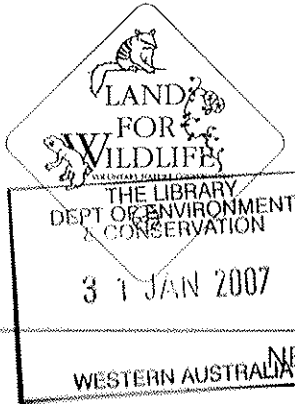


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BOTANICAL COLLECTING IN WESTERN AUSTRALIA

Luke WESTERN AUSTRALIA

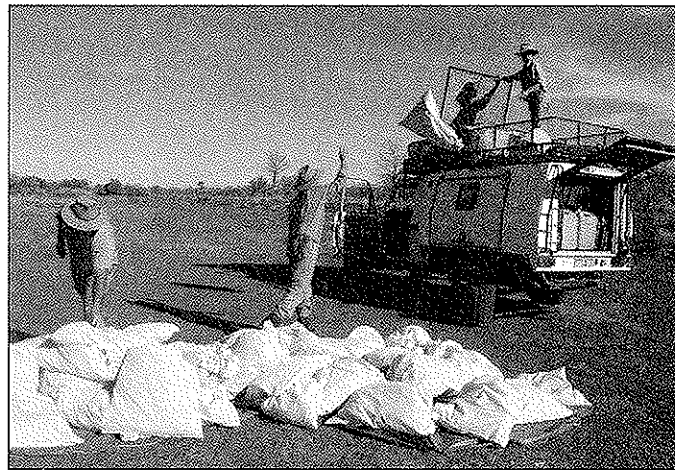
Kings Park is one of the few Botanic Gardens in the world that collects and displays its own flora. The display is primarily in the State's Botanic Garden. The display of the State's flora and a large area of wild bush as the setting for the Botanic Gardens in the middle of a major city is unique.

The primary role of the Curator of the Western Australian Seed Technology Centre at Kings Park and Botanic Garden (KPBG) is to collect seed and cutting material for the State's Botanic Garden. Fred Lullfitz was the first government appointed seed collector in 1965 and his job was to begin collections for the new Botanic Gardens that were to take shape in Kings Park. Herbert Demarz, who held the position from 1970 to 1990, followed Fred. I have held the position since then.

Today collections are made for display purposes and, increasingly, for conservation collections of rare and common species from the most threatened plant communities of the State for their long-term storage and thus hopefully, their ongoing survival. These collections should ensure that KPBG has as many species from the State's flora stored securely to preclude the chance of a species being lost. Collections of seeds are not a replacement for the loss of biodiversity in the wild but should ensure that we retain the genetic material of these species for reintroduction and research. Plant breeding programs are also a focus area for the Seed Technology

Centre. Plant breeding programs aim to develop varieties from wild material that can be grown successfully in home gardens.

The early days of collecting were carried out using a 4-wheel drive and a caravan. Herbert Demarz and John Beard (the inaugural Director of KPBG) traveled huge distances throughout the state, recording and collecting the WA flora. In those days traveling was done without air conditioning, fridges, Global Positioning Systems or satellite phones and the road system was much less developed. Locations were measured from each milepost on the highway so that the spot could be returned to and this worked reasonably well until the roads changed through maintenance.



Seeds destined for the State's Botanic Garden at Kings Park and the Millennium Seedbank. Kew.

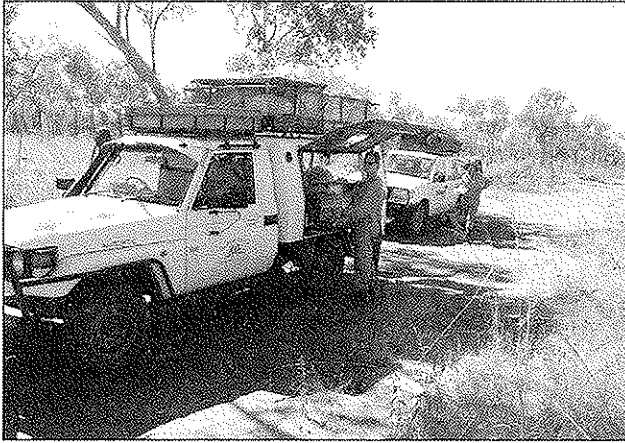
Today seeds are targeted in many ways. To determine target areas and to find species, decisions are based on weather trends for the year and evaluated through the Bureau of Meteorology websites. Satellite navigation technology is used to locate latitude and longitude and a touch screen computer monitor mounted in the vehicle displays a moving map. This computer contains all topographic and land tenure information as well as locations for particular species from the Department of Environment and Conservation's (DEC) Herbarium recording system, Florabase. Today we use the latest in 4-wheel drive technology and a caravan is still used where appropriate as well as tents and a significant

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Seed collecting

amount of remote and exploratory trips are made to new locations. Approximately 2 to 3 months a year are spent on field trips.



The field collecting vehicle

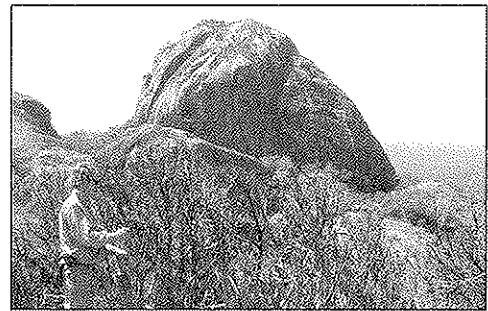
Originally seeds were stored in glass jars in the seed store. As material was required for display it was propagated and then grown on. Today seeds are stored in freezers at minus 20 degrees Celsius after being dried down to a low moisture content using a controlled environment room. Freezing seeds has meant that those species with a short shelf life do not need to be recollected every few years and according to the latest scientific information, they should last many decades or even centuries. Storing seeds is the cheapest and easiest way of keeping most plant species secure from habitat loss and possible extinction.

For the last 5 years KPBG together with DEC have been involved in the Millennium Seedbank Project (MSB). WA was the first state to become involved in this project and now all Australian states are involved. The MSB Project has targeted 10% of the world's flora to be stored by 2010. These seeds are from threatened temperate communities from throughout the world. Threats include land clearing, desertification and in the case of the WA wheatbelt, salinity and clearing. This partnership has resulted in large numbers of duplicated collections being secured for conservation in WA and at the Millennium Seedbank, Kew, UK.

Another collecting activity that KPBG are involved in is the Kings Park Expeditions. These trips take paying volunteers to some of the most remote and interesting areas of the state to help with our fieldwork program. They provide an opportunity for people to take part in a true botanical collecting trip. Some of the areas we have taken people to include the Canning Stock Route and the Great Victoria Desert. On one occasion a sand storm with cyclonic winds hit one of

the trips in the Great Victoria Desert and we watched helplessly as the tents were flattened and driving sand had the camp in complete mayhem for 2 hours. There have been many interesting and exciting events take place on these trips and there has only been one accident requiring emergency evacuation. The experiences on over 8 major expeditions have ensured that we keep a balance between safety and engaging with the wild environment.

In spite of the original boundaries of collecting being the geographical borders of WA, the Seed Technology Centre has also been involved in several field trips in Africa. Through the MSB project, staff have worked in Kenya running training programs with the local collectors. Another project staff were involved in was developing and implementing protocols for the collection, cleaning and storage of seeds at the Geita goldmine, beside Lake Victoria in Tanzania. Collecting in areas with a much larger variety of wild animals was an added challenge for staff!



Collecting aloes in Kenya

Seeds today are even more important than ever as we realize how urgent it has become to ensure that no species are lost from this state and indeed the world. KPBG are committed to ensuring that WA species are stored for the lasting benefit of all Australians.

This year saw several exciting events take place, firstly the launch of the book "Australian Seeds" edited by Luke Sweedman and David Merritt (see page 18). Also the discovery of a new species of *Eucalyptus* from the south coast made by Steve Hopper and Luke Sweedman is to be known as *Eucalyptus sweedmaniana*.

Next year Kings Park Expeditions travel from Perth to Alice Springs via the Gunbarrel Highway. For information contact me at lsweedman@bgpa.wa.gov.au or phone Kings Park on 94803625

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