

Bushland Newsletter

SPRING 21



On the go with Emily

Lockdowns have once again forced some big changes and for many it has been particularly frustrating this time around. I know I have personally struggled to adapt to the significant change to my routine which came about with the suspension of our beloved Bushcare program. No getting out to interact with all our Bushcare volunteers, no regular work on site and no biscuits at morning tea! Though I've likely had it easier than some, what has helped me through is being able to get outside and enjoy the benefits of the hard work we have done. Winter has helped keep weed levels low and all our recent plantings appear to be thriving! Taking a step back to consider the future of our sites and how to best achieve the outcomes we all desire, including potential new techniques, ways to connect and educate our community, will hopefully prove greatly beneficial in the months and years to come.

Emily Strautins
Randwick City Council
Bushland Officer

WHAT'S ON



September is National Biodiversity Month

The Australian Government is looking at biodiversity from numerous angles, and highlighting it to the community through National Biodiversity Month is just one. From research through to wildlife corridors, there are a range of programs aimed at protecting Australia's unique biodiversity. If you've ever wondered "How can I help protect biodiversity?" the Department of Agriculture, Water and Environment suggests the following practicable steps:

- Create a natural habitat in your backyard
- Get rid of weeds
- Be a responsible pet owner
- Reduce, reuse and recycle
- Start your own compost bin
- Only put water down the drains
- Be an informed seafood eater
- Understand what you can and can't take with you when you travel
- When you're sailing, don't get too close to whales and dolphins.

To find out more head to: environment.gov.au/biodiversity/biodiversity-month



18-24 October – Aussie Bird Count

The #AussieBirdCount is a great way to connect with the birds in your backyard no matter where your backyard happens to be — a suburban backyard, a local park, a patch of forest, down by the beach, or the main street of town. You can count as many times as you like over the week, make sure that each count is completed over a 20-minute period. The data collected assists BirdLife Australia in understanding more about the birds that live where people live.

For more information on how to take part, head to: aussiebirdcount.org.au



Nursery Update

Construction work at the community nursery has been disrupted by the Covid lockdown but the nursery is hoping to re-open by mid-October.

The Eastern Sydney, Sunshine Wattle

Once known as the Port Jackson Wattle, this plant has always been strongly rooted in place with an extremely narrowly defined distribution. Recently this close connection to place has been reflected within a change to the scientific name given to the Sunshine Wattle, now called *Acacia terminalis* subsp. *Eastern Sydney* (changed from *Acacia terminalis* subsp. *terminalis*). It is unusual for scientific names to contain place references, however this reflects the extremely limited distribution of this endangered species, found only from the northern shores of Sydney Harbour to Botany Bay. Some of the largest remaining populations share our home in Randwick City. A very special neighbour indeed.

Unusually for Australian wattles, this species retains its fern-like leaf form, known as a 'bi-pinnate' leaf arrangement. This leaf form is usually only found in juvenile plants, which is replaced by a more typically leaf-shaped phyllodes as the plant matures.

You may have noticed that even in winter, wattles are bursting into flower. This is highly unusual in the plant kingdom, but for this reason wattles can be a life saver for insects and other animals that might otherwise go hungry. This is just one reason it is so important to protect our local species. Randwick Bushland team have been working for many years to ensure this precious wattle continues to flourish for generations to come.

What's in a name?

Happening largely unobserved by the masses, a battle has been waging among botanists from around the world to decide which continent will be able to continue to call their acacias 'Acacia'. This comes as a result of a global push to standardise the scientific names for all species, be it plant, animal, insect, fungi etc. The aim of the project is to reduce potential confusion arising from names that have been given to more than one specific species. Therefore, if a scientist writes a paper about one species, there will be no doubt about whether they are also referring to an unrelated and genetically distinct species found elsewhere which may have previously been known by the same name.

As the acacias located throughout Australia, Africa, Madagascar, the Americas and across the Asia-Pacific are not related, something had to change! Unfortunately, the alternative names suggested, such as 'Racosperma', were not particularly appealing, perhaps fuelling some of the bitterness of the debate.

Of the roughly 1350 global species of acacia, 960 species are found in Australia. This fact played a large role in securing the name for Australian species only. Australian plant taxonomists are jubilant!

abc.net.au/science/articles/2003/07/03/2578547.htm



Sunshine Wattle (*Acacia terminalis* subsp. *Eastern Sydney*)



Wattles can be a lifeline for pollinators in winter

Did you know:

At any given time of the year, there is some type of wattle flowering somewhere in Australia.

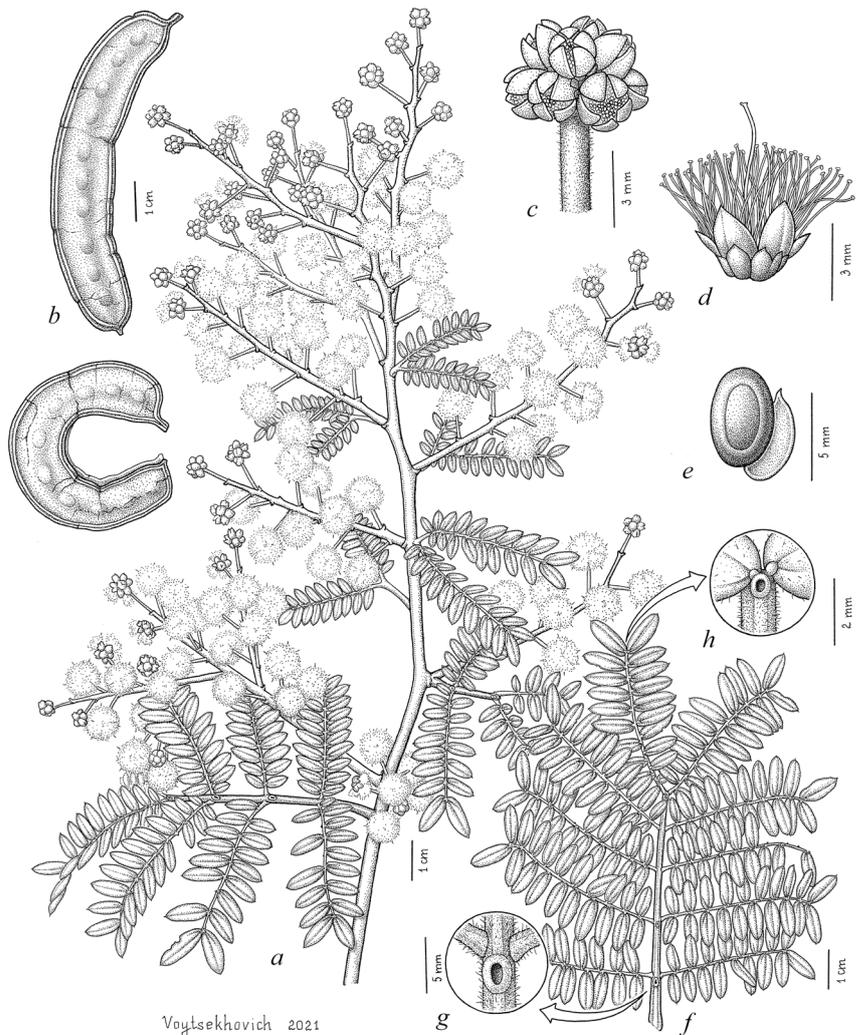


About Anna Voytsekhovich

Anna Voytsekhovich holds a bachelor's degree in Biology and Ecology, and a PhD in Botany. She is a professional scientist, scientific illustrator, botanical artist and wildlife illustrator, and is also known in scientific circles for her books and articles. She resides in Sydney and works on restoration of critically endangered plant communities. She is a member of Botanical Art Society Australia and since 2019 has been teaching botanical and wildlife art for the NatureArt Lab in Canberra, combining art and science in her tuition. Some of you may also remember Anna from her fascinating fungi talk at the Bushcare Christmas party in 2019.

About the illustration

"The illustration is done in ink on paper (in stippling technique with outlining, which means thousands of tiny dots and a few lines). My drawing depicts the specimen from Chifley and was drawn from both live specimen and photos (no plant was harmed during the process). I would also like to express my deepest gratitude to Alex Bamforth, for consulting me on a few very important morphological aspects of that subspecies and helping my artwork get the required scientific accuracy. My whole idea of participating in this competition was not about winning but about getting more attention to this wonderful yet threatened plant. And I really hope that eventually my drawing will resonate (somewhere, somehow), as it will be exhibited in three Botanic Gardens (first in the Royal Botanic Garden Sydney, then in Mount Annan Botanic Garden and Blue Mountains Botanic Garden) and online exhibition. So eventually we might get more attention to *Acacia terminalis* subsp. *terminalis* from the public."



Anna's illustration of subsp. *Eastern Sydney* Sunshine Wattle

The Margret Flockton Award

Margaret Flockton (1861-1953) was an Australian artist who was the first scientific botanical illustrator of the Royal Botanic Garden Sydney. She illustrated "The Forest Flora of New South Wales", "A Critical Revision of the Genus Eucalyptus" by the botanist and forester Joseph Henry Maiden (the director of the Botanic Gardens). The Margret Flockton Award, was created in 2004 in her memory, and two prizes of \$5000 and \$2000 are awarded annually for excellence in scientific botanical illustration. Each year the best scientific botanical illustrators from all over the world participate in the competition.

This year the competition was particularly tough with 103 artworks from 79 artists from 25 different

countries submitted. One of the submitted illustrations represented *Acacia terminalis* subsp. *Eastern Sydney*. This subspecies hasn't even been described yet, but it is already on the brink of extinction because of losing its habitat. The artwork was submitted by the Sydney based professional artist and scientist Dr Anna Voytsekhovich, who also is a bush regenerator working as a contractor for Randwick City Council. The artist was pursuing only one goal - to attract as much attention to this threatened plant as possible, and we really hope it worked as the illustration was nominated Highly Commended!

To see more visit:

botanicalartsocietyaustralia.com/Anna-Voytsekhovich

natureartlab.com.au

[instagram.com/trebouxia](https://www.instagram.com/trebouxia)

Permaculture gardening

In the first of a two-part series, we explore the principles of permaculture in garden design. Permaculture, a combination of the words permanent and culture, is an approach to land management and philosophy that adopts arrangements observed in flourishing natural ecosystems.

Using the principles of permaculture in the garden can bring rich rewards in the form of a healthy sustainable ecosystem that benefits not only you but the birds and insects that will make the garden their home.

Permaculture uses natural patterns to create functional, productive systems that require minimal effort to maintain once established. Nature recycles, upcycles, regenerates and restores, and by adapting these processes your garden can become self-sustaining. Anything we add to this environment will have a cause and effect on all the inhabitants.



Insect hotels can be made of many recycled materials and provide habitat for many insects that can be beneficial to a garden.

Reintroducing biodiversity into your environment creates a healthy ecosystem that includes us as humans, other animals, plants, bacteria and fungi. Observing the ecology around



Creating good soil can be an intensive process, but many practices like composting and worm farming can all feed back into this task.

you and perceiving yourself as part of this same ecology can bring benefits that include maintaining the health of our waterways, soils and air, as well as flora and fauna.

These principles can be adapted to myriad environments, whether you live in an apartment with a small balcony, have a community rooftop garden space, a small plot of land, or acreage.

So where to begin this grand adventure? Start by truly observing, a skill that can take time to refine in a busy world, along with listening and becoming present within your environment. Observe the elements such as air - where it flows, how it moves through your environment; water - the location of water sources, the amount of rainfall you receive; and earth - what is the soil like, is it rich in organic matter, are there living organisms within the soil?

Once you have observed the environment you can start to think about how you want the garden to look and feel, and what you want to achieve. Start to note the types of plants you love and those that grow readily in your

local conditions. How much sunlight or protection from the elements do your flora and fauna require? If some plants require more protection from harsh weather, then what type of infrastructure will you need to create? For example, you may need to establish microclimates, add some shade trees, or grow some deciduous trees to provide shade in summer and allow more sunlight in winter.

Allow the journey to unfold, take one step at a time and give your creativity free rein - there is no right or wrong but rather experiences that help us to grow. Remind yourself that you can change any area of your design as you learn what works and what needs to be redesigned or integrated for increased sustainability. It is a process that provides a growing knowledge about yourself as much as the garden you are co-creating with nature.

Now we are ready to look at the different zones within your design. In permaculture, the term 'zone' is used when considering the placement of elements within the overall design. There are typically five zones, with Zone 1 being at the centre of any activity and Zone 5 being located at the farthest reaches of the property.

Zone 1: This is where you are most likely to plant herbs, flower beds and any annual food crops that will require attention multiple times on any given day. This is also the place for rainwater tanks or catchment systems, composting systems for kitchen waste, greenhouses and tool sheds. Any small animals like quail may also be in this zone.



Vertical gardens are a great space saver for this zone if you have a smaller space.

Zone 2: Think of this zone as your second 'go-to' area, which you only need to visit a couple of times a day or a couple of times a week. Here you can grow some of your favourite bush tucker plants like Midgen Berry (*Austromyrtus dulcis*) and Native Guava (*Eupomatia laurina*), indigenous shrubs or small trees, mini orchards of semi-dwarf fruit trees and perennial vegetable crops. It is a great place for compost bins, and beehives with native stingless bees or European bees.



Beehives can vary in scale. If lacking in space or time, native stingless bees are a great option. If you have more time, honeybees can be a rewarding challenge.

This area can house chickens or ducks, providing a great place for them to forage. Alternatively, the chicken coop can border zones 1 and 2, allowing for ease of access and giving the birds more space to free-range, helping to keep pesky weeds in check. Even better, the chook poo can be added to your organic matter. Remember to put those calcium-rich eggshells back into your garden.

Zone 2 is also a great place to build a super-duper workshop, if this is what you want, as it is still in the hub of the garden.

Zone 3: This is a place you will visit infrequently or occasionally through any given week or a couple of times a month depending on the season.

Here you can plant larger fruit trees, staple crop production that you might think about selling at a local market or sharing with the wider community. You may also look at placing bigger water

tanks in this zone or creating larger water catchment areas.

If you have areas where water pools during heavy rain you could consider creating dry riverbeds or swales, allowing you to grow different types of plants, for example native sedge grasses and rushes and other natives.

If you are lucky enough to have a much larger property, this zone is where you might have cattle, goats, sheep, alpacas or llamas, and stables or barns.

Zone 4: Love this zone as this is where you will find more wildlife, a place you can choose to explore or leave in its most natural state. Interconnecting the dry riverbeds or swales between zone 3 and 4 will also allow for seamless integration for local wildlife exploration, an adventure playground for many to explore. Ensure there is access to water in this location, such as water troughs and birdbaths.

You could also place some of your low-maintenance cash crop plants in this zone.

Zone 5: Traditionally this zone was considered 'wild', bushland managed through conservation practices and occasional foraging.

It might sound as if you need a large property to fit all these zones, but this isn't so, as each zone is seamlessly interconnected and can be scaled to suit the type and size of any property. As with any great design, clever use of space is all that is required, along with being open to infinite possibilities and inspiration from nature itself.

Once the zones are well established, the shrubs, trees and groundcovers will usually thrive with very little maintenance. So continue to ask questions: Do I want a more formal look? Do I want to explore a food-forest style of garden design? Am I able to easily access and harvest the food, and does my selection of herbs, vegetables, fruit and nut trees meet my requirements year-round? Are your herbs and vegetables to be grown in planter boxes, and are they to be grown in just one location in the garden, or in many locations? Refer to the concept of zones within your design because 'low maintenance' is a phrase that will simply disappear and 'I love my garden' will appear as you will have more time to simply enjoy your garden.

Three other zones are shared by some within the permaculture community: zones 0, 00 and 6.

Zone 0 is all the indoor spaces, which need to be considered from a design perspective, for example, by addressing the need for more light or shade. If you require more shade, then growing leafier shrubs or trees would be appropriate. Inside the home, houseplants can improve air quality or if sunlight is streaming through your kitchen windows then having planter boxes with herbs is a pure delight for the senses.



Get creative with your indoor spaces. The kitchen is a particularly intensive use area where many cycles start and end.

Zone 00 is the zone of self-care, which is too often forgotten. In your design, try to create a space to nurture the self. For instance, if you enjoy taking a bath and would love to connect to the outdoors you could create a bathing area in your home that incorporates an indoor garden with large-leaved tropical plants, rain showers, pebbled areas and a water feature. Use the sunlight as it streams in through a door or window, or through a large skylight. You are only limited by your imagination.

Zone 6 connects us to the community and how we can make a difference in creating an environment that is fruitful for all to share if they desire - the choices we make, how we choose to interact with the wider community both locally and globally. There are theories that nature communicates through infinite sound waves, frequencies and vibrations. These theoretical communications connect to every living form, not limited by distance, so no matter where we are, we are all said to be interconnected and experience the cause and effect of any action or inaction we take.

Next issue: *The seasons and seeking inspiration from the patterns in nature.*

How to: Plant like a Pro

Step 1 Plan your placement



Before you start, consider your space and how large the plants will be when they are fully grown. You won't want to plant a large spikey plant right on the edge of a footpath for example. Also consider that few plants will thrive if planted within the root space of a large existing tree.

Grasses and ground covers will stay small therefore could be comfortably planted within a metre of each other. Large trees on the other hand should be spaced a few metres apart from each other. Planting a mix of ground covers, shrubs and trees together can ultimately provide an aesthetic coverage, while arranging similar plants in groups of three often gives an appealing and natural look.

Step 2 Push back mulch or leaf litter



It is essential that plants are installed into soil. They will not grow in mulch alone. Care should be taken to prevent mixing mulch into the soil when digging, as the natural decomposition

process will actually draw nutrients away from the roots of plantings and direct contact with mulch can make plants susceptible to rot and disease.

Step 3 Dig deep



There's a saying in horticulture that for a \$10 plant you want to dig a \$100 hole. This is because the hole you dig can determine the likelihood of your plant surviving- it is after all that plant's final home!

The hole should be at least twice the width of the pot, so that the entire root system will be comfortably buried. As the soils around Randwick are often hydrophobic (which means they actually repel water!), you also want to have some extra soil available to create a "well" to catch water, allowing it to percolate straight down to the roots. If you've dug halfway and hit a snag which means your hole isn't going to be quite big enough, shift it 10cm to the side and try again- don't try to squeeze a plant in!

Step 4 Bring it home



It's time to place your plant. If using a soil conditioner, sprinkle a pinch into the bottom of the hole. Then gently loosen the plant from its pot, by giving the top of the pot a short, sharp tap with your trowel. Place it into the hole making sure that the entire root ball is covered by soil, so that the plant is buried to the same depth as it was in its pot. Using any extra soil from the surrounding area you can build up a ring of soil to help capture water. Creating a well in this way is particularly essential in areas susceptible to erosion, such as on slopes or in sandy soils.

Step 5 Seal the deal



Before you finish, you need to give your plant a good drink of water, keeping in mind that it may not get another for a good while. At this stage there's no such things as over-watering, only underwatering. Here's where your well comes in handy - you want to fill it right up to the brim. Once the water has been absorbed, check that you haven't exposed any roots. It may be that the force of the water has dug up the plant up little or there were too many air gaps in the soil. If so, just cover them over with soil once again and give the area a bit of a pat down. You can also sprinkle a thin layer of mulch back over, being making sure that it's not piled on the stem of the plant.

Now you can walk away knowing you have given your little plant the best start to life. On to the next planting!

What are these spiders?

Leaf-curling Spiders (genus *Phonognatha*) are day-active orb weaving spiders that protect themselves from predators by sitting inside a silk sealed, curled leaf.

Identification

Mainly identified by their curled-leaf retreats in which they hide with only their legs exposed, Leaf-curling Spiders are fat, oval-shaped spiders with red-brown legs and body and a cream coloured pattern on their backs.

Habitat and distribution

Leaf-curling Spiders are a common and widespread species found in urban areas, forests and woodlands across eastern Australia.

Behaviours and adaptations

Leaf-curling Spiders hoist a leaf from the ground and, using silk threads, curl it to form a protective cylinder, silked shut at the top and open at the hub. They then sit in this cylinder with only their legs showing, feeling for the vibrations of a captured insect. The curled leaf protects them from birds and parasitic wasps. Sometimes other objects, such as snail shells (which come ready-curved), are used. In *P. graeffei* this leaf is suspended just above the centre of the web, but may be placed higher in other species. Juvenile spiders start off by bending over a small green leaf, but eventually graduate to larger dead leaves.

Life history cycle

A male Leaf-curling Spider will take up residence in an immature female's web, living at the upper end of the curled leaf. He will then mate with her as soon as she matures. The female lays her eggs within another curled leaf, which is silked up and hung in the foliage away from the web.

Text adapted australian.museum/learn/animals/spiders/leaf-curling-spider/



Got a snap to share? We'd love to share your recent photos of native plants, animals, or you getting out into nature. Please send your photos to bushcare@randwick.nsw.gov.au.

In this issue we have some photos from Eric who sent in these images contrasting what he calls Traditional and New Architecture for spiders!



Traditional house design for Leaf-curling Spider



New style of architecture for the modern Leaf-curling Spider

Working bee calendar

Unfortunately, current Public Health Orders restrict us from continuing our Bushcare Volunteer program at this time.

We will continue to monitor restrictions and let you know when we can resume our groups. In the meantime you can keep in touch with us via our Randwick City Council Bushcare Facebook group page.

Council's Bushland team are keeping a close eye on all our Bushcare sites and we're all itching to get back out there with all of our Bushcarers, as soon as we safely can!

