



KINGS PARK

Rising From The Ashes

Kings Park is ablaze with colour this spring. The fire that tore through the natural bushland earlier this year has given rise to the one of the best wildflower seasons the Park has ever had.

THE fire was extremely hot, completely burning the understorey shrubs, foliage and small branches of the trees. In some cooler spots, the canopy was only scorched but trees gradually lost their leaves over several weeks.

Fortunately, our native flora is well adapted to the occasional bushfire and many plants need fire to regenerate. Most larger trees in Kings Park, such as eucalypts and some banksias, have thick, protective bark which resists all but the fiercest fires. After fire scorches the crown, epicormic buds (special leaf-buds just under the bark of the trunk and branches) shoot out from the bark as clumps of foliage so the tree can carry out its essential functions.

The blackboy is extremely resilient to fire. It's trunk is made of a dense matting of burnt leaf-bases that protect the leaf buds. CSIRO Research Scientist Malcolm Gill has shown that flowering of blackboys is stimulated by fire.

Many species of native plants have massive rootstocks or tubers beneath the soil, and these burst into new shoots after a fire.

The fruits of many trees are hard, woody and highly fire-resistant, such as the 'honkey nut' of marri and the large woody fruits of the banksias. The heat from a fire will often split the fruit's casing and release the seeds inside them. Over the next few days, or weeks in the case of banksias, the seeds drop out onto the fertile ashbed below.

However, plants which regenerate only from seed, such as parrotbush, can be wiped out if the interval between fires is too brief. Some plants may take five years to produce their first flowers, so they need time to build up reserves of seed, either on the plant or in the soil.



Fire consumes a large sheoak tree in the Park. Fortunately sheoaks survive fire and recover with time.▲

Several roads had to be closed and the large crowds that had gathered to watch were kept from the danger area.◀◀

Firefighters had to wait for the fire to burn out when it reached Winthrop Avenue and put out spot fires that jumped the road.

Photos - Carolyn Thomson ◀

Previous page:
Aerial photo - Richard Woldendorp
Orchid photo - Andrew Brown



REGENERATION

About a month after the Kings Park fire, zamia palm leaves began to unfurl and blackboys started to regrow. New growth began to shoot from the trunks and branches of the banksias, eucalypts and sheoaks. Resprouting shrubs such as blueboy and pixie mops burst into new growth, from lignotubers protected by the soil. Many of the other species with stored food reserves in their tubers such as orchids and milkmaids or rhizomes (such as flax lily), start growing well before winter.

Because of the disappointing early winter rains of 1989, few seedlings germinated before mid-July, except for running postman. However, after this time, parrotbush, *Hakea prostrata* and kangaroo paw seedlings filled open areas left by dead trees and shrubs, although some ashbeds were still bare. Temporary plants such as parakeelya, slender lobelia and button creeper took advantage of the open conditions and extra nutrients from the ashbeds. These species may only be seen for one or two years after a bushfire, before they are shaded by perennial plants.

In August, the red and green kangaroo paws, swan river myrtle and several other shrubs began to flower on their new growth. Many others will flower in profusion because of the removal of the surrounding competition, whilst the red ink sundew, several species of orchids and blackboys are stimulated into flowering because of the production of ethylene gas during the fire.

In fact, Kings Park is shaping up to have one of the best native orchid displays on record. Twenty-nine species are known to occur in the Park. Many of these will

Above: zamia palm (*Macrozamia riedlei*).
Photo - Michael Morcombe ◀
Shoots from sheoak (*Allocasuarina fraseriana*).

Photo - Gerhardt Freudenthaller ▲
Jug orchid (*Pterostylis recurva*);
and donkey orchid (*Diuris longifolia*).
Photos - Andrew Brown ▶

Below: Parakeelya (*Calandrinia balonensis*);
Swan River myrtle (*Hypocalymma robustum*).

Photos - Michael Morcombe ▼



flower in greater profusion and some will only flower this season because of the fire. The absence of dense scrub also makes the diminutive species such as the flying duck and hare orchids much easier to spot.

Some species have already flowered and finished. In early September, the hare orchid, white bunny and banded greenhood contained large ripe seed capsules ready to burst. By mid-September, large areas of the bush were dotted with blazes of yellow when the cowslip orchid burst into full bloom. In a contrast of colour and form, the red beaks were in full flower. This is quite an event, as in unburnt bush they are seen only as large oval leaves, commonly called elephant ears.

By this time, the sweet fragrance of the tall leek orchid was noticeable, although the spikes of the black or green flowers look so much like the blackened remains of shrubs that they are often difficult to tell apart from a distance. Many other orchids, including the brightly coloured pansy donkey, dainty pink fairy, king spider, bird and blue lady add a touch of colour and beauty to the otherwise drab spaces between regenerating shrubs and trees.

The fire did cause many problems. There are many dead trees, some weed species have invaded the bush and the cost of controlling the fire was enormous. It will probably be many years before tree smokebush and other woody reseederers flower in the burnt areas.



Above: white spider orchid (*Caladenia longicauda*); purple enamel orchid (*Elythranthera brunonis*); bird orchid (*Pterostylis barbata*); and dwarf pink orchid (*Caladenia reptans*). ▲

Masses of cowslip orchids (*Caladenia flava*) are now abundant in Kings Park. Fire stimulates their flowering.
Photos - Andrew Brown ◀

Photo - Robert Karri-Davies ▼



MANAGEMENT PROGRAM

Kings Park Board has a program to overcome some of the problems caused by the fire.

Urban bushland remnants such as Kings Park are isolated in a sea of alien plants and altered landscapes and weeds are always present, competing with native plants for space and nutrients. During regeneration after fire, perennial weeds (especially veld grass and weeping love grass) which regrow from dormant buds and seed can outgrow reseeding natives.

Their dead leaves also increase the chance of another fire. To reduce this problem, the selective herbicide fusilade is being used in the bushland and quadrats set up to monitor its effectiveness.

In some areas, locally collected native plant seeds may have to be sown next year or, as a last resort, tube stock planted out.

The fire has also sparked several research projects. Tree death and regrowth is being monitored and permanent quadrats to study regeneration have been established. Studies on *Lobelia gibbosa* and orchids are also underway.

The Australian bush is much more fire-resistant than most people believe. With a bit of help, the Kings Park bush will recover, as it has from countless bushfires over the centuries. However, hot summer fires are a great risk to people, effect the appearance of the bush and make it vulnerable to weeds. It will be important in the future to try and prevent huge fires like the one in 1989.

BOB DIXON

LANDSCOPE

VOLUME FIVE NO 1 SPRING EDITION 1989



Perth people were devastated when a fire tore through their favourite bushland retreat. But, with Spring, new life and colour is returning.



Rottneest isn't the only unspoilt island on Perth's doorstep- what about Penguin, Garden, Seal and Carnac Islands? They are steeped in history and provide a haven for some unique wildlife.



Algae has clogged the estuaries near Mandurah, killing fish and creating an eyesore. What is the solution?



Jarrah dieback- the word strikes fear into any forester's heart- but research is fuelling the fight against the killer fungus.



Explore the waterways of the South-West by canoe.

C O U N T E R

What's new in Kings Park this spring? Artist, Susan Tingay, couldn't resist this magnificent collection of spring orchids. From left- cowslip orchid (*Caladenia flava*), jug orchid (*Pterostylis recurva*), King spider orchid (*Caladenia huegelii*), donkey orchid (*Diuris longifolia*), rabbit orchid (*Caladenia menziesii*), and pink fairy orchid (*Caladenia latifolia*).
Back Cover: Stimson's python (*Morelia stimsoni*)
Photo-Jiri Lochman



F E A T U R E S

| | |
|--|----|
| ISLAND INTERLUDES KYLIE BYFIELD | 10 |
| THE DAWESVILLE DILEMMA ANDREW BELL | 18 |
| RISING FROM THE ASHES BOB DIXON | 25 |
| STILL WATERS RUN TAMMIE REID AND TANYIA MAXTED | 33 |
| TREE KILLER BRYAN SHEARER AND RAY BAILEY | 38 |
| A STATELY COLLECTION CAROLYN THOMSON | 45 |
| PUTTING DOWN ROOTS TANYIA MAXTED | 51 |
| PHOTO ESSAY WILDFLOWER WONDERLAND | 56 |
| R E G U L A R S | |
| IN PERSPECTIVE | 4 |
| BUSH TELEGRAPH | 6 |
| ENDANGERED FOREST FROGS | 17 |
| URBAN ANTICS | 58 |
| S P E C I A L S | |
| PHOTO COMPETITION | 29 |
| LIFT-OUT POSTER HUMPBACKS HEAD SOUTH | |

Editor: Carolyn Thomson
Designers: Louise Burch/Robyn Mundy
Production: Karen Addison
Maps: Project Mapping, CALM
Advertising: Tim Langford-Smith ☎ (09) 389 8644 Fax: 389 8296
Acknowledgements: Cartoon-Louise Burch
Illustrations-Ian Dickinson, Yeon Hee Kim

Colour Separation by The Colour Set
Printed in Western Australia by Kaleidoscope
© ISSN 0815-4465. All material copyright. No part of the contents of the publication may be reproduced without the consent of the publishers



Published by Dr S Shea, Executive Director
Department of Conservation and Land Management,
50 Hayman Road, Como, Western Australia 6152.