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Threatened Flora Seed Centre

Opportunities - our challenging future

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

We are seeking support to carry out our vision for *Coordinated Plant Recovery* for the flora of WA and to provide long-term opportunities for conservation outcomes through sustainable seed collection and use.

For more information

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The Department of Environment and Conservation manages lands and waters in Western Australia for the conservation of biodiversity at ecosystem, species and genetic levels, including management for the renewable resources they provide, and for the recreation and visitor services they can sustainably support.



Coordinated Plant Recovery:

A vision for seed conservation and use in Western Australia



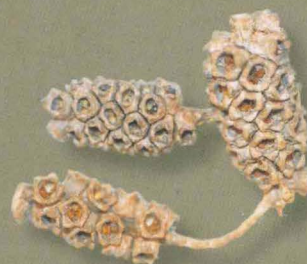
Department of
Environment and Conservation
Our environment, our future



Our vision for the future

Our vision is that *Coordinated Plant Recovery* will provide a focused and integrated package that supports seed conservation and recovery through botanical survey, seed science research, seed collection and storage, and flora reintroduction.

- We will expand and strengthen our current seed conservation program to include 90 per cent of WA's threatened flora and 50 per cent of its poorly known plant species.
- We will increase the size and genetic diversity of our existing collections so they are adequate for the task of species reintroductions.
- We will expand and strengthen our existing program of species reintroductions to reduce the threat status of the flora.
- We will use our knowledge to prioritise and confirm the conservation status of listed flora and we will support on-ground actions through seed science research and flora reintroductions.
- Our skills will ensure that best practice in seed conservation and recovery is used for a better conservation outcome.
- We will use technical services and education to build the capacity for local and regional groups to inspire and raise awareness of seed conservation issues.





Western Australia's unique plant diversity at risk



Western Australia is one of the world's most biologically diverse regions, encompassing tall forests, woodlands, species-rich heathlands, rainforests, deserts and sub-alpine ecosystems over 2.5 million square kilometres.

The south-west corner of WA is one of 34 internationally recognised terrestrial hotspots for biodiversity and the only one recognised in Australia. Almost one quarter of WA's 13,000 vascular flora is rare, threatened or poorly known and at risk of extinction in the coming decades. The majority of these plants are unique and not found anywhere else in the world.

Climate change

At the wet end of a dry continent, the south-west faces a dangerous future. A warming climate and reduced rainfall will increase drought and fire events, may cause geographic range shifts and will result in plant decline or extinction.

Phytophthora dieback disease

An introduced pathogen that has been likened to a 'biological bulldozer' *Phytophthora cinnamomi* is threatening the rich diversity of plant life in the south-west. Forty per cent of the flora is considered to be susceptible. There is no known cure.

Habitat degradation

Land clearing since European settlement has resulted in native habitat fragmentation and degradation. Fragmented landscapes contribute to plant decline through loss of pollinators and reduced production of seeds. Clearing of the naturally saline landscape has caused salt and groundwater to rise to the surface triggering plant decline. Competition from introduced plants and grazing by feral animals can cause decline and extinction of many plants and further degrades natural ecosystems.

Seed conservation and use

Plants are an essential component of ecosystems and an important resource for human survival.

Protecting natural vegetation supports plant life as well as the habitat and food sources for most terrestrial animal and insect species.

Seeds are nature's genetic storehouse and are a ready source of plant material for use in restoring degraded lands, reintroducing species into the wild and restocking depleted populations. Seeds can also be used in research that supports wild populations.

Conserving seeds off-site is a means of saving vital natural resources for the future. It is a complementary approach to on-ground actions and a cost-effective and efficient way to conserve genetic diversity. Good quality collections with a broad genetic base are required to reinforce and benefit species survival.

Conserving ecosystems in a changing environment will be a challenge in the face of climate change and the prospect of mass extinction of biodiversity. Where habitats are in immediate danger of destruction, and where on-ground actions cannot guarantee species survival, the collection and maintenance of plant material from the wild becomes necessary, acting as insurance. Under some scenarios, seed conservation is the only realistic tool for saving some of our threatened species.



Achievements

The Department of Environment and Conservation (DEC) has made a major investment towards the long-term future of plant diversity in WA through seed conservation.

Initiatives and achievements include:

- Collection and conservation of more than 2,850 samples of seed from more than 1,380 Western Australian plants. The majority of collections are from plants restricted to WA and more than 930 are rare, threatened or poorly known and at risk of extinction in the wild.
- Seeds have been used in 33 threatened flora reintroductions carried out by departmental staff.
- Achievement of Target 8 of the Global Strategy for Plant Conservation (GSPC) for 2010 (60 per cent of threatened flora in accessible *ex situ* collections, preferably in the country of origin, and 10 per cent of these collections used in recovery). DEC now holds seeds of 70 per cent of the threatened flora of WA in conservation, with 13 per cent of this flora reintroduced into the wild.
- Laboratory research into dormancy, germination, storage and longevity that supports the collections.
- Ecological field investigations that provide valuable information for species survival.
- Detailed experiments on temperature thresholds for germination to identify species at risk from climate warming.
- Publications and awareness raising to build capacity and highlight seed conservation issues.
- Foundation member of the Australian Seed Conservation and Research (AuSCaR) network which aims to conserve native seeds Australia-wide.

In 2001 DEC entered into a global seed partnership with the United Kingdom's Royal Botanic Gardens Kew Millennium Seed Bank Project, an ambitious project aimed at conserving 10 per cent of the world's flora in seed collections by 2010 as part of the targets of the GSPC. More than 50 per cent of the flora DEC stores in-country has been duplicated for safe keeping in the underground vaults at Kew. In addition to generous support for staff and equipment, DEC has gained capacity through technology transfer and training.

The Western Australian Government, through its *Saving Our Species* initiative, has provided funding for species reintroduction. The Commonwealth Government has supported DEC's endeavours through the State Natural Resource Management groups and other programs.

