

Saving the Western Australian flora

Conserving genetic diversity under the international Millennium Seed Bank Project partnership 2001-2009



Jacksonia pungens

Achievements

1690 collections made

1306 species collected

1192 collections duplicated

1050 species new to MSB

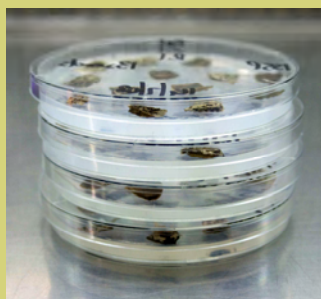
62 families (58 duplicated)

227 genera (200 duplicated)

1354 taxa (1143 duplicated)



Samples have been cleaned and quantified before storage



More than 600 seed samples have been germinated

Global Targets

The collection and safe keeping of seeds has been the key focus of an international partnership, the Millennium Seed Bank (MSB) Project, between the Royal Botanic Gardens Kew, United Kingdom and countries worldwide. The target of this seed conservation project have been to collect and bank 10 per cent of the world's dry land flora species by the year 2010.

The Western Australian Department of Environment and Conservation joined this partnership in 2001 under an Access and Benefit Sharing Agreement. The Department's Threatened Flora Seed Centre (TFSC), the seed bank responsible for

safe storage of the State's rare, threatened and poorly known flora, has now contributed more than 14 million seeds towards achieving these international targets.



Daviesia chapmannii

The Centre has dispatched 38 seed consignments over nine years and has reached its primary goal of sending to the UK seed collections of 1050 species new to the



project. These seeds are duplicate samples of collections already held in safe keeping at the Threatened Flora Seed Centre in Perth and are sent to the underground vaults of the Millennium Seed Bank as a risk management strategy.

Collections focussed on the internationally renowned and floristically rich South West of Western Australia where threats to the survival of plant species include the deadly dieback disease, *Phytophthora cinnamomi*, habitat fragmentation and climate change. Individual collections have ranged in size from a few precious seeds of the most threatened species to well over a million seeds.

Threatened species

More than two-thirds of the collections are from conservation-listed species; samples from over 60 per cent of the State's extant Declared Rare Flora are now safely stored both in the UK and in WA. These seeds are a valuable genetic resource for the future. Already samples from more than 20 of these collections have contributed to the recovery

of species at risk of extinction in their native habitat in WA.

Also held in storage are samples from 25 per cent of the poorly known or priority conservation flora of WA along with more commonly occurring endemic species, mostly associated with the State's Threatened Ecological Communities.

Threatened species

- 68 CR Endangered (58 duplicated)
- 60 Endangered (56 duplicated)
- 67 Vulnerable (61 duplicated)
- 617 Poorly Known (610 duplicated)



Other Benefits

The activities of seed collection, including gathering herbarium specimens and documenting plant health and ecological data, have contributed to the location of new populations and geographic range extensions. They have also assisted in the clarification of taxonomic and conservation status for a number of threatened species.

Germination tests on stored samples provide important information on the viability of the seeds, increasing our understanding of how to turn seeds into plants for species recovery.



Conserving seeds helps conserve plant genetic diversity.



Herbarium specimens that vouch for the identity of the collections are lodged with the State Herbarium in Perth; duplicates are sent to Kew.

Partnership Support

The MSB partnership has provided WA staff with a number of training and research visits to the UK and has supported a PhD project on seed longevity, in addition to other seed research that supports the collections. This partnership has not only supported the collection of seeds, but also galvanised National and State government support for seed banking and seed research, including the construction of a large, modern seed banking facility within the new State Biodiversity Conservation Science Centre due for completion mid 2010. In addition, involvement in the project has raised the public profile of seed conservation and helped raise awareness of flora conservation issues.



Seeds are nature's genetic storehouse and the basis of life on earth. They can be used to support the recovery of threatened species in the wild.



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DEC's Threatened Flora Seed Centre collects, conserves and utilises seeds to support wild plant survival. The Centre acknowledges the contribution of current and past seed collectors and curators, as well as community volunteers and Department of Environment and Conservation District and Regional staff who have helped to ensure the success of this project.

DEC thanks the Royal Botanic Gardens, Kew for their support for seed conservation in Western Australia through the Millennium Seed Bank Project partnership, in addition to the contribution of Australian Government funding received through the Western Australian State Natural Resource Management groups.

It is our collective responsibility to ensure the protection and recovery of Western Australia's native flora so that future generations can inherit and benefit from its rich natural plant diversity.



Australian Government

