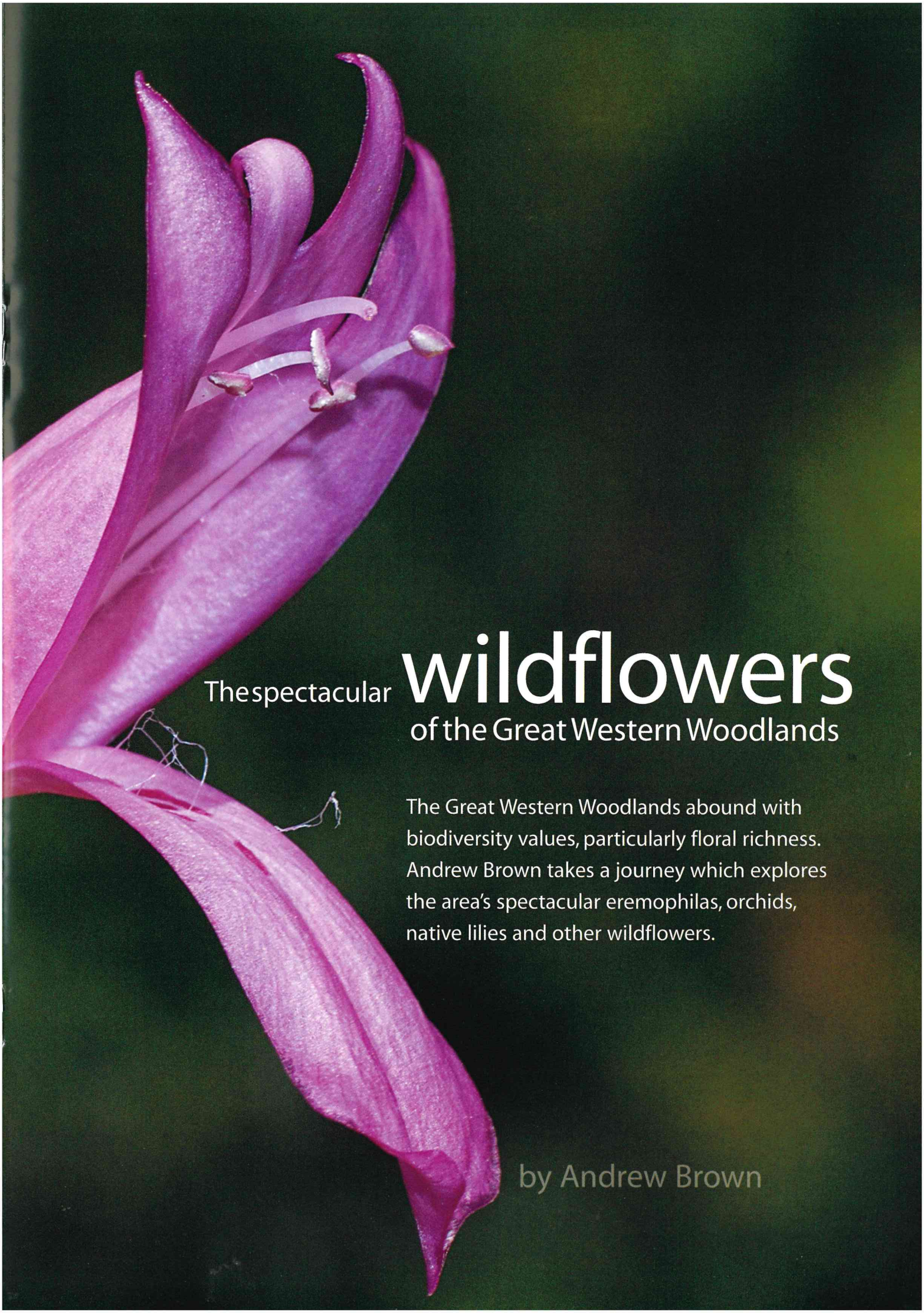

# The spectacular wildflowers of the Great Western Woodlands

The Great Western Woodlands abound with biodiversity values, particularly floral richness. Andrew Brown takes a journey which explores the area's spectacular eremophilas, orchids, native lilies and other wildflowers.

by Andrew Brown

The Great Western Woodlands is internationally significant for its rich biological diversity. It is the largest remaining area of intact Mediterranean-climate woodland left on Earth and covers almost 16 million hectares. The continuous band of native vegetation stretches from the edge of the Western Australian Wheatbelt to Kalgoorlie-Boulder in the north, to the inland deserts to the north-east and the Nullarbor Plain to the east.

The Great Western Woodlands area spans two climatic and botanical zones—the wetter south-west and the arid interzone—contributing to its floral richness, and supports at least 3,314 flowering plant species from 119 families.

While the area is unrivalled for its incredible diversity of eucalypts, perhaps less well known is that it contains many different *Eremophila* species and, despite the semi-arid climate, a number of orchid species thrive in its wetter habitats. Even less well known is that several species of native lily (*Wurmbea*) are found in the area, including one that is yet to be named. Take a drive around the Great Western Woodlands and you can discover these remarkable species for yourself.


*Previous page*
**Main** Narrow-leaved emu bush abounds in the Great Western Woodlands.

**Below left** Wrinkled-leaved eremophila.

**Below right** Small-leaved spotted emu bush.

**Bottom right** Blue-flowered eremophila.
*Photos – Andrew Brown*

## Eremophilas

The Great Western Woodlands is a marvel for the form and colour diversity of its *Eremophila* species. Some 53 named and four unnamed species are known, with most being common and several found nowhere else in the world.

*Eremophila*, which is in the Scrophulariaceae family, comprises some 262 species collectively known as poverty bushes, emu bushes and native fuchias. All are endemic to Australia with the majority (229 species) found in Western Australia. In the Great Western Woodlands they predominantly inhabit woodland areas where, in some places, they form the dominant understorey. They are at their best in October and early November and in some favourable habitats it isn't unusual to see as many as eight or more species flowering together.

A wide range of eremophila species may be seen over a one- or two-day drive between Coolgardie and Hyden. Three areas along this route are described below but eremophilas can be found in most parts of the Great Western Woodlands.

Start by driving down the Coolgardie-Victoria Rocks Road. In this area some 20 species may be seen in a 25-kilometre range. One of the most obvious is narrow-leaved emu bush (*Eremophila alternifolia*). In October and early November the two- to four-metre-high shrubs are covered in large red or pink fuchsia-like flowers. Lower growing but equally attractive is small-leaved spotted emu bush (*E. maculata*

**Top left** Small-leaved spotted emu bush.

**Top right** Kalgoorlie eremophila.

**Above left** Kopi poverty bush.

**Above right** Purple eremophila.
*Photos – Andrew Brown*

subsp. *brevifolia*). The 30-centimetre to one-metre-high plants are found scattered in seasonally moist areas, with each plant having slightly different coloured flowers, ranging from red, pink and orange to yellow. This species flowers throughout the year in response to rainfall. Although most *Eremophila* species have flowers that are varying shades of red or blue, there are a few white-flowered species. One of these, white-flowered eremophila (*E. interstans*), has two subspecies which both grow in this area but flower several months apart—the subspecies *interstans* in September and early October and the subspecies *virgata* in November and December.

The geographically restricted veronica-like eremophila (*E. veronica*) is also found along this road. Growing to just eight centimetres high and 60 centimetres wide, it forms low thickets in open eucalypt woodland. Its flowers, which appear in October and November, have an unusually short corolla with spreading lobes. Another low-growing species that occurs here is blue-flowered eremophila (*E. caerulea* subsp. *caerulea*). It produces very attractive blue or violet flowers in October.

Turn back to Coolgardie and then travel south down the Goldfields Highway towards Norseman. Even when travelling at 110 kilometres per hour you cannot help seeing the attractive blue flowers of violet-flowered eremophila (*E. ionantha*) which often grows in thickets and is at its best in October. Stop to look around and you will be astounded by the number of *Eremophila* species that you will find. These may include wrinkled-leaved eremophila (*E. caperata*), common emu bush (*E. glabra* subsp. *glabra*) and narrow-leaved pixie bush (*E. oldfieldii* subsp. *angustifolia*). One of my favorites is smooth calyx eremophila (*E. psilocalyx*) which grows to three metres high and has numerous white, pink, blue or pale purple flowers in September and October. An undescribed species which grows on the tops and upper slopes of low rocky hills and flowers at the same time of year is Kalgoorlie eremophila (*E.* sp. 'Kalgoorlie'). It was first discovered in 1996 and has since been found in scattered localities between Norseman and Mount Jackson. Plants grow to three metres high and have pinkish-mauve tubular flowers with yellow throats.

Travelling further south, turn west onto the Hyden-Norseman Road and cross Lake Cowan. Growing on sandy rises above the lake bed is one of WA's most attractive tree *Eremophilas*, kopi poverty bush (*E. miniata*). The species grows to five metres high and in October is covered in large pink, orange or yellow flowers. On the other side of the lake system you will begin seeing many other *Eremophila* species. At the lookout on the western side of the lake you will find the attractive purple or pink, prominently spotted flowers of purple eremophila (*E. purpurascens*) which grows to 1.5 metres high and has unusual warty leaves. Nearby is willowy eremophila (*E. saligna*), a narrow shrub to four

**Above left** The Great Western Woodlands is well known for its eucalypts.
*Photo – Marie Lochman*

**Top** Pink candy orchid.

**Above** Sugar orchid.
*Photos – Andrew Brown*

metres high, which produces unusual tubular creamy-white flowers in groups of two or three in October and November. A little further west you will spot the low growing club-leaved eremophila (*E. clavata*), one of the most common inhabitants of tall woodland areas. In good seasons, in October and November, the plants are covered in purple or mauve flowers. Wrinkled-branched eremophila (*E. rugosa*) and broom bush (*E. scoparia*) also grow along this road.

## Orchids

Orchids comprise some 28 genera and 394 species in WA, with most species endemic. All orchids of the Great Western Woodlands are summer dormant, resprouting from an underground fleshy tuber in autumn. Most flower in August and September, although a few species continue into October and early November.

Some 13 genera and 56 species have been recorded from the Great Western Woodlands, a remarkable number given how little rainfall occurs over much of its area. Although a few of these orchids have adapted to woodland and shrubland habitats they are predominantly found in association with granite outcrops and other rocky areas. In these places water collects following intermittent, rare rainfall and the soil stays moist longer than in the surrounding woodlands.

Orchids can sometimes be common, with several species growing in colonies that may number hundreds of flowering plants. One of these is the hairy snail orchid (*Pterostylis* sp. 'hairy') which is common on granite outcrops. Almost as common is granite donkey orchid (*Diuris* sp. 'granite') which forms dense colonies up to two metres across. Its bright yellow flowers are easily distinguished against the grey-coloured granite and green native vegetation among which it grows. Both species are at their best in August.

A good range of orchids can be seen during a one- or two-day drive, starting at Coolgardie and finishing at Lake King. Make your first stop Victoria Rocks south of Coolgardie, where in August and September you will find the lovely green and yellow-flowered clown orchid (*Caladenia roei*). The species often grows in clumps of up to five or more flowering plants and is sometimes quite common. Also

**Above** Peak Charles National Park provides an opportunity to see more than 30 species of orchid.
*Photo – Jiri Lochman*

**Right** Sigmoid spider orchid.
*Photo – Andrew Brown*

flowering at this time is the yellow-flowered vanilla orchid (*Thelymitra antennifera*) which forms colonies in moist soil pockets and the blue-flowered plain sun orchid (*T. petrophila*) which grows as scattered individuals all over the rock. Occasionally these two species hybridise to form attractive orange or red-flowered offspring.

Another good area to search for orchids is McPherson Rock on the Goldfields Highway south of Norseman. Growing in the shallow soil pockets is a range of orchid species, one of the most common being the previously mentioned granite donkey orchid, which is at its best in August. Several spider orchids are also found here and include the western wispy spider orchid (*C. microchila*) and sigmoid spider orchid (*C. sigmoidea*). Both flower in late August and early September. Also flowering at this time is the diminutive little laughing leek orchid (*Prasophyllum gracile*), while in late October you may find the unusual elbow orchid (*Spiculaea ciliata*).

One of my favorite areas to see orchids is Peak Charles National Park. More than 30 species are found there, most growing in shallow soil pockets on the lower slopes of the rock and in deeper soils around its base. The pink candy orchid (*C. hirta* subsp. *rosea*) is common, as is the dwarf zebra orchid (*C. pachychila*), both flowering in August and September. In seasons of good rainfall the rare, currently undescribed granite mantis orchid (*C. attingens* subsp. 'granite') can be found just a short walk from the parking area. The species is known from just three other granite outcrops.

More common is the sugar orchid (*Ericksonella saccharata*). Its small white flowers are often abundant in late August and September. Many *Pterostylis* species are found here and include the shy greenhood (*P. allantoidea*) which grows in small colonies and the midget greenhood (*P. mutica*) which is scattered in a range of habitats. Both species flower in September. Several members of the *P. rufa* complex are also found here and include the spoon-lipped rufous greenhood (*P. spathulata*) and the rufous greenhood (*P. roensis*). The rufous greenhoods flower later than most other orchids, reaching their peak in October.

## Native lilies

Often called early nancies or native lilies, *Wurmbea* species are members of the Colchicaceae family which also includes the common Western Australian genus *Burchardia*. Some 52 species of *Wurmbea* are found in WA, most of which are endemic to the state. The majority are unnamed, having been discovered only recently.

All *Wurmbea* species have an underground corm which is dormant over summer. Plants resprout following autumn rainfall, with most species flowering in winter.

**Above** Wurmbea sp. 'Dundas'.

**Right** Granite nancy.
*Photos – Andrew Brown*

'*Wurmbea* species often inhabit the same areas as orchids and it is not unusual to come across them when searching for orchids. The most common species in the Great Western Woodlands is eight nancy (*W. tenella*). Its small white and purple or pink-mauve flowers can be seen in moist situations in many habitats but are most abundant in soil pockets on granite outcrops. Look on any outcrop in the Great Western Woodlands between late July and early August and you will almost certainly find it.

Another species to look out for is granite nancy (*W. graniticola*), which is only found on granite outcrops. This species, which has gracefully up-curved petals, is abundant in seepage areas on the slopes of Disappointment Rock and around its base in mid August. The form found here has colourful pink-mauve and white flowers rather than the all-white flowers found elsewhere.

In 2004, while walking over a granite outcrop south-west of Norseman, I was surprised to find the small, but attractive, pure white flowers of what appeared to be an undescribed species of *Wurmbea*. Following further surveys in 2009 the taxon, now known as *Wurmbea* sp. 'Dundas', was found to be common on other granite outcrops in the same general area and was confirmed as being new. A good place to see it is on McPherson Rock, where it flowers in abundance in early August.

There are several other native lilies found in the Great Western Woodlands and these include the dainty nancy (*W. cernua*) and the southern nancy (*W. sinora*).

This is just a glimpse of three groups of plants that are dear to my heart. However, there are many more wildflowers in the Great Western Woodlands and there is nearly always something in flower, regardless of when you visit. If the opportunity arises, take the time to explore some of the places highlighted, or stop at random in the Great Western Woodlands and you will be astounded at the range and diversity of its native flora.

Andrew Brown is a botanist in the Department of Environment and Conservation's (DEC's) Species and Communities Branch and a research associate at the Western Australian Herbarium. He is principally involved in helping coordinate DEC's conservation and management of WA's threatened flora. He is the author of several books on WA orchids and co-author of *A Field Guide to the Eremophilas of Western Australia* and *Western Australia's Threatened flora*. Together with Stephen Hopper, Director of the Royal Botanic Gardens, Kew, Andrew has named more than 120 new orchid taxa for WA. He can be contacted on (08) 9334 0122 or by email (andrew.brown@dec.wa.gov.au).

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