E·U·C·A·L·Y·P·T

E·M·I·G·R·A·N·T·S

Until the 1970s, seed from Goldfields eucalypts enjoyed a warm welcome in arid climes throughout the world.

IAN KEALLEY

unearthed the story of how they were collected and exported.

THE baked land around Kalgoorlie is dampened each year by a mere 250 mm of rainfall - not much more than a few thimblefuls of moisture. Yet 65 endemic eucalypt species survive there, clinging to the arid landscape in a range of landforms and habitats. Nowhere else in the world do woodlands exist in such low rainfall.

A marked lack of thirst is not the only characteristic that endears Goldfields eucalypts to the inhabitants of arid countries. The trees are used for ornamental planting, timber production, rehabilitation and reafforestation. This range of qualities generated national as well as international demand for Goldfields seed.

It certainly helps to explain the enthusiasm with which certain dry countries received seed from Goldfields

eucalypts for more than thirty years after the Second World War. These genetically diverse species produced hundreds of kilograms of seed, exported to grow into millions of trees which are now thriving in the low rainfall areas of other countries. The seed made a success of afforestation projects in countries like Portugal, Morocco, Israel, South Africa, Pakistan and Argentina.

Those plantings have continued to prosper over the years. In some places, the local people even think the eucalypts are native to their own lands. Such is the trees' success that their adopted countries can grow and collect their own seed, and there is no longer a large overseas demand for the original Goldfields stock. Seed is still collected around Kalgoorlie, and some still goes overseas for afforestation projects, but the quantities are much smaller.

AS OLD AS FORESTRY

Collecting seed is as old as forestry itself. Forestry staff of the Department of Conservation and Land Management (CALM) consider it to be just part of the job, and until recently most were unaware of the history of seed collection in the Goldfields and of the seed's final destination.

It took an unusual request from the Premier's office in May 1989 for staff at CALM's Kalgoorlie office to become aware of this history. The Premier was to give a speech in Israel marking the anniversary of a major reafforestation exercise using many Australian eucalypts, mainly species from the Goldfields, and needed details to prepare the speech. CALM officers began delving into the old Forests Department archives to find out how much seed of what species was collected by the Forests Department in Kalgoorlie from 1950 to 1970, for export to Israel, Morocco and other countries.

Archives in Kalgoorlie show that by 1930 there was increasing interest in the eucalypts of the arid interior, promoted by the Forests Department and the Forests and Timber Bureau in Canberra. In the 1940s a forestry nursery was established in Kalgoorlie. After the war, between 1945 and 1957, the Forests Department exported a remarkable 112 kg of bulk seed and 1205 packets of seed from 80 eucalypt species to 48 countries. During this time, seed collection requirements

Photo - previous page.
Lemon-flowered gum (*Eucalyptus woodwardii*). A widely planted ornamental with a restricted natural range near Karonie (140km east of Kalgoorlie).
Photo - Jiri Lochman

The spectacular coral gum (*Eucalyptus torquata*), which occurs on hills from Coolgardie to Norseman.
Photo - Kerry Cook ▲▲

Seed extracted and sieved from rib-fruited mallee (*Eucalyptus corrugata*), collected near Koolyanobbing.
Photo - Ian Kealley ◄

Gimlet (*Eucalyptus salubris*) woodland with saltbush (*Atriplex* sp.) understorey near Lake Cowan, south of Kambalda.
Photo - Ian Kealley ◄

Early clearfelling on the Goldfields woodlines providing fuel and mining timber to Kalgoorlie-Boulder.
Photo - courtesy Battye Library ▼▼

were steadily increasing. From 1950 to 1968, the Kalgoorlie office supplied a huge 725 kg of seed, most of which filled orders from the Forests Research Station at Rabat in Morocco.

The United Nations Food and Agricultural Organisation (UNFAO) conducted a forestry tour through the Goldfields in 1953 which resulted in a large increase in demand for seed from Mediterranean countries. In some years, up to 20 kg of seed from one species was supplied. Supply peaked in 1956 with 76 kg collected, and again in 1967 when 59 kg was collected. Collection slowed in the 1970s, and it was only in 1983 and 1984, when foresters collected 56 kg to satisfy seed store orders, that it rose again.

GATHERING STOCK

Today CALM Goldfields staff still collect seed to satisfy orders received at the Department's seed store. They also ensure that commercial collectors are operating correctly. Seed is collected as the opportunity arises, whenever there are sufficient quantities of ripe capsules. Capsules are removed or pruned from branches in a way that minimises damage to parent trees, and are then spread onto calico sheets to dry.

When the capsules have opened, seed is separated by shaking and sieving. The seed is then stored under controlled conditions in the seed store. Once it has been tested to determine the number of live seeds per gram, the seed is sold - to be used in nurseries, or in direct seeding for reafforestation and rehabilitation throughout the world.

SEEDS LIKE DUST

As eucalypts have fine seed - yielding up to 1000 seeds per gram - collecting was not an easy task. Seed had to be extracted from capsules collected from trees by hand - some from firewood cutting areas, others from trees deemed suitable that were subsequently felled or pruned.

The seed within each capsule is like dust, so to get half a kilogram of seed was quite an effort. Foresters used to try to get as much seed as possible from areas where the timber cutters were operating, so as not to destroy standing trees in the bush.

There was a particularly high demand for seed from species such as salmon gum (*Eucalyptus salmonophloia*), Dundas mahogany (*E. brockwayii*) and coral gum (*E. torquata*). Of these, Dundas mahogany, a beautiful quick-growing tree with excellent timber, which is restricted to an area within a 25-kilometre radius of Norseman, was the most popular. Other species high in demand included gimlet (*E. salubris*), Strickland's gum (*E. stricklandii*), and to a lesser extent Dundas blackbutt (*E. dundasii*), merrit (*E. flocktoniae*) and lemon-flowered gum (*E. woodwardii*).

One of the people involved in the original project, retired forester Bill Brennan, has seen the success of the Goldfields eucalypt seed at first hand. Bill began his career as an assistant forester in Kalgoorlie in 1949, and handled much of the seed before the beginning of its journey. He, and sometimes another worker, would go out collecting seed in the bush, often combining this work with inspections of timber-cutting operations. While recently travelling on holiday overseas, Bill Brennan was able to observe the results of the program: the mature eucalypt trees grown on foreign soil from WA seed. When he visited Morocco, for example, he saw plantings of Dundas mahogany that have grown well and were a feature in the catchment areas of dams.

"The plantings overseas were very successful," he said. "I've been through Spain, Portugal and Italy, and our trees are all over the place. In Spain, river red gum (*E. camaldulensis*) is so widely planted that the locals believe that it's a Spanish tree."

No emigration project can be more successful than that. ⊡

Ian Kealley, CALM Goldfields Regional Manager, has a strong interest in eucalypts of the WA interior. He can be contacted at Kalgoorlie on (090) 212 677.

In the central Kimberley, a screw-pine-surrounded creek - just one of the threatened areas in this fragile frontier. Turn to page 22.

Until 1984 more was known about what was underneath the Nullarbor than what was on top. But with such a vast area to study, where do we start? See page 16.

LANDSCOPE

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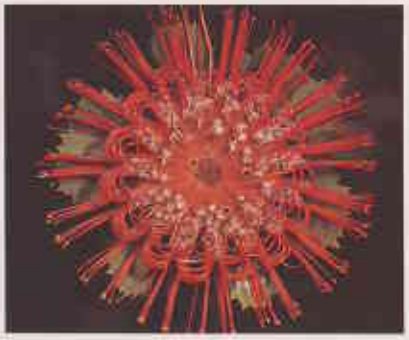

Public awareness and involvement is vital in the conservation of WA's rare and endangered flora. Page 49.

Ten WA mammal species have become extinct in the last 200 years. What can be done to ensure no more are lost forever? Page 28.

Forests protect our environment. They also provide timber. How do we strike a balance? Turn to page 35.

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COVER

Dolphins and whales are perhaps the best-known inhabitants of Western Australia's coastal waters. But this unique area is also home to an astonishing range of marine flora and fauna, from sea-turtles and coral reefs in the north to sea-grass banks and great white sharks in the south. See page 10.

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