GARDEN PLANTS

gone wild

Weeds are everywhere! They represent about 10 per cent of Western Australia's flora, and some of them have become a serious threat to nature conservation in our State. It is a threat that is being tackled by CALM staff and volunteers.

BY PATRICK PIGOTT AND ROGER ARMSTRONG

Many plants that are now serious environmental weeds were introduced to Western Australia with good intentions: they made attractive garden plants or pasture species. Many of them are beautiful, having colourful flowers or spectacular foliage. Watsonias, gladioli (*Gladiolus* spp.), freesias (*Freesia* spp.) and pelargoniums (*Pelargonium* spp.), with their abundance of brightly coloured flowers, have been used in many gardens in WA since the late nineteenth century. Bridal creeper, with its lustrous green foliage, was introduced at the turn of the century and was popular in bridal bouquets, while the spectacular flowers of arum lily (*Zantedeschia aethiopica*) have always been popular at funerals. Buffel grass (*Cenchrus ciliaris*) and veldt grass (*Ehrharta calycina*) were introduced to provide more reliable fodder for stock than native grasses.

Environmental weeds compete with native plants for basic resources such as water, nutrients, light and space. Weed competition can prevent the establishment of seedlings of native species, and reduces the capacity of remnant bushland to regenerate itself. Management strategies are necessary to prevent or reverse this process.

Since being introduced, weeds have spread with great speed over wide areas. Bridal creeper, arum lily and watsonia have spread into native bushland in the lower south-west, smothering or excluding native plants in already disturbed areas. These species build up their underground storage organs, occupying space in the soil and allowing the plants to survive our dry summers until the following winter rains. Grass weeds, such as African lovegrass (*Eragrostis curvula*) and wild oats (*Avena fatua*), are a major threat to many roadside populations of rare and priority flora (e.g. *Verticordia fimbrilipsis* spp. *fimbrilipsis*). About one third of WA's threatened flora are affected by weeds. Weeds also invade disturbed edges around small Wheatbelt native vegetation remnants, adding to the difficulty of managing them for nature conservation.

However, the impact of weeds on native ecosystems is complex and other natural cycles are affected. For example, veldt grass and other weeds have increased the amount of debris available for bushfires in remnant woodlands around Perth, contributing to hotter and more frequent fires. This has affected the local survival of some species, allowing the invasion of new weeds and thus changing the composition of these unique plant communities. An example

Above: Freesias (*Freesia* spp.), a garden favourite, invading the habitat of the threatened species *Pimelea graniticola* on Yilliminning Rock in the WA Wheatbelt.
Photo – Patrick Pigott

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White flowers of arum lilies (*Zantedeschia aethiopica*), long identified with funerals, mean death to native bushland in our south-west.
Photo – Jiri Lochman

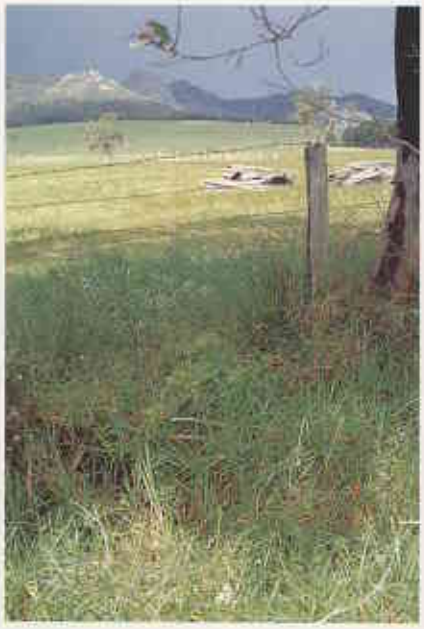
Right: Attractive watsonias (*Watsonia* spp.) grow in a forest clearing, preventing native bush from growing back.
Photo – Dennis Sarson/Lochman Transparencies

of this cycle can be seen in remnant bushland at Kings Park and Botanic Garden, where the combination of dense stands of veldt grass and more frequent fires has resulted in the decline of the tuart (*Eucalyptus gomphocephala*), the largest eucalypt in the Perth area, and increased numbers of banksias (*Banksia* spp.) and other native trees.

Another example is the widespread use of buffel grass in arid-zone pastures. This plant is allelopathic; that is to say, it produces a chemical in its roots that is toxic to other plants, slowing or preventing regeneration of native species. Buffel grass has become a serious pest on north-west offshore islands, eradicating native vegetation and affecting food, shelter and breeding sites of vulnerable native animals.

WHAT IS BEING DONE?

CALM researchers have been studying the distribution of bridal creeper and watsonia in the south-west, as well as the impact and control of environmental weeds on remnant woodlands and populations of threatened flora in the Wheatbelt. To better communicate this work and various community weeds projects, CALM organised two public symposia, the 1993 Watsonia Workshop and the 1995 Bridal Creeper Symposium, with support from the WA Roadside Conservation Committee.



Top (left): Bridal creeper (*Asparagus asparagoides*) and grass weeds growing on a roadside with the splendid backdrop of the Porongurup Range in the south-west of WA.
Photo – Frank Obbens, Bushtec Consultancy

Top (far right): Woodlands of the majestic tuart (*Eucalyptus gomphocephala*) of the Perth area are threatened by weeds, fire and land clearance.
Photo – Dennis Sarson/Lochman Transparencies

Above (centre): Grasses and other herbaceous weeds are part of the understorey of many WA Wheatbelt woodlands, such as salmon gum (*Eucalyptus salmonophloia*).
Photo – Patrick Pigott

Right: Weeds are not all bad. Here, a rock parrot (*Neophema petrophila*) feeds on fruit of the rose pelargonium (*Pelargonium capitatum*).
Photo – Jiri Lochman

These meetings were attended by operations staff from CALM, other government agencies, local government staff, various community groups and members of the scientific community. Speakers discussed recent research, management programs and community action to help control these weeds. The meetings have allowed exchange of information and an improved response to bridal creeper infestations. Those who attended were motivated to modify existing works programs or start new control work. It is hoped that more meetings can be organised in future to discuss other environmental weeds of concern, such as the arum lily.

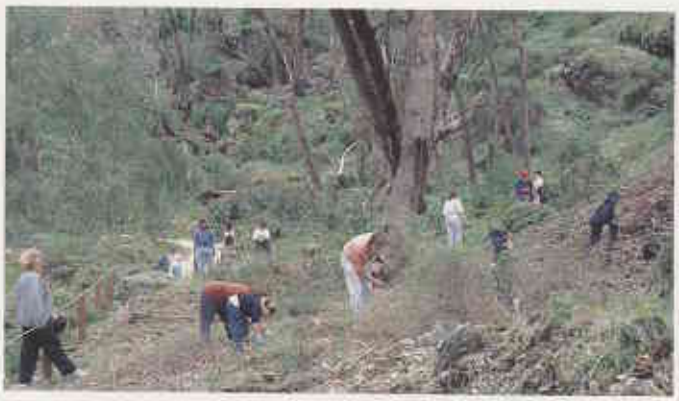
There are a number of techniques available for controlling bridal creeper, ranging from removal by hand to careful application of the appropriate herbicide. Successful control is only assured by diligence, application and persistence over several years. CALM's Katanning office started controlling bridal creeper in 1990. Since then one of Australia's worst weeds has been removed from all Class A reserves across the district. Aboriginal participants in a 1993 training program removed large amounts of bridal creeper from the worst infestations. These are now monitored annually to check for re-invasion of the weed. The Katanning Shire has followed CALM's lead, as have other CALM offices, by spraying bridal creeper on their own reserves.

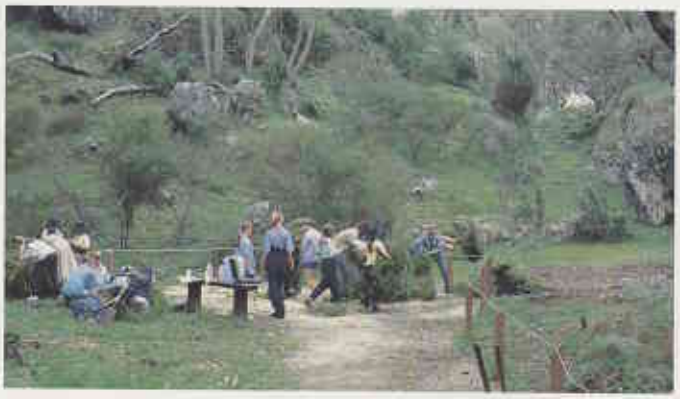
Bridal creeper can be a costly pest in commercial timber plantations. After harvesting a large pine plantation near Harvey Weir in 1995, rapid growth of bridal creeper interfered with CALM's normal pine planting operations. As the plantation was located in a domestic water catchment, restrictions applied to herbicide selection, rate and timing, resulting in the need for follow-up spraying to control the bridal creeper.

At Boomerang Gorge in Yanchep National Park, bridal creeper is being controlled by volunteers. Due to the sensitivity of the nearby swamp, herbicides are not used, and control relies on labour-intensive hand removal of bridal creeper plants. Bridal creeper is dug out by hand and removed to the entrance of the gorge. The weeded material is then taken away by CALM staff and destroyed. Bridal creeper spraying trials have been carried out by CALM in other parts of the park, and a similar program is being tested at Woodman Point in a cooperative project involving the Department and the Friends of Woodman Point.

As for watsonia, weed control programs have been carried out in several areas of significant infestation. These include parts of Serpentine and John Forrest National Parks near Perth, and in the Pemberton District. Volunteers from groups such as the WA Four-Wheel-Drive Club have helped map the distribution of watsonia in John Forrest National Park. The Shire of Plantaganet has so successfully incorporated watsonia control into its management plans that native species now flourish on roadside verges,

An attractive but undesirable garden escapes, invading a roadside in our south-west.
Photo – John Kleczowski/LochmanTransparencies





Volunteers clearing bridal creeper (*Asparagus asparagoides*) by hand from Boomerang Gorge, Yanchep National Park.
Photos – CALM volunteer David Pike

where this pernicious weed had formerly taken over.

Community weed control projects can make a significant difference in managing remnant vegetation. The Darlington Ratepayers' Association and the Eastern Hills Wildflower Society are among the community groups that have demonstrated in their areas that the bush will grow back after the removal of dense infestations of watsonia. This was done by pulling up, or wiping herbicide onto, individual watsonia plants in late winter. Albany and Denmark volunteers and similar groups in other parts of the south-west have also used these techniques to remove watsonia and other weeds, allowing successful natural regeneration.

'Friends' are among the many community groups that are helping to manage remnant bushland. These groups are essential for many types of weed control and bushland regeneration projects. A vital networking role is provided by organisations such as the Environmental Weeds Action Network (EWAN), government agencies, local authorities and members of local communities.

The combined efforts of CALM, other government agencies, community groups and individual volunteers have already shown that these weeds can be controlled, not only locally but on a wide scale. However, efforts must continue to combine all available resources to control these serious pests to help conserve our remnant vegetation and diverse flora.

WHAT YOU CAN DO

Weed invasions by serious weeds such as bridal creeper, arum lily and watsonia seem so large that it is difficult to know where to start. Knowledge, pooling of resources and dedication by everyone involved in bushland management are all needed to ensure success. There is much that you can do in the workplace or in your spare time to reduce the spread of environmental weeds and assist in controlling them. These include:

- 'adopting' a bush reserve with friends or neighbours
- lobbying local government authorities to improve management of their bushland reserves
- joining a bush regenerators group and helping local government authorities or CALM with weed control
- not dumping garden refuse in the bush
- watching out for, and reporting, the spread of new weeds
- hosing down vehicles before leaving main roads and making sure clothing is searched and boots thoroughly cleaned (paying particular attention to the soles and heels) to prevent carriage into the bush of seeds, etc.
- minimising disturbance of plants when maintaining firebreaks
- observing and reporting problem weeds at threatened flora sites
- regular, annual small-scale weed control tasks combined with other duties.

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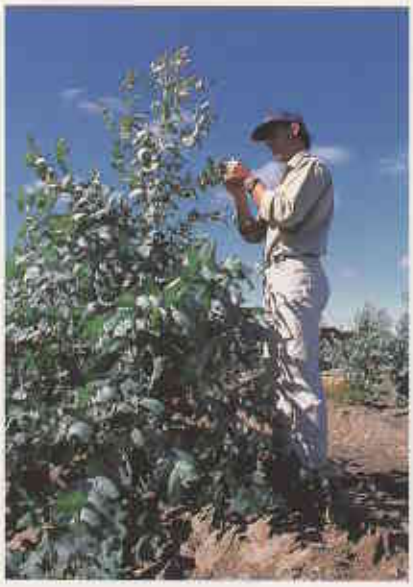
The threat from below . . . How can we defeat our greatest environmental enemy? Read about salinity and what we can do about it on p. 10.



One of the best aids to plant conservation is completely invisible. See our plant DNA story on p. 18.

LANDSCOPE

VOLUME THIRTEEN NUMBER 1, SPRING 1997

Dryandra, one of the last refuges of the native wildlife. Now you can experience this woodland wonderland for yourself. Find out how on p. 36.

Europeans brought alien plants and animals to WA's rangelands, which have since become degraded. What can be done? See p. 42.

How old is the Stirling Range? Read about this stunning area in our story on p. 48.

FEATURES

REGULARS

COVER

The Fitzgerald River National Park boasts a startling array of habitats, mammals, birds and other species. Its wildflowers in spring are often spectacular. Our story on p. 28 is a fascinating tale of variety, beauty, and threat in this aged land.

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