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GREENING URBAN PARKS AND GARDENS FOR WILDLIFE





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.)

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.

As Perth continues to expand, there is a danger that its wildlife will diminish but the impact can be reduced if enough habitat is provided and the existing one looked after. This leaflet introduces the subject of wildlife landscaping, which applies to both public parks and private gardens. A pamphlet is being prepared especially for professionals involved with the urban landscape that will examine the subject in more detail.

WILDLIFE LANDSCAPING

The wildlife approach to landscaping is based on two principles;

1. retaining and encouraging as much natural plant and animal wildlife as possible.
2. enhancing our appreciation of nature.

In the past we all tended to value horticultural qualities of neatness and showiness in plants, but nowadays we value native plants for their own individual qualities, such as their highly colourful and delicate flower display and robust nature.

In many places, such as formal parks, horticultural landscaping will continue to play a role and many enthusiastic gardeners will continue to use this approach. In other places we can deliberately adopt an approach that will benefit wildlife. By creating a better environment for wildlife in the city and suburbs we can also create a better environment for people.

SPECIAL VALUES OF LOCAL PLANTS

The wildlife approach to landscaping involves principally the use of local plants — those that grow naturally on that site, or grew there before it was cleared or disturbed. A general belief is that any native trees or shrubs will provide a good habitat. 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.

Local plants themselves are wildlife — forms of life that occur here naturally — so preserving wildlife means preserving local plants as much as animals.

It is by having local plants that we can learn most about our natural environment, and keep something of the setting that our forebears knew.

In looking at local plants one can usually see signs of their associated fauna — such as in the foliage of the local 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.)

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



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



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.)



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. C. Wells — copyright.)

PERTH'S FLORA

The flora of south-western Australia is famous for its richness and for its high proportion of species (nearly seven out of ten) that occur naturally nowhere 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 1,500 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 and some of the best-known are; the orchids, kangaroo paws, buttercups, banjines, lechenaultias and myrtles*. 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.

* For scientific names, see back page.

Publications that provide helpful information on the flora and plant communities of the Metropolitan Region: *Sense of Place* by George Seddon (University of Western Australia Press, 1972); *The Self-effacing Gardner* by Robert Powell and Jane Emberson (Organic Growers Association W.A., 1979); and *Flora of the Perth Region* (Western Australian Herbarium, in press); the section on the Swan Coastal Plain in *Flowers and Plants of Western Australia* by Erickson, R., George, A.S., Marchant, N.G., Morcombe, M.K. (Reed 1979 [2nd ed.]); and for more detailed geographical description *Western Landscapes* by Gentilli, J. (ed.) (UWA Press, 1979) and *Environment and Science*, O'Brien, B.J. (ed.), (UWA Press, 1979).

PLACES FOR WILDLIFE LANDSCAPING

(i.) PUBLIC AREAS

Bush reserves are the most obvious sort of place for wildlife landscaping. Since the local vegetation is already present, the wildlife approach here involves not so much landscaping, but more the controlling of pressures that cause degeneration. The Department of Fisheries and Wildlife has recently published the proceedings of a seminar it held on this subject (titled *The Management of Small Bush Areas in the Perth Metropolitan Region*, copies are available free from the Department's Extension and Publicity Office, telephone 325 5988 or contact the Greening Australia Office on 384 4201). The report, *The Darling System — System Six* (Department of Conservation and Environment, 1983; copies available from — State Government Information Office, 32 St. George's Terrace, Perth, telephone 325 5244; the Department of Conservation and Environment's Library, Ground Floor, 1 Mount Street, Perth; and through your local library) stresses the value of retaining and managing bush areas. Although the report could only deal with the larger areas, virtually any bush area (even if very small) provides some valuable habitat.

Many other sorts of areas can also be used for wildlife landscaping, such as golf courses and some of the parks and open spaces in the suburbs. Then there are the verges of railways and major roads. These have the potential to allow much room for wildlife, and also to provide (especially for birds) routes of dispersal.

Ordinary street verges have their limitations — visibility must be maintained for users of footpaths and driveways and most streets have powerlines over one verge and underground services. There are, however, local plants that are suitable for street verges. Choose the low growing trees and shrubs from your area the references given under 'Perth Flora' will assist in your selection. Collectively, street verges occupy a very large area, so their landscaping has a big influence on the amount of habitat. This is especially true for birds in the suburbs. When any non-local memorial eucalypts die in Kings Park the Board is replacing these with mostly local species, such as marri. This is one way of ensuring that verges will offer increased habitat in the future.

(ii.) 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, horticultural displays of flowers, etc. — there will in many cases still be room for a small patch of local plants. The rewards are; giving your block a special identity as part of our natural environment, seeing the plants being used by associated fauna, especially insects, and knowing that one has done something to preserve the habitat of insects, lizards and birds. Remember to think of your neighbours and other restrictions to planting the larger eucalypts in your garden.



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. The retention or re-establishment of local vegetation in golf courses also provides a pleasant bush atmosphere for golfers. (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.)



The references given under 'Perth's Flora,' above, will enable you to determine which species are likely to have occurred naturally on your block. Although some are available from nurseries, it is best to grow the plants yourself (see 'Planting' below). A group that specialises in obtaining and growing local plants is the Local Plants Group (Mr. Murray Limb, C/- 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.

(iii) DESIGN OF SUBURBS

In creating new suburbs it should not be necessary to destroy all vegetation. Some bush areas and individual trees can be retained if care is taken when clearing. Hitherto, trees and shrubs have often been retained in private blocks, but less commonly on street verges. The common design of suburbs nowadays, with crescents and cul-de-sacs, and many powerlines underground, should offer more scope for preserving stands of trees and shrubs on verges that would reduce the need for planting and watering. Local plants have adapted to the seasons and

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.)

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.)





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



after establishment, their extra water requirements are minimal.

In established suburbs, rationalising 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.

(iv) PLANNING OF PARKS AND GARDENS

New parks can be developed in many different ways. In popular practice often several landscaping themes are used together in the one place. However, where wildlife landscaping is chosen as the theme, 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. The most harmonious effect is gained by setting aside one part, even if tiny, for local plants alone.

ESTABLISHING PLANTS

(i) NATURAL REGENERATION

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

In many situations local trees and shrubs will regenerate with little effort from the manager.

If regeneration does not occur, it is usually because the seedlings are killed when very young by mowing, hoeing, burning or trampling either by people or vehicles. Removing such factors will often allow regeneration to succeed.

(ii) PLANTING

(a) Considerations

In some cases regeneration is not possible and it is necessary to rely on planting.

The natural plant community of the site can serve as a model for the design of the planting. It is difficult to restore the full diversity of natural vegetation, but at least representatives of the different sizes of plants can be obtained. The books mentioned under 'Perth's Flora' are helpful.

Where it is 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.

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 landscaping. (Photo: R. Powell.)



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. (Drawn by S. Patrick from photo by R. Powell.)

Seedlings of parrotbush. This picture (taken in March) shows that, although 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.)



Large areas, such as parks, may have several plant communities that differ slightly or considerably (for instance, an area on a slope). The distributions of remaining trees and shrubs may confirm this. Planting in such a way as to preserve that natural variation increases the interest and educative value of the park. Irregular groupings of plants will give a more natural effect than evenly spaced groups. It is preferable to plant trees when small and to use no stakes. They will then develop strongly and produce varied, graceful habits.

(b) Planting Techniques

Information on technical aspects of planting (seed collecting, germination, actual planting, maintenance and other after care procedures, can be obtained from — Department of Fisheries and Wildlife, Extension and Publicity Office (telephone 325 5988), in the booklet *Re-Establishing Local Trees and Shrubs on Farms*; Forests Department, Information Branch (telephone 367 6333) who have relevant information sheets; or through the Greening Australia Office (telephone 384 4201).

OTHER MANAGEMENT PRACTICES

(i) AVOIDING PRUNING

The lopping of trees reduces the amount available to wildlife and the value to the landscape. Trees are more than a trunk and mass of foliage, much of their natural beauty lies in their great variety of forms and fine detail. These are things we can admire if we leave trees unlopped.

We can minimise 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 straight underneath (allow however, for prevailing winds).

If pruning is necessary we can minimise its impact on the tree's form by removing:

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

Because they are of value to wildlife leave dead limbs if possible.

(ii) CREATING ARTIFICIAL HABITATS

Some species of fauna have benefited from new habitats created when urban areas have been established. Because it can rest in buildings the Welcome Swallow has become more plentiful in Perth, but for many other birds nesting habitat has been reduced.

Providing more natural vegetation will eventually increase nesting habitat, but it might be worth doing so artificially. 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 to show the requirements of different species.

HOW YOU CAN HELP

Everyone 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 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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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 <i>Buprestidae</i> (<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 <i>Orchidaceae</i>
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>

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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.)