

South Africa Exchange – Presentation Summary

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Keywords: industry experience, Australia, IPPS exchange

Summary

Earlier this year I was fortunate to be given the opportunity by the IPPS to do the 3-week exchange in South Africa and give a talk at the 2023 Conference. The purpose of this

paper is to provide a brief introduction to some of the Australian native plants that are common in the different regions of Adelaide, South Australia, and beyond.

INTRODUCTION

I am from Adelaide, the capital city of South Australia. It is the home of the Kaurna people, the original indigenous custodians and First Nations people of the Adelaide Plains, who have lived in Australia and cared for the land for over 50,000 years. Adelaide is a relatively small capital city compared with that of Sydney, Melbourne

and Brisbane – and less well known as a result. It's a beautiful place to live, with the Adelaide Plains wedged between the southern coastline adjoining the Gulf of St Vincent and the Mt Lofty ranges – also referred to as the Adelaide Hills.

I am a lecturer at an institution called TAFESA (Technical and Further Education

South Australia). TAFESA focuses on hands on vocational training. Within our program, we cover a wide range of topics that cover the foundational knowledge needed to work in the nursery and gardens industry. We give students an introduction to botany, soils, and plant nutrition. We teach them about common pests, diseases and weeds, and integrated pest management approaches that can be used to control them. We also offer courses in irrigation, hydroponics, propagation, pruning, turf, machinery, and several other electives.

Adelaide Coastline

The Adelaide Coastline boasts spectacular views and pristine beaches. It is, however, subject to harsh winds, salt spray and erosion, which leads to a need for plants that can handle these conditions. Some examples of plants native to this region include *Allocasuarina verticillata*, *Carpobrotus glaucescens*, and *Leucophyta brownii*.

Allocasuarina verticillata (also known as the Drooping Sheoak) is a nitrogen fixing tree native to southeastern Australia (Fig. 1). The Drooping Sheoak has a

soft look to it, and it whispers in the breeze. One of the indigenous names for the Sheoak can be translated as ‘hair tree’. The European scientific name comes from the Malay word of Cassowary, which is Kasuari. More recently a variation of the Greek word Allos, was added to the start of the name, to indicate that it was ‘different to’ the now separate genus Casuarina. Verticillata refers to the vertical position of the leaf scales on stems, otherwise known as cladodes. I like showing my students this plant and getting them to pull apart the different sections of the brachlets to look at the scale-like leaves, which form a crown shape at the top of the cladodes. The first nations people soaked the cones of allocasuarina in their drinking water to give it a lemon flavour and to add vitamin C (Murphy, 2001). When water is scarce, it can be chewed on to increase saliva flow and reduce the need to drink on long journeys. It is said that you do not get snakes under Sheoaks, because the leaf scales get under the scales on the belly of a snake, so the snakes avoid this area.



Figure 1. *Allocasuarina verticillata*.

Carpobrotus glaucescens (known as angular sea-fig or pigface) is a prostrate, creeping succulent which long trailing stems to 2m in length (**Fig. 2**). It is very useful as a soil stabiliser along sand dunes. The botanical name refers to the edible fruits. It comes from the Greek ‘karpos’ meaning ‘fruit’ and ‘brota’ meaning ‘edible’.



Figure 2 - *Carpobrotus glaucescens*. Image used under license from Shutterstock.com.

The common name refers to the flower, which is said to resemble a pig’s face – although I would say this stretches the imagination almost to breaking point. Both the leaves and the fruits are edible. It can be made into a pickle or a jam, although I have not tried it myself. I have tried the leaves on their own, and they have a slightly astringent, tangy salty flavour.

Leucophyta brownii is a rounded shrub endemic to Australia. It has silver-coloured stems and tiny silver-coloured leaves. (**Fig. 3**). To my mind, it has a coral like appearance. It has the common name of cushion bush because the first nations people used it as a cushion to sit on. It has a lot of ornamental value – it can be trimmed into tight rounded shapes, and the silver of the stems and leaves offer a wonderful colour contrast with other plants.



Figure 3. *Leucophyta brownii*.

Situated between the Gulf St Vincent coast to the west and the Mount Lofty Ranges to the east, the Adelaide Plains covers a large area including Adelaide City and surrounds. As the name suggests, the area is reasonably flat and receives less rainfall

than much of the Adelaide Hills area. The intermediary between the coast and the hills, the plains are home to a wide selection of native plants that can be found not only in the plains but also in surrounding areas.

Some examples of plants native to this region include *Eremophila nivea*, *Maireana sedifolia*, and *Santalum acuminatum*.

Eremophila nivea, commonly known as Silky Eremophila, is a shrub with lovely soft grey foliage (Fig. 4). It is a good



Figure 4. *Eremophila nivea*. Images used under license from Shutterstock.com.

Maireana sedifolia, also known as the bluebush or pearl bluebush, is a shrub endemic to many parts of Australia (Fig. 5). This striking plant offers a mass of soft grey succulent foliage all year round, which is also used in the floristry industry. It is a hardy plant that grows happily in the plains and tolerates coastal exposure. The species name *sedifolia* tells us that it has leaves like *Sedum*.



Figure 5. *Maireana sedifolia*.

attractor for nectar eating birds and insects and produces a mass of purple flowers during Spring and Summer. It is also considered a fire-retardant plant. Some species of *Eremophila* were used as traditional medicines, although I'm not aware of any such uses for the Silky Eremophila.

Santalum acuminatum, also known as Quandong or Native peach or desert peach, is a hemi parasitic tree that produces bright red fruits that are a popular traditional bush food (Fig. 6). It was a valuable food source for the First Nations people; the entire drupe including the flesh but even more so the brain like nut inside. It is a popular plant, but it is difficult to propagate and often you have to go on a waiting list to get the plant from the State Flora nursery in South Australia. It's often grafted, as the fruits can be variable when propagating using seed.



Figure 6. *Santalum acuminatum*. Image used under license from Shutterstock.com.

Adelaide Hills

The Adelaide Hills covers a large area overlooking the Adelaide plains. The Adelaide Hills are known to reach temperatures cool enough for snow in some months, whilst suffering from high risk of bushfires in the summer. Only about 10% of the original native vegetation of the Adelaide Hills remains, and so it is important to ensure that endemic species are continued to be planted in the area (Adelaide Hills Council, 2023). Some examples of plants native to this region include *Arthropodium strictum*, *Calostemma purpureum*, and *Kennedia prostrata*.

Arthropodium strictum is a herbaceous perennial plant (Fig. 6). The scent of the flowers resemble chocolate, caramel or vanilla, which give it its common name of Chocolate Lily (Tucker, 2020). The tubers, which are juicy and slightly bitter, were a traditional food source. The flowers of *A. strictum* are purple and held atop of slender, drooping stalks.



Figure 6. *Arthropodium strictum*. Image used under license from Shutterstock.com.

Calostemma purpureum, or Garland lily, is a perennial flowering herb from the Amaryllidaceae family (Fig. 7). ‘The family is not well represented in Australia and *Calostemma* is the only wholly endemic genus.’ (Australian Native Plants Society, 2023). The leaves die off in spring, and (much like South African Nerines) it often flowers in summer without any leaves. It is highly ornamental and can be used in rockery plantings.

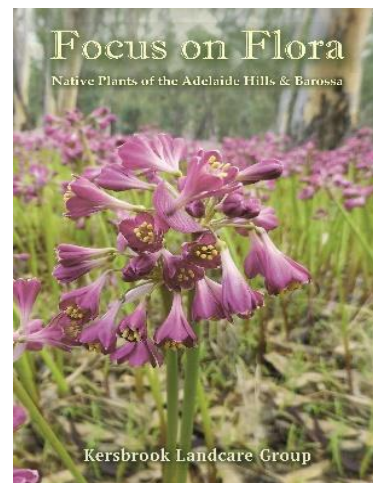


Figure 7. *Calostemma purpureum* featured on the cover of Focus on Flora: Native Plants of the Adelaide Hills and Barossa.

Kennedia prostrata, which has the whimsical common name of Running postman, is a perennial scrambling ground cover (Fig. 8). It has bright red pea-shape/papilionate flowers and undulate trifoliate leaves.



Figure 8. *Kennedia prostrata*. Image used under license from Shutterstock.com.

Botanical Gardens of South Australia

Adelaide is home to three botanical gardens, although I'm going to mention four.

First, the Adelaide Botanic Gardens, is located within the city centre and home to 50 hectares of gardens, which includes the last museum of economic botany in the world. It displays a permanent collection of about 3,500 objects exhibiting the practical, medicinal and economic use of plant materials. The pomological collection is perhaps the highlight of the museum, which features 129 pears and 192 apples (including some varieties that no longer exist) expertly made out of papier-mâché by artist Heinrich Arnoldi. The models were acquired for the museum in the late 1800s by its director, Dr. Richard Schomburgk, a German immigrant. There is another similar collection of 210 papier-mâché models showcasing fungi in different stages of growth.

The second, the Mount Lofty Botanic Gardens is dedicated to the cultivation and display of cooler climate plants and is well known for its rich display of autumn colours. It is made up of 97-hectare of gardens, which include the Heritage Rose Garden, the Woodland Garden (which is home to a variety of Northern Hemisphere tree species), Fern Gully, Rhododendron Gully, South American Gully, Southeast Asian Gully (where Camellias are the dominant feature), and the West Asian Gully (which boast a collection of Viburnum species).

The third, and perhaps most interesting to those with an interest in Australian plants is Wittunga Botanic Gardens – which includes 13-hectare of gardens comprised of water-wise plants from both Australia and South Africa, with a focus on the *Proteaceae* family. It has brilliant displays of

Ericas and *Proteas* in spring (**Fig. 9**). There is a Fynbos section which includes approximately 50 species and cultivars of *Ericas* (“heaths”). Australian *Hakeas* and *Banksias* can also be found throughout Wittunga.



Figure 9. Protea in bloom at Wittunga Botanic Gardens. Photograph by Stephanie Hastie.

Last but not least, is the Arid Lands Botanic Gardens. Although these particular gardens are remote – approximately 3.5 hours away from Adelaide - the arid lands are home to thousands of highly evolved plant communities that are specially adapted to thrive in an environment where temperatures are extreme and drought can last for decades. A testament to the vastness of the outback, these gardens are the largest of the four – comprising 250-hectare of gardens. I have only visited these gardens once, it was my first stop on a 4-day drive to Darwin, in the northern territory, and it was during a sweltering heatwave in 2019 and on a day when the temperature at the Gardens was about 46°C, which meant we only spent about 15 minutes walking around the garden before having to seek the respite of shade. Nevertheless, the Arid Lands Botanic Gardens fulfil the important role of educating us about the importance,

value and beauty of these fragile and precious ecosystems. Likewise, all four botanic gardens help to bridge the connection between plants and people, that has been mostly lost in the modern world – the concrete jungle – that many of us live in today.

Eucalypts

South Australia is also home to the Currency Creek Arboretum of eucalypts. It holds the largest collection of eucalypt species in the world. The eucalypt collection, which was established in 1992, now includes 1,000 species and subspecies in the genera *Eucalyptus*, *Angophora* and *Corymbia* (which we refer to generally as ‘eucalypts’). It is a privately managed arboretum and it used for scientific research purposes, although it is open to the public over two weekends each year (in Spring and in Autumn). In South Africa you are probably familiar with *Eucalyptus grandis*, native to NSW and Queensland, and *Eucalyptus camaldulensis*, which is native to many parts of Australia including my home state, and a significant weed here in South Africa.

However, with over 700 *Eucalyptus* species, 9 species of *Angophora* and about 100 species of *Corymbia* - there is significant variation among the Eucalypts, and many different species to fall in love with, and so I wanted to talk briefly about a few of my favourite species.

Being a horticulturist, I’m mostly looking at plants from an ornamental perspective. In Australia there is, sadly, a growing trend of larger houses and smaller gardens. And, even in a larger garden, fitting in large eucalypt species can be difficult or undesirable. Hence, my favourite species mostly fall into the mallee category – which tend to have an open and wispy

habit, grow to a reasonable height of usually no more than 10 meters, and play well with others (that is, you can plant an understory of other species underneath them).

Having said that, the first species I want to mention is *Angophora subvelutina*. *Angophora subvelutina*, commonly known as the broad-leaved apple, is a species of woodland tree that is endemic to eastern Australia. The bark is rough, fibrous to flaky, and grey in colour. It has opposite, usually sessile, leaves – which have a lovely somewhat lime-y green colour, sometimes more blueish grey, and illuminate beautifully in the presence of sunlight. The species is summer flowering, with white to creamy white flowers. The branches do not tend to get too large, which means they pose less of a safety risk compared to the larger eucalypt species in terms of falling branches. The branches also tend to have an interesting slightly gnarly and bent appearance, giving an impression of wizened age. It is a medium-sized tree to 20 meters tall, so not overly suited to small backyards, however it can be trained as a mallee once established by frequent cutting and pruning of main stems. It is a nice landscaping tree and, back home, I hope to see it used more frequently as a street tree.

Eucalyptus caesia is another on my list. It goes by the common names of Silver Princess or Gungurru (**Fig. 10**). *Eucalyptus caesia* is a mallee species endemic to Western Australia. It is an incredibly attractive, highly ornamental species. It grows up to 15m tall, has an open slightly weeping habit. It flowers with red- pink filaments and yellow anthers, on ghostly white pedicels and peduncles, in winter. It has lovely reddish-brown peeling minni richi bark on the trunk and branches. The juvenile foliage is glossy green, with a rounded cordate

shape. The adult leaves take on the classic lanceolate to falcate shape mostly commonly associated with species of Eucalypt, and they are usually a duller grey-green colour.

It is the mix of the stunning large hot pink flowers, the powdery white to glossy red of the new stems and the reddish brown of the mature trunk and branches, that I love. And the sparse habit makes it workable in a smaller space.



Figures 10. *Eucalyptus caesia*. Photographs by Stephanie Hastie.

Eucalyptus sepulcralis (known commonly as the Weeping Mallee) is a mallee that is another species that is endemic to Western Australia. It is a mallee that grows to 7 m tall. The stems are slender, sparse, and pendulous. It gives it a lovely weeping, wispy habit that moves elegantly in the breeze. It has smooth bark, glossy green leaves, and pale-yellow flowers in summer.

Perhaps my favourite species of eucalypt is *Eucalyptus minniritchi*, which may be a synonym of *Eucalyptus orbifolia*, commonly known as the Round-Leaved Mallee. Both names tell you a bit about the features of the plant. Like the *Eucalyptus caesia* it has the lovely reddish-brown peeling minnirichi bark on the trunk and branches. Its flowers are yellow and appear anywhere from late autumn to winter to

early spring. The greyish green foliage keeps what it characteristically juvenile growth for a eucalypt – it remains rounded to heart shaped. It is a mallee that grows to 5 m tall, but with canopy often reaching to ground level – giving it more of a shrubby look. Like the other eucalypts I’ve mentioned, it forms a lignotuber and it can be coppiced to keep it smaller and to refresh the plant.

I really enjoy the leaf litter that falls from the *Eucalyptus minniritchi* – because it turns a lovely golden brown and the rounded shape almost looks like a coin or large heart shaped confetti (**Fig. 11**). It is native to Western Australia and central Australia.

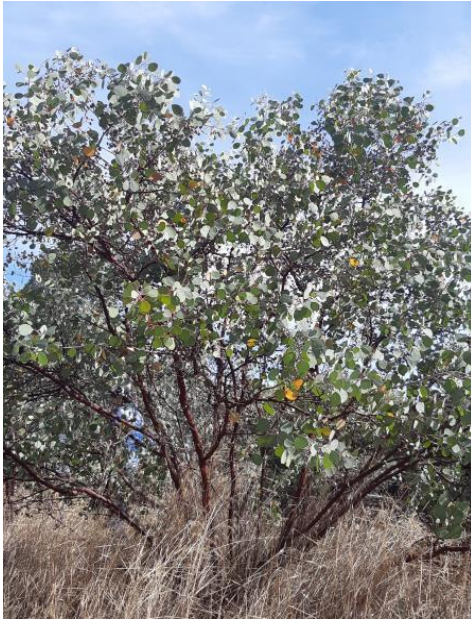


Figure 11. *Eucalyptus minniritchi*. Photograph by Stephanie Hastie.

Conclusion

I would like to finish by saying, having been fortunate enough to attend both the 2023 IPPS conferences in Durban and in Geelong, I would highly recommend the South Africa exchange to any young propagators (from South Africa or Australia alike). My heartfelt thanks go to the IPPS and all the people who contributed to make it happen. It was a pleasure to meet so many passionate plants people.

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