

Les mauvaises herbes redeviennent sauvages dans le jardin botanique

Malas hierbas vuelvan al estado silvestre en el jardín botánico

# Weeds go wild in the Botanic Garden

One of the greatest threats to the Australian environment since Europeans arrived over 200 years ago has been the invasion of the native bush by introduced plants from other countries. During this period even some of our own native species have become problems by naturalizing far beyond their normal habitat. In the state of South Australia alone, the number of introduced species is 40 percent of the number of native species and rising.

This problem was recently highlighted when the Botanic Gardens of Adelaide hosted an exhibition of environmental collage by artist/author Jeannie Baker. Her delightfully intricate works, titled *Desert River :The Story of Rosy Dock*, tell the story of the ecological havoc caused by just one introduced species in the desert region of central Australia. Because this work had previously been published as a book which had become extremely popular in schools, we expected record numbers of visiting students. To benefit from this, and to extend opportunities for learning in the garden, a package of events relating to the exhibition theme was developed.

With a little research on the topic, many fascinating stories have emerged about the introduction, spread, impact and attempts at control of introduced plants. The stories have broad connections to the curriculum and, from an environmental perspective, provide a framework for better understanding of such themes as threats to biodiversity, ecological balance and the impact of rapid habitat change.

Two garden programs were developed to link with the Rosy Dock exhibition: "A Weed Wander" and a "Feral Plant Trail".

## A Weed Wander

A Weed Wander consisted of a potted display of local environmental weeds. Each pot was labelled with the plant's name and brief information describing one or two features which have helped it to spread beyond its natural habitat. Quite often visitors said they were surprised to find that some of the weeds on display were not indigenous local plants!

Activities based on the display included:

### Weed Quiz:

Using quiz worksheets, students were encouraged to match information from the labels of weeds on display with the name of the weed, drawing a line between the matching pairs.

Plant	Label information
Bridal Creeper	○ Hooked spines on my burrs grab on to passing animals and clothes helping to spread my seed
Burr Medic	○ I produce thousands of tiny dust-size seeds after flowering. Over 500 000 of me were destroyed in the Adelaide Hills in 1995-96. The fight goes on to stop me spreading.
African Weed-Orchid	○ I am no longer fashionable for wedding bouquets and now smother large areas of native bush.

### Weed Match

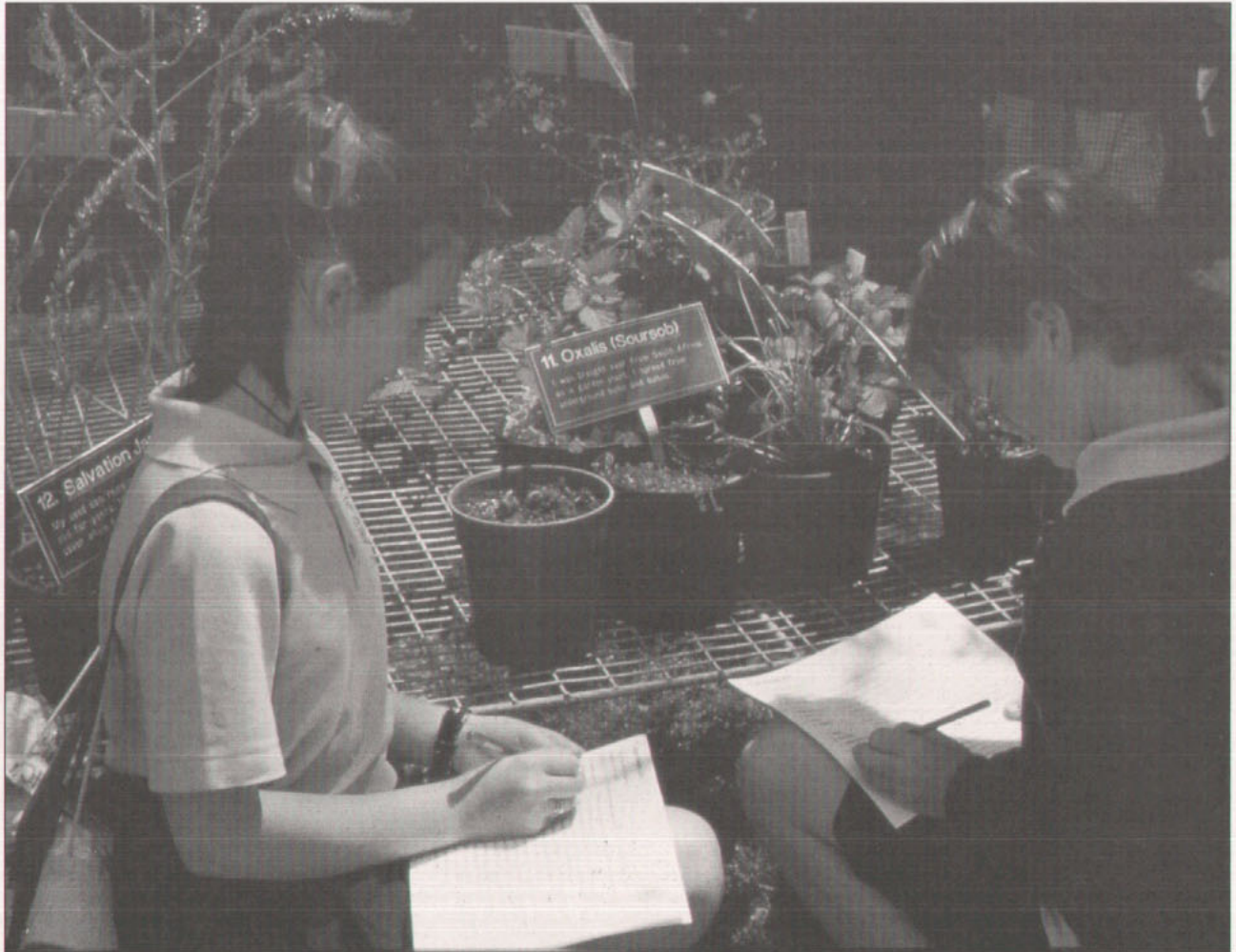
This was a simple activity to help students recognize local weeds. Using the potted plant display, they matched line drawings of weeds to the correct plant name.

**Weed Match**

- Wander around the weed collection. Look at the plants closely.
- Use a line to connect the drawing of the weed below to its name at the bottom of the page.
- Look carefully, some of the weeds may not have flowers like they do in the drawing.

(Illustrations from: 'It's Blue with Five Petals' by Ann Prescott and from 'Garden Weeds' by D. J. Whitley and T. J. Christensen.)

Boneseed      Sorrel      Bridal Creeper      African Weed Orchid      Barley Grass      Gorse



School material is designed on the philosophy that student learning should be activity based

### Feral Plant Trail

The second major activity was a self guided 'Feral Plant Trail' through the garden. The trail visited nine selected plants (or closely related plants) that had invaded habitats in different areas of Australia. The plants included were olive, fennel, blackberry, prickly pear, camphor laurel, mimosa, a native wattle and the castor oil plant. The list also included the example of melaleuca, an Australian weed export which has gone wild in the Florida everglades.

### Story pages

An activity booklet was produced, written as if the plants were telling their own stories of introduction and invasion. Two examples of how the story of the prickly pear was used to teach through different curriculum areas are:

#### • History

The first introduction of plants into countries often have interesting

historical or cultural links which can become starting points for further discussion.

"I was brought to Australia with the First Fleet as food for the cochineal beetle. This beetle produced a red dye used to colour the British soldiers uniforms. Other plant relatives of mine were brought to Australia for use as hedges."

#### • Environmental Understandings

Methods of control, and reasons why introduced species often successfully compete with local species provided practical examples of biological and ecological principles.

"Nothing could stop us until they introduced the dreaded *Cactoblastis*, a caterpillar from South America. It just loved to eat us and in only seven years over 90% of our population in Queensland had been destroyed. A great example of successful biological control. How you can help - Make sure

material from your compost heap will not wash down drains to invade streams and creeks."

Other stories included amazing number facts, local action, Aboriginal perspectives, geographical knowledge and economic plant use.

### Student Activity Pages

Most of our school material is designed on the philosophy that student learning should be activity based. We also recognise that students come to the garden with knowledge and understandings which can be built upon, and believe that both teachers and students should have some choice in the activities they pursue during their visit.

Activity pages were produced with the heading "Students could:", followed by a list of suggested explorations. Response pages were designed to minimise the time that students spent writing. Examples of the types of

learning activities included observation skills, (i.e. "Fennel - Look closely at the plant and work out what part is used as a vegetable"), building upon previous knowledge, simple identification skills, problem solving, issues based learning (i.e. "What do you think about laws stopping people from bringing plants like this into Australia?"), and questions to encourage open ended responses.

Over 4000 students participated in and enjoyed the 7 week program. Its success highlighted the value of using art events to attract visitors as well as to build wider educational experiences in the garden. The program also reinforced how adaptable garden collections can be for teaching key concepts in cross-curricular environmental education.

## ▲ Résumé

Un des risques majeurs pour l'environnement australien depuis l'arrivée des Européens il y a plus de 250ans, est l'invasion de la savane arbustive locale par des plantes introduites. Le Jardin Botanique

d'Adélaïde a organisé une exposition de collages racontant les ravages causés par les plantes introduites dans la région désertique du centre de l'Australie. Des activités étaient proposées, en relation avec le thème de l'exposition, expliquant l'introduction de ces plantes, leur répartition, leur impact sur le milieu naturel et les tentatives de contrôle de leur propagation. Cette exposition permettait de mieux comprendre des thèmes tels que la conservation de la biodiversité, les équilibres écologiques et les impacts des changements rapides des habitats.

Plus de 4000 étudiants ont participé et apprécié le programme de 7 semaines. Ces activités soulignent l'utilité des collections végétales des jardins botaniques pour l'enseignement de concepts clefs de l'environnement.

## ● Resumen

Uno de los mayores peligros para el medio ambiente Australiano desde que los Europeos llegaron hace más de 200 años ha sido la invasión en el medio natural de especies exóticas introducidas de otros países. El Jardín

Botánico de Adelaide acogió una exposición artística compuesta por collages medioambientales que contaban la historia de la destrucción ecológica producida por las especies introducidas en el desierto de Centro-Australia. Se realizó un programa de los actos desarrollados en donde se explicaba el tema de la exposición, contando historias sobre la introducción, la expansión el impacto y los experimentos para controlar las plantas introducidas. La exposición constituyó un marco para un mejor entendimiento de temas tales como de la amenaza a la biodiversidad, balance ecológica y el impacto de un cambio brusco en un hábitat. Más de 4000 estudiantes participaron y disfrutaron de este programa de 7 semanas de duración. El programa reforzó el tema de como pueden ser adaptadas las colecciones del jardín para enseñar conceptos claves en la educación ambiental a través del curriculum.

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