How to use this guide

Plants listed in this guide are a collection of those considered to be best suited to Alice Springs gardens. Most of the listed species are local to the region, though a few non-local Australian plants that grow well in Alice are also included. This guide does not include any non-Australian plants even though some of these can be grown in Alice conditions. The purpose of this guide is to encourage wider use of local native species, to create gardens better suited to local conditions and ones that fit better with our bushland setting.

The plant list is divided into five different sections:

- large and medium-sized trees (6-30 m);
- small trees or large or medium-sized shrubs (2.5-6 m);
- small shrubs (1-2.5 m);
- groundcovers, forbs and climbers;
- grasses, lilies and sedges.

Within each section plants are listed alphabetically according to their scientific name (*i.e* all gum trees are *Eucalyptus* or *Corymbia* species, while all wattles are *Acacia* species). Common names are also given for every plant that has one. The region that each plant is native to is given as either “L” for plants local to the Alice Springs municipality, “CA” for plants native to the Central Australian region, or “Aus” for plants native to other Australian regions.

How fast a plant grows under standard Alice Springs garden conditions is listed under the “Growth Rate” column as either “S” slow, “M” medium, or “F” fast, or some range between these values. A silhouette of the approximate shape of mature plants is given in the “Form” column, to show whether a plant is most often multi-stemmed, narrow, broad crowned or branching from the ground. These features are important in selecting plants for particular garden positions or for choosing plants with good screening potential.

The average height and spread is given for each species, and you will notice a range is given to account for the different soil types and growing conditions in Alice gardens. It is sensible to consider the maximum potential size of each plant in selecting a species. In the “Notes” column information about flower colour and timing, and particular uses or pest problems for each species is included.

Once you have developed a shortlist of selected plant species for your particular garden, it is useful to try to look at mature plants to see whether you like their form or characteristics. The Olive Pink Botanic Garden and the Alice Springs Desert Park both have extensive plantings of local native species. There are several books that have photographs of many of the plants listed in this guide. A selection of these book titles is given in a later section.

Several of the plants included in this list are not yet in commercial nursery production, but can sometimes be found in specialist nurseries (such as Tangentyere Nursery) or at plant sales held periodically by groups like Greening Australia, Olive Pink Botanic Gardens or the Australian Plants Society. In some cases it is relatively easy to grow plants from seed or cuttings. Notes about propagating local plants are given in a later section.

Why grow local species? – the importance of backyard biodiversity

This guide contains predominantly native plants local to the Alice Springs or Central Australian regions. One of the main reasons for choosing local native species is that these plants best suit the local soils and climate and are therefore more likely to thrive in Alice Springs gardens. It is relatively easy to pick the non-local plants in Alice gardens – they are often the ones looking sickly, suffering die-back, keeling over in the hot summer conditions, or getting blitzed by grasshoppers or winter frosts.

By growing species from the local area the water required to establish plants is generally much less than that needed by eastern states plants or plants from outside of Australia, and most local trees and shrubs do not require ongoing summer watering once they have established.

Local species also provide important habitat for the insects, reptiles and birds that live in our region. By planting a variety of local grasses, shrubs and trees it is possible to recreate natural habitat areas and lure native birds and reptiles into pet-free gardens. Backyard biodiversity in the Alice region is relatively high compared to other urban areas – it is not uncommon to get birds like white-browed babblers, mistletoe birds, western bowerbirds and rainbow bee-eaters visiting gardens in the municipal areas.

To increase biodiversity in your backyard plant a mix of different local species of varying height, form and flowering time, and retain areas with good amounts of leaf litter and fallen branches for skinks and geckoes to shelter in and for ground feeding birds to forage in. By keeping cats and dogs inside or in fenced areas native birds and reptiles will stand a better chance of surviving in garden areas.

By managing chook and pet feeding areas it is possible to reduce the number of feral spotted turtle doves (one of only two introduced birds established in Alice Springs) using your garden, and thereby encourage native pigeons such as topknots (crested pigeons) or peaceful doves back into your garden.

Native ants are an important part of backyard biodiversity, they convert plant material to nutrients that are made available to garden plants, other invertebrates or reptiles that feed on ants, while meat-eating ants clean up a lot of dead insects or birds in bushland and garden areas. A non-native ant – the big-headed ant that has recently invaded Alice Springs gardens has a devastating impact on native ant and insect communities. Big-headed ants are attracted to moist areas around dripper lines and pot plants, and often build their nests in the cracks in paving or concrete paths. These ants are smaller than native meat ants (around 1-3 mm) and are reddish-brown in colour and are often quite slow moving compared to native ants. The soldier ants (the ones guarding the nests) have very big heads relative to their bodies. It is important to treat any confirmed nests with the recommended poison (more information can be found in a fact-sheet produced by CSIRO or the Threatened Species Network).

Establishing and maintaining a native garden

Once you have selected which species suit your soils and the particular areas in your garden, it is important to choose healthy specimens from nurseries. Wherever possible choose actively growing (with fresh tip growth) tubestock, as smaller plants have a better chance of establishing well. Avoid the temptation of choosing advanced plants to get an instant garden effect, as these plants often have poorly developed root systems and can suffer greater stress than smaller plants when you plant them into your garden.

Dig a hole greater than the depth of the plants' root system and loosen up the soil further down also. Set the plant (still in its container) into the hole to check the depth – you want the plant to finish up level or slightly below the surrounding ground level with a thin layer of soil over the top of its existing container soil level.

If the soil is not moist already (which it isn't most of the time in Alice Springs!) fill the hole up with water and wait till it drains away completely. If it is really dry it is worth repeating this a couple of times to make sure the soil profile is wet to a greater depth. Don't add potting mix to the soil – most potting mix has lower nutrient levels than our local soils (apart from sandy soils) and can actually hold less moisture than clay-based soils. If you have heavy clay soils now is the time to mix in a bit of gypsum to improve drainage (it doesn't harm plant roots or change the soil pH), or you can mix in well-rotted compost (or a fertiliser tablet) to boost the fertility of your soil.

It is a myth that all native plants' roots need teasing out when you plant them – it is generally better to minimise any root damage to tubestock plants when planting by carefully tapping them out of the container and keeping the soil intact around the roots. If you are planting natives grown in larger containers carefully cut away the container and check that the roots are not completely compacted (*i.e* there should be some give if you gently push against the root mass). Some plants like bottlebrushes or tea trees have fibrous root systems that "mat" up when grown in containers – this does not necessary mean the plant is root-bound and unhealthy. If the plant has active new growth then its root system is generally healthy, in some cases it is worth carefully easing out the lower bottom part of a compacted root mass or gently running a knife down the length of the root mass to encourage roots to spread out once planted.

Pack the soil back around the newly planted seedling so that there are no air pockets and water the plant in with about a bucket of water. Add a layer of mulch (leaf litter, stones, bark etc) around the plant, keeping the area immediately around its stem free. Mulch is critical for Alice Springs gardens to lessen the intense surface heat and evaporation that occurs over the summer months. Avoid using black plastic as a weed deterrent as all the invertebrates and important fungi in the soil cook under black plastic in summertime. If you have aggressive weeds (like couch) that you have not controlled prior to planting, use a permeable weed mat fabric and dig your planting holes into areas cut out of the weed mat.

Drip irrigation is a fairly water economic and simple way of ensuring your new plants get enough water over their establishment phase. It is important to have a separate drip line just for newly planted native plants, as their water needs are quite different from established plants, or high water-use annuals or non-native plants. It is also important to routinely check the amount of water being delivered to plants in your garden and to gradually lessen the amount of water native plants get as they grow and establish bigger root systems. It is also important to place

the dripper (or multiple drippers to establish larger trees) so that you encourage the root system to spread out away from the trunk to anchor the plant well and to provide greater root surface area for plants to feed from. Some plants like emu bushes (*Eremophila*) have very low water requirements once they are established (generally after one year) and it is important to reduce the amount of water these plants get so that they don't die from over-watering (often seen as plants generally getting sickly, yellowing leaves, and leaves being lost from the bottom of the plant first).

Native plants planted in the summer months will need to be watered every second day (about 3-5 litres per plant) or every day when it is very hot. After the second month this regime can be reduced to every third day and over the cooler months further reduced to once a week (5-12 litres) or once every ten days. As every garden situation is different you will need to modify this to suit your own situation. Regularly check new plantings, if plants are water-stressed their leaves will wilt or be curled up. Make sure you avoid giving plants a shallow watering – this only encourages roots to stay on the surface so that plants are not so well anchored and more susceptible to heat stress when soil surface temperature sky rockets on really hot days.

Managing pest and disease impacts

Healthy, strong plants selected on the basis of their suitability to local soil and climate conditions are not usually susceptible to diseases provided their watering regime and general growing conditions are ideal. In Alice Springs there are not many of the fungal or bacterial diseases that affect plants in wetter regions, and few native plants are prone to these problems in Alice gardens.

Several of the huge variety of native invertebrates we have in the region can sometimes cause problems in garden settings. Leaf-eating insects like grasshoppers, beetles and caterpillars are attracted to the fresh growth of watered garden plants. Infestations of leaf-eating or sap-sucking (aphids, crusader bugs, lerps, scale, mealy bugs, mites and thrips) insects can generally be controlled without chemicals. Regularly checking plants and squashing insects or using a hose or jet of soapy water to dislodge insects is quite effective.

If your plants are being besieged by caterpillars and manual control is no longer an option you could try using Dipel a commercially available bacterial spray that is lethal to caterpillars but harmless to other insects or to birds or frogs that might feed on infected caterpillars. Low toxicity insecticides such as garlic or pyrethrum sprays can be used to control most insects, but they do not discriminate between pest or benign insects, so use with caution. Webbing caterpillars can become a particular nuisance on some plants like *Melaleuca* and tea trees. The caterpillars live together inside the webbing near the base of plants and come out at night and feed on leaves. The best control is to rip away the webbing, and squash the caterpillars. Most contact sprays like pyrethrum are not effective as the webbing repels sprays.

Scale infestations (small, waxy, dome-shaped bumps along stems or under leaves) sometimes occur on native plants (particularly gum trees, bottlebrushes, some wattles or cycads) that are under some other stress (often plants growing in heavy shade are more susceptible). Scale can be removed by rubbing your hand along branches and squashing their protective covering with your fingers (there is usually a reddish coloured mess once you squash live scale). Bad

scale infections may need to be treated with a white oil spray, but avoid doing this in the heat of the day as plants will suffer.

Lerp infestations refer to the nymph of a psyllid insect (a native sap-sucking insect) and its protective covering that can cause brown patches on the leaves of gum trees. Generally there is no need to worry about lerp as their impact is purely visual and rarely affects the growth of a plant. The whitish covering over the psyllid nymph is sugary and used to be collected by Aboriginal people as a sweet treat or to make sweet drinks when mixed with water.

Nematodes are another group of animals (in a different phyla to insects) that can cause problems in plants. These microscopic thread-like worms can parasitise the roots or shoots of plants and cause severe growth problems and general ill-health in plants. It is not easy to diagnose nematode damage in growing plants, but once a plant dies it is possible to look for gall-like growths (or a wart-like appearance) on the root system. Some native plants are more susceptible to nematode attack than others (susceptible plants include some species of *Grevillea, Myoporum, Prostanthera* and *Eucalyptus*), and there is no feasible treatment of affected plants. It is sometimes possible to counteract the impact of root nematode damage in a plant by enriching the soil with well-rotted compost. Any dead plants that you suspect are infected with nematodes should be burnt to prevent further proliferation of nematodes in the garden.

Galls are the disfiguring growths sometimes seen on leaves, stems or flowers of native plants (like wattles and gums) and are caused by the plant responding to secretions made by various insects like wasps, flies or moths as they deposit eggs just below the plant surface. The gall develops around the growing larvae and protects it from birds and other insects. Galls rarely result in plant death, and the best control is simply to remove and burn affected plant material.

Borers can cause the death of mature trees or shrubs by drilling into plant tissue responsible for conducting water and transferring nutrients from the roots and leaves to the growing tips of plants. Borers are the larval stages of some moths or beetles, and most often affect plants that are already damaged or under stress. Telltale signs of borer infestation are a small pile of sawdust at the base of a plant or in the fork of a branch, or gum secretions made by plants in an attempt to clog up active borer tunnels. Early infestations can be treated by probing the tunnels with wire to squash the larvae, or using a syringe to inject a contact poison like pyrethrum into the holes. If a tree is severely damaged and suffering tip die back it is more sensible to remove the tree and take all affected material off site or burn it to reduce the likelihood of build up of adults.

Salty soils like those around the Sadadeen area in Alice Springs can have a very negative impact on some native plant species. Signs of salinity damage in plants include poor growth, leaf yellowing or blistered brown edges on leaves. There is no easy treatment for saline soils, and the best management is to select plants that can tolerate higher salinity levels – such as those gum trees, *Melaleuca* species and plants from the saltbush family (*Atriplex, Chenopodium, Einadia, Enchylaena, Maireana* and *Rhagodia*) that occur naturally around salt lakes or on saline soils.

Propagating local native plants

Many native plants are relatively easily propagated from seeds or cutting material. To get general information about how to go about collecting, storing and growing native seeds or striking cuttings think about joining the Alice Springs Australian Plants Society or attending workshops run by Greening Australia, or refer to one of the many fine reference books on the topic. This section lists some of the plant families easily grown from seeds, or those hard-to-buy plants that can be propagated by seed. A handful of species that strike readily from cutting material is also listed.

Native daisies

Many of the gorgeous short-lived paper daisies and biennial or perennial native daisies can readily be grown from fresh seed. Seed (including the feathery bit that helps the seed get picked up by winds) needs to be ripe (it pulls away easily from the flower and is plump) and is best sown onto bush sand in containers in autumn or winter. Cover the seed slightly and keep watered and in a sunny spot. Commercial seed of some native paper daisies is also available, and sometimes daisies will germinate in sands or loams bought from landscape suppliers for creating garden beds.

Native grasses

Grasses like native lemongrass, windmill grass, purple plume grass and cotton panic grass are easily grown from seed. Harvest seeds as they mature and fall from the stems over the hotter months. Sow in autumn or winter by scattering the seeds onto trays filled with seed raising mix and covering with a small amount of mix. Water the trays and leave these in a sunny spot.

Gums, tea trees, bottlebrushes and honey myrtles

Seed from these plants are held in capsules that become woody as the seed ripens. Harvest the capsules once they have become brown and woody (this usually takes up to a year following flowering) and store in a paper bag in a sunny place to get the capsules to release their seeds. The seeds are generally black or dark brown and mixed up with a lot of non-fertile seed or chaff. You can remove the chaff by blowing gently over the seed, as the seed is heavier and the chaff generally blows away (the same principle is used by Aboriginal woman yandying seed). Seed from many of these plants is quite fine, and can be hard to sow sparsely. Sow into seed trays filled with seed raising mix and cover slightly. You will probably have to thin out seedlings before you transplant them.

Wattles, cassias and native peas

This group of plants produces seed pods that brown off once they are ripe (the seed also changes colour from green to brown, red or black as it matures). The seeds have a hard seed coat that needs to be softened by pouring near-boiling water over the seeds and letting them soak overnight. Seeds are ready to plant when they swell in size. You need to be careful handling swollen seeds as they are easy to damage. Sow directly into tubes filled with seedling mix or into a seed tray. Sturt desert pea can be sown directly into peat-pots and these can be planted into the ground once the seedling is grown to avoid damaging the root system.

Quandongs

Quandong fruit have a large woody seed inside. The best way to germinate quandong seeds is to get 1-3 year old seed and carefully crack the woody seed-case in a vice and then put the seed into a zip-lock bag of moist vermiculite and keep in a dark place for a week or two until the root emerges. Plant into a pot which has a small grass or pea plant growing in it – quandongs are semi-parasitic and benefit from a host plant. Young quandongs are susceptible to fungal diseases so some growers soak the seed first for 30 minutes in a 10 % solution of household bleach. Rinse before planting the seed out.

Dipteracanthus, Stemodia and *Myoporum*

These three genera are probably the most easy to strike from cuttings of our local native plants. Select healthy growing material in the cool part of the day in late summer or autumn. Use clean sharp secateurs to cut roughly 30 cm pieces off the tips of the branches. Remove the last 2 cm of the tip, as this is too soft to strike generally. Store the material in wet newspaper inside a plastic bag in the fridge or an esky until you are ready to do the cuttings.

Cut roughly 10 cm segments just below a leaf node, and remove the lower leaves using sharp snippers or a razor blade – avoid tearing the stems. Fill a couple of 10 inch pots with sharp river sand or perlite and water these well. Dip the ends into plant rooting hormone (available at nurseries) and make a hole (roughly 6 cm deep) in the sand with a pencil or stick and carefully place the cutting into the hole and pack the sand around the base. Once you have put a number of cuttings into the pot, water it well and place in a sheltered spot where you can make sure the pot stays moist. Cuttings from these plants are likely to strike within four weeks. Once the cuttings show new tip growth they can be carefully transplanted into pots and grown on till they are ready to plant into the garden.

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Further reading

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