

# Seeds for Life Project launched

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Queensland native seed science and seed-related revegetation and conservation efforts are set to surge ahead as a result of the Seeds for Life Project—this state's contribution to a major international seed conservation program, the Millennium Seed Bank Project (MSBP).

Initiated and managed by the Royal Botanic Gardens Kew, in the UK, the MSBP aims to collect and store the seeds of 10% of the world's flora (24 000 species) from wild populations by 2010. Associated research will investigate aspects of seed biology that will enable a greater range of species to be more efficiently harvested, processed, stored, and germinated for a variety of conservation, revegetation and commercial end-uses.

The Royal Botanic Gardens will provide about \$1.5 million for the Seeds for Life Project to collect and preserve Queensland seeds—only a limited number of Queensland's species have been included in



Greening Australia Queensland CEO Pam Usher, Griffith University Plant Biotechnology and Conservation Group's Dr Sarah Ashmore, Premier Peter Beattie, ACMER Executive Director Clive Bell, and Dr Julia Playford, Director of Wildlife Ecology, Queensland Environmental Protection Agency, at the official signing of the agreement

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scientific collections, and even fewer have been studied sufficiently to store and germinate them effectively.

Seeds for Life received the state government's official involvement in July, when Premier Peter Beattie signed a major agreement for the government to join the consortium of Queensland research, non-government organisations, and government bodies collectively called the QSeed Partnership, which will coordinate Seeds for Life.

Greening Australia Queensland is a member of the QSeed group, along with the Queensland Environmental Protection Agency, the Australian Centre for Mining Environmental Research, The University of Queensland, Griffith University, and Brisbane Botanic Gardens.

Over six years, the Seeds for Life program will collect seeds, herbarium specimens, and other associated information from 1000 Queensland plant species. These seeds will be stored as duplicate collections, and used in research undertaken both in Queensland and the United Kingdom.

## Why collecting & studying seed is important

Understanding seed biology can help improve revegetation techniques.

A significant number of important indigenous species have seed characteristics that can currently exclude them from revegetation projects or limit their use. Some important questions are largely unanswered for many of these species:

- What are the best conditions for germination?
- What factors affect storage life?
- What are the mechanisms of seed dormancy and how can dormancy be broken?
- Why is seed viability so short for some species and how can we increase this?

Answering these and other seed biology questions will enable a more complete range of species to be reliably established in revegetation projects for mine site rehabilitation and restoration, and for use in horticulture, floriculture, or forestry.

## Did you know?

Nearly 23 per cent of Australia's plants are listed as threatened, most of them in Western Australia and Queensland.

Of about 5000 Australian plants listed in 1995 as rare or threatened, 1368 are in Queensland which has an estimated 7800 native flowering plants.

## What is a genebank?

A genebank is a place where seeds are stored over long periods. The idea is to create a gene bank, not a gene morgue—a place where the seeds can be kept alive and in good condition, to allow ongoing use and reasearch.

Genebanks are also called *ex-situ* ('not in the original place' or 'off site') conservation. Storing seed in genebanks is complimentary to on-site, ecosystem approaches to conservation, especially of rare and threatened species that have only limited natural populations. These seed collections can help reestablish

lost natural populations or rescue those under threat, and provide germ plasm (undifferentiated cells) for use in biodiscovery or plant improvement programs.



Inside the international seedbank at the Royal Botanic Gardens in Kew, England.