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Greening Urban Parks and Gardens for Wildlife



Department of
Conservation & Land Management



Greening Australia



In looking at local plants one can usually see signs of their associated fauna—such as in the foliage of this flooded gum. Closer inspection would reveal a variety of marks on the leaves, stems and bark, indicating the ways of life of many different insects—which provide abundant food for birds. The tree is nonetheless in splendid health: it still has plenty of leaf surface for photosynthesis. Most flooded gums cope quite happily with their insect dependants, having evolved with them. (Photo: R. Powell)



A non-local tree commonly cultivated in Perth: the river gum. Its virtually unmarked foliage shows that, even though it is closely related to the flooded gum, it is supporting very little animal life—like many non-local trees and shrubs. (Photo: R. Powell)

INTRODUCTION

We tend to think that most of our wildlife lives in the country, but there is much that survives in the Perth Metropolitan Region. It is in our interest to conserve Perth's wildlife; its presence, especially that of birds, gives us a sense of well-being.

There is a danger that, as Perth continues to expand, its wildlife will diminish; but that can be prevented if enough habitat is conserved or re-created.

WILDLIFE LANDSCAPING

In the past, we tended to value horticultural qualities of plants, such as neatness and showiness, but nowadays we value many native plants, for different qualities, such as their variety of forms and textures, and their greater ability to withstand our harsh natural conditions.

In many places, such as formal parks, horticultural practices will remain important, and many enthusiastic gardeners will continue to use them. But in other places we can adopt an approach that will benefit wildlife. Wildlife landscaping creates, restores, or maintains an area in such a way as to support as much native wildlife as possible. This involves restoring and maintaining the area's natural plant life. It can be applied to both public parks and private gardens.

By creating a better environment for wildlife in the city and suburbs, we can also increase our own appreciation and understanding of nature, and so create a better environment for ourselves.

SPECIAL VALUES OF LOCAL PLANTS

Wildlife landscaping uses **local** plants. These are the natural plant life of an area—the species that grow naturally on the site, or grew there before it was cleared or disturbed.

A general belief is that any native trees or shrubs will provide good habitat for wildlife. Many non-local native plants do provide food for honey-eating birds (and honey-eating insects), but often little else. Local plants have the ecological advantage that the local flora and fauna evolved together. A wide variety of animal life is therefore specially adapted to use these plants.

Under Western Australian law, local plants as well as animals are defined as wildlife, and are valued for their own sake. And they are a living link with the past: by having local plants we keep something of the setting that our forebears knew.

Local plants are also very practical. They are adapted to the soil and climate of their site; so, once established, they need no watering.

PERTH'S FLORA

The flora of south-western Australia is famous for its richness and for the proportion of species (nearly seven out of ten) that do not occur naturally anywhere else. The flora of the Perth Metropolitan Region is in many respects typical of the south-west in general, and shares its richness and interest.

Of the nearly 1500 species that occur naturally in the Perth Metropolitan Region, the vast majority are small plants—low shrubs and herbs (soft plants). Many of these are highly admired. Some of the best-known of Western Australia's orchids, kangaroo paws, buttercups, banjines, lechenaultias, myrtles, etc., belong to

Cover: Splendid Fairy-wren — an example of the many bird species that occur in the Perth Metropolitan Region only where there is bush habitat. (Photo: M. Morcombe—copyright)

this Region.* There are many distinctive plant communities, such as banksia woodland, jarrah forest, tuart forest, heaths on limestone ridges and granite slopes, and vegetation bordering swamps and rivers.

The following publications provide information on the flora and plant communities of the Metropolitan Region:

Sense of Place by G. Seddon (University of Western Australia Press, 1972)—has chapters on Perth's plant communities and tree species.

Eucalypts of the Perth Area by S. & A. Tingay (Campaign to Save Native Forests (W.A.), 1976)—about the eleven main eucalypts that occur in the Metropolitan Region.

Flowers and Plants of Western Australia by R. Erickson *et al.* (Reed, 1979 (2nd ed.))—has a section on the Swan Coastal Plain and Darling Scarp.

The Self-effacing Gardener by R. Powell & J. Emberson (Organic Growers Association W.A., 1979)—has a plant list of species of the different soil-types of Perth's coastal plain, and describes techniques of establishing local plants.

Western Landscapes, edited by J. Gentilli (University of Western Australia Press, 1979)—has a chapter on the vegetation of the Perth Region.

Kings Park Plants by E. Bennett (published by the author, 1985 (2nd ed.))—a key to the plants growing wild in Kings Park.

Flora of the Perth Region (Western Australian Herbarium, in press)—a key to the plant species that occur in the region from Gingin to Bunbury, with a description of each species and notes on habitat, distribution, flowering-time, etc.

PLACES FOR WILDLIFE LANDSCAPING

Public Areas

Bush reserves are the most obvious places for wildlife landscaping. Since the local vegetation is already present, the approach here consists chiefly of controlling the pressures that cause degeneration.

In 1983 a seminar was held on this subject. The proceedings, titled *The Management of Small Bush Areas in the Perth Metropolitan Region* (Department of Fisheries and Wildlife, 1984), are available from the Department of Conservation and Land Management.

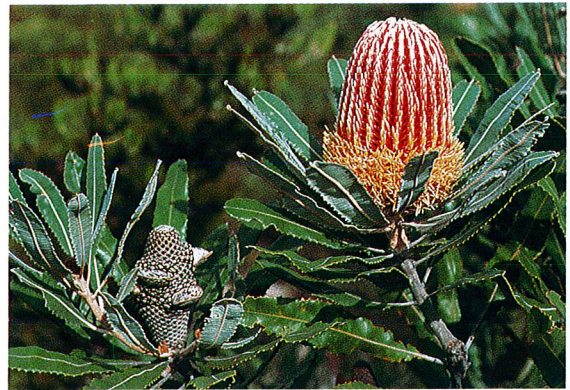
The report *The Darling System—System Six* (Department of Conservation and Environment, 1983) stressed the value of retaining and managing bush areas. Though the report could deal only with the larger areas, virtually any bush area (even if very small) provides some valuable habitat. The report is available from the State Government Information Office, or may be read at the Department of Conservation and Environment or at your local library.

Many other sorts of area can also be used for wildlife landscaping. Golf courses and some of the parks and open spaces in the suburbs are very suitable. Then there are the verges of railways and major roads; these have the potential to allow much room for wildlife, and also to provide routes of dispersal, especially for birds.

Ordinary street verges have their limitations, such as power lines over one side, and the need to maintain visibility for users of footpaths and driveways. There are, however, local trees that are suitable for street verges. Collectively, street verges occupy a very large area, so their landscaping has a big influence on the amount of habitat in the suburbs, especially for birds. The Kings Park



The flora of the Metropolitan Region is rich in tiny herbs, such as this black-eyed sundew, the vast majority of which are not cultivated and survive only in bush areas. (Photo: A. G. Wells—copyright)



The firewood banksia is one of the two commonest banksias of Perth's coastal plain, and its flower-spikes are greatly admired. It is, however, rarely grown. (Photo: S. Hopper)

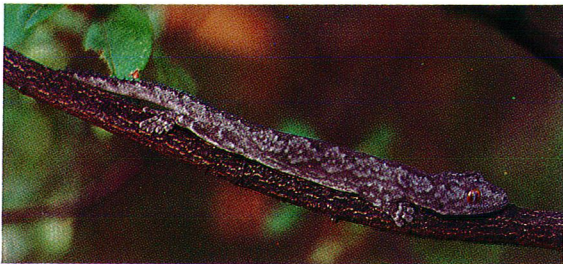


As well as their many different plant species, bush areas are rich in fauna, especially insects, lizards and birds. (Photo: R. Powell)

*For scientific names see back page.



Many species of jewel beetle are native to this Region. Most require two different species of plant—one for the larvae and another for the adults. This specimen is pictured on white myrtle. (Photo: P. McMillan)



A variety of reptiles inhabit the Metropolitan Region. Many of the smaller lizards, such as this spiny-tailed gecko, can exist in quite small patches of vegetation where there are ground litter and local trees and shrubs to support insects. (Photo: R. Powell)

Limestone marlock, a eucalypt natural to the western suburbs of Perth, is of suitable size for planting on verges, particularly where there are no wires. This graceful specimen is almost fully grown. (Photo: R. Powell)



Board is replacing the non-local memorial eucalypts in the Park, when they die, with mostly local species, such as marri. This is one way of ensuring that verges will offer increased habitat in the future.

Private Gardens

Like street verges, gardens total a very large area, and thus have an important bearing on wildlife habitat.

Although most of us have other uses for much of our gardens—for lawns, vegetables, displays of flowers, etc.—there will in many cases still be room for a small patch of local plants. Many local shrubs need little space. The rewards are: giving your block a special identity as part of your natural environment; seeing the plants being used by associated fauna, especially insects; and knowing that you have done something to preserve the habitat of insects, lizards and birds.

The references given under 'Perth's Flora' will help you determine which species are likely to have occurred naturally on your block. Some are available from nurseries, but it is best to grow the plants yourself (see 'Planting', below). A group that specializes in obtaining and growing local plants is the Local Plants Group (3 Barque Place, Kallaroo, W.A. 6025). The Western Australian Wildflower Society (P.O. Box 64, Nedlands, W.A. 6009) sells seed of a number of local species.

DESIGN OF SUBURBS

In creating new suburbs it should not be necessary to destroy all vegetation: many home-buyers would prefer to move into a harmonious bush environment. Bush should be left in many open

spaces, and on private blocks it should be possible for the planning authority or the developer to specify the house site, its service lines, etc., to minimize clearing. The common design of suburbs nowadays, with crescents and cul-de-sacs, and many power lines underground, should offer more scope for preserving stands of trees and shrubs on verges as well. That would reduce the need for planting and watering, and give an instantly attractive environment.

In established suburbs, planning the flow of vehicular traffic often allows the narrowing of some roads and the creation of cul-de-sacs, providing extra room for wildlife landscaping.

PLANNING OF PARKS AND GARDENS

New parks can be developed in many different ways. In popular practice, several landscaping styles are often used together in the one place. However, where wildlife landscaping is chosen, it is best to make it the sole theme. If natural associations of local plants are used, the result is a harmonious blend that offers relief from the regimented effect of buildings and formal planting.

The value of already established parks as fauna habitat can be increased by adding local trees and shrubs. But there is still the option of developing them for wildlife as the sole theme, by removing non-local trees and shrubs and replacing them with local ones. This should be considered for some parks or sections of parks, especially in suburbs where there are no bush areas left.

On a small scale, the same things apply to gardens too. The most harmonious effect is gained by setting aside one part, even if tiny, for local plants alone.



Part of a garden on the Darling Scarp, containing plant species that grow naturally on the Scarp. (Photo: R. Powell)

Golf courses have the potential to provide comparatively large areas of good habitat for wildlife. In the background, stands of tuart have been retained. In the foreground the heath vegetation (on shallow soils over limestone) still has a good diversity of plant species, thirty years after the golf course was opened. The retention or re-establishment of local vegetation in golf courses also provides a pleasant bush atmosphere for golfers. (Photo: R. Powell)





This park contains a fine group of jarrahs (background). These trees by themselves would make a good feature of the park. Our appreciation of them, however, is not helped by the planting of Eastern States eucalypts (foreground), which will grow much larger and dominate the scene. Furthermore, they will harm the jarrahs by overshadowing them; eucalypts need plenty of sun. (Photo: R. Powell)

ESTABLISHING PLANTS

Natural Regeneration

In wildlife landscaping, natural regeneration is preferable to planting. It always has a more natural, restful effect, and it maintains the character of the vegetation.

In many situations, mature local trees and shrubs will reproduce. If they do not, it is usually because their seedlings are killed when very young, by mowing, hoeing, burning, trampling, etc. Avoiding these practices will often allow regeneration to succeed.

Planting

Where most or all of the natural plants have disappeared, natural regeneration will not be sufficient, and it will be necessary to supplement it by planting either seedlings or seeds.

The plant community that would have grown naturally on the site can serve as a model. It is difficult to restore the full diversity of natural vegetation, but at least representatives of the different sizes of plant can be obtained. The books mentioned under 'Perth's Flora' are helpful.

Where possible it is best to raise the plants from seeds or cuttings collected from naturally occurring specimens nearby. Many trees and shrubs vary in form in different parts of their natural range. Collecting locally will help preserve this variability, and ensure that you have the form adapted to your locality.

Larger areas, such as parks, may have several plant communities that differ slightly or considerably. The distributions of remaining trees and shrubs may confirm this. Planting in a way that preserves that natural variation increases the interest and educational value of the park. Irregular groupings of plants will give a more natural effect than even spacing. It is preferable to plant trees out when small and to use no stakes: they will then develop more strongly and produce more varied, graceful habits.

MANAGEMENT

Local plants should not be watered when mature. However, the survival rate of seedlings will be improved by watering weekly or fortnightly in their first summer. Weeds should if possible be removed or cut, but carefully, so as to avoid disturbing the soil

In the development of a new housing estate, this hill has been ripped, destroying one of the few stands of Fremantle mallee in the Metropolitan Region. By careful planning, special areas such as this can be retained as features in the environment. (Photo: R. Powell)



and damaging seedlings (whether planted or regenerating naturally).

The mulch that collects under natural plants should be allowed to remain. It provides habitat for soil fauna, helps conserve moisture in the soil, and may suppress weeds.

AVOIDING PRUNING

The lopping of trees reduces the habitat they provide. It may also make them structurally unstable: the regrowth is easily blown down. Besides, trees are more than a trunk and a mass of foliage: much of their natural beauty lies in their great variety of form and fine detail. These are things we can admire if we leave trees unlopped.

We can minimize the need to prune by not planting trees and shrubs where they will outgrow their space. The space **above** them is particularly important; the tree or shrub should be placed to one side of an obstacle rather than directly underneath (allow, however, for salt winds).

If pruning is necessary, we can minimize its impact by:

- removing only those branches that are in the way;
- removing the whole branch, leaving no protruding stump.

Leave dead limbs if possible, because they are of value to wildlife.

CREATING HABITAT ARTIFICIALLY

Some species of fauna have benefited from new habitats created by urbanization. For example, the Welcome Swallow, which has learnt to nest in buildings, has become more plentiful in Perth. For many other birds, however, nesting habitat has been reduced.

Providing more natural vegetation will eventually increase nesting habitat, but it might be worth while giving the process a helping hand. Nest-boxes have been very successful in many other countries, and have enabled some bird species to re-establish themselves in districts where they had not been seen for a long time. The same could happen here. Experimenting with different designs and positions of nest-boxes will help you find the requirements of different species.



Without having grown especially large, these old jarrahs have developed complex structures, full of interesting detail. The closeness of these trees to each other has influenced their development—for example, the directions of their trunks and branches—adding further interest to this beautiful pair. Stands of trees like this should be retained wherever possible, because their character takes years to develop. (Photo: R. Powell)



Seedlings of parrotbush. This picture (taken in March) shows that, though some seedlings die in their first summer, many survive. The foliage of a mature plant can be seen at the top. Many local trees and shrubs will regenerate readily if allowed to. (Photo: R. Powell)

HOW YOU CAN HELP

Each one of us can help wildlife in the city and suburbs. We can take an interest in public open spaces, and point out to the relevant authorities areas where wildlife habitat can be conserved or created.

Furthermore, many of us have our own gardens. If we each plant even one plant that is local to our block, we shall be doing something towards preserving wildlife—both the plant species itself and the insects and other animals that use it.

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Published by
THE DEPARTMENT OF CONSERVATION
AND LAND MANAGEMENT
P.O. Box 104, Como, Western Australia 6152

in conjunction with
GREENING AUSTRALIA (W.A.)
P.O. Box 783, West Perth, Western Australia 6005

Second edition, 1986

ISBN 0 7309 0189 0

Scientific Names of Species Mentioned

banjines	<i>Pimelea</i> species
black-eyed sundew	<i>Drosera platystigma</i>
buttercups	<i>Hibbertia</i> species
firewood banksia	<i>Banksia menziesii</i>
flooded gum	<i>Eucalyptus rudis</i>
Fremantle mallee	<i>Eucalyptus foecunda</i>
jewel beetles	family Buprestidae (<i>Stigmodera gratiosa</i> illustrated)
kangaroo paws	<i>Anigozanthos</i> species
lechenaultias	<i>Lechenaultia</i> species
limestone marlock	<i>Eucalyptus decipiens</i>
marri	<i>Eucalyptus calophylla</i>
myrtles	<i>Hypocalymma</i> species
orchids	family Orchidaceae
parrotbush	<i>Dryandra sessilis</i>
river gum	<i>Eucalyptus camaldulensis</i>
spiny-tailed gecko	<i>Diplodactylus spinigerus</i>
Splendid Fairy-wren	<i>Malurus splendens</i>
tuart	<i>Eucalyptus gomphocephala</i>
Welcome Swallow	<i>Hirundo neoxena</i>
white myrtle	<i>Hypocalymma angustifolium</i>

All the plant species in this small front garden (foreground) grow naturally in Perth's coastal limestone. They were planted here six years before the picture was taken. (Photo: R. Powell)

