphorbioides	EN	CE	✓	✓	Translocation
Grevillea batrachioides	EN	CE	✓	✓	Translocation
Grevillea dryandroides subsp. *dryandroides*	EN	CE	✓	✓	Translocation
Grevillea humifusa	EN	CE	✓	✓	Translocation
Pterostylis sinuata	EN	CE	✓	✓	Seed Production Area
Verticordia plumosa var. *ananeotes*	EN	CE		✓	Translocation
Caladenia dienema	EN	EN	✓		
Paraprasophyllum crebiflorum	EN	EN	✓	✓	Seed Production Area
Paraprasophyllum tunbridgense	EN	EN	✓	✓	
Pterostylis rubenachii	EN	EN	✓	✓	
Pterostylis ziegeleri	VU	VU	✓		
Xerochrysum palustre	VU	VU	✓		
Total	**22 taxa** (16 CE + 6 listed)		**21 taxa** (15 CE + 6 listed)	**15 taxa** (12 CE + 3 listed)	**11 taxa** (10 CE + 1 listed)