

Cool  
River  
City

**COMMUNITY HANDBOOK  
FOR A CHANGING CLIMATE  
AND CARING FOR COUNTRY**

# 01 Autumn

# 02 Winter

# 03 Spring

# 04 Summer

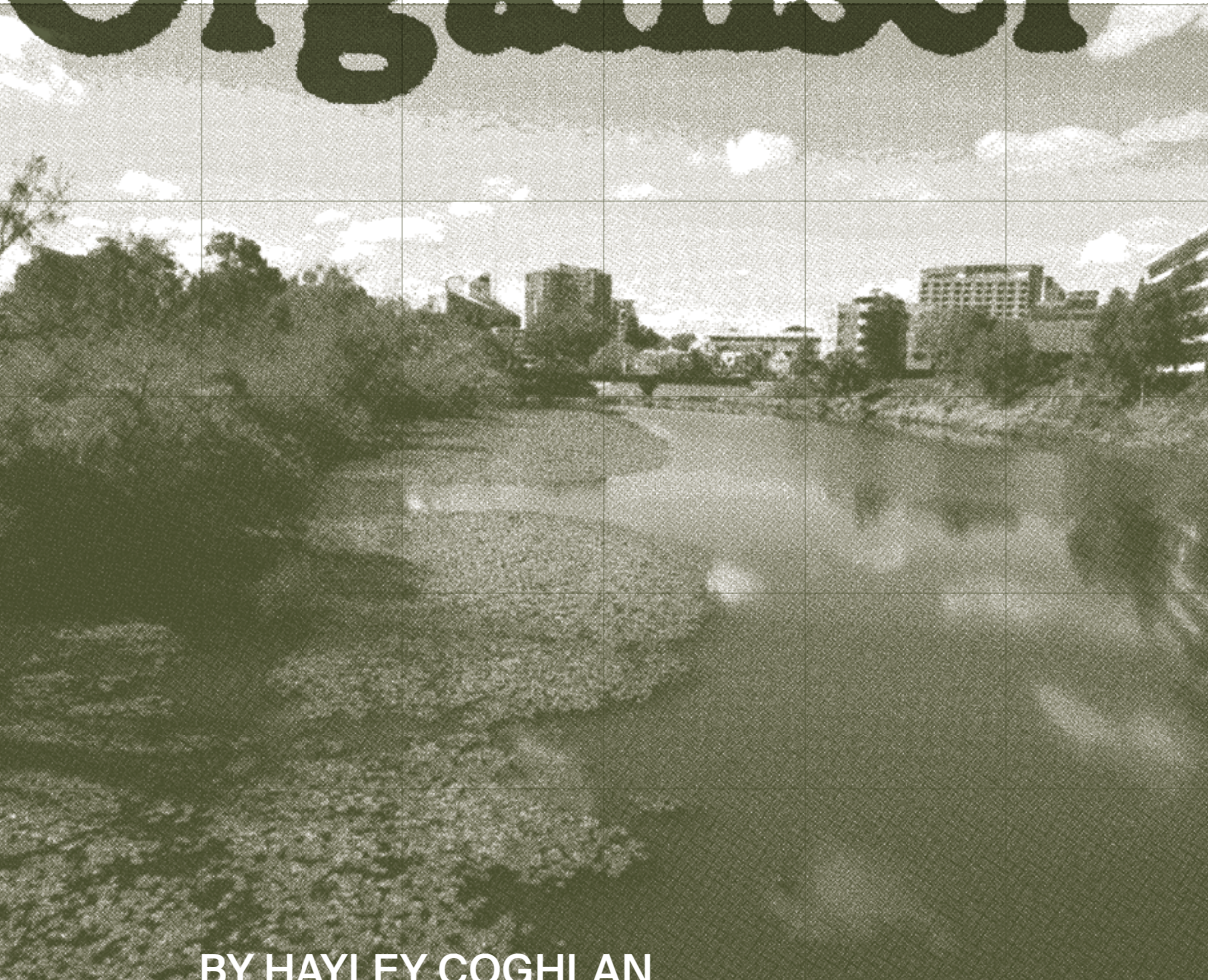
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# Foreword

Ngaradyingun Ngurragu  
We listen to Country  
Ngaradyingun burrayin, bamalin, baduyin.  
We learn from the sky, earth and water.  
Dhangurraya bayumigu yarrayin  
Let's dance to music made from trees.  
Ngaya Ngurrawa Ngurrabirang.  
At home on Country I belong.

The seasons of Dharug Country are different from the European idea of seasons. Dharug people have always learnt from the signs of Country and have walked in the footsteps of our ancestors for 10,000s of years. When we listen to Country it cares for us. Listen to Country and it will care for you.

# A Note From the Organiser



BY HAYLEY COGHLAN

From what I've seen of 2019 – 2024, it is Community that responds and adapts the fastest. Through fires, floods, pandemics, global conflicts, and genocides, Communities are continually protesting, providing mutual aid, relief, and rehabilitation. For this reason I believe Communities will continue to build their own destinies and visions for the future.

When we care about the realities of climate change in Western Sydney, what we really care about is Country, about healing Dharug land.

As a child growing up in the Parramatta LGA I dreamt of a place with more trees and flowers, with shade for us and more habitat for the birds, clean wetlands, rivers, and creeks. A landscape that once was thriving, and could be again if we, the people living on this land, start to understand it, respect it, and care for it.

If you are a resident of Western Sydney living on Dharug land, this handbook has been designed with you in mind. Within it you will find some loving support in developing a few creative resilience tools for our changing climate.

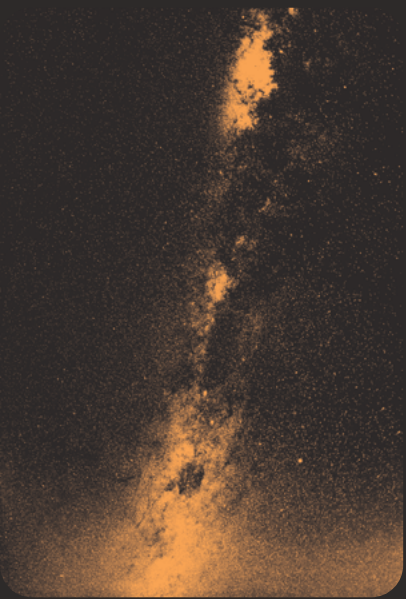
This publication has invited Elders, knowledge holders, artists, healers, scientists, architects and wild gardeners to share their wisdom and ideas for how to respond to climate change and care for Country, the mother, so she can care for us.



# Autumn

EMOTIONAL  
RESILIENCE

To make the small and large lifestyle changes required to adapt to climate change and properly care for Country, we'll need a foundation of emotional resilience to support us. There are infinite ways of building emotional resilience. For our first season of this handbook we explore Wayapa, Tai Chi, Eco Therapy, and Yoga.

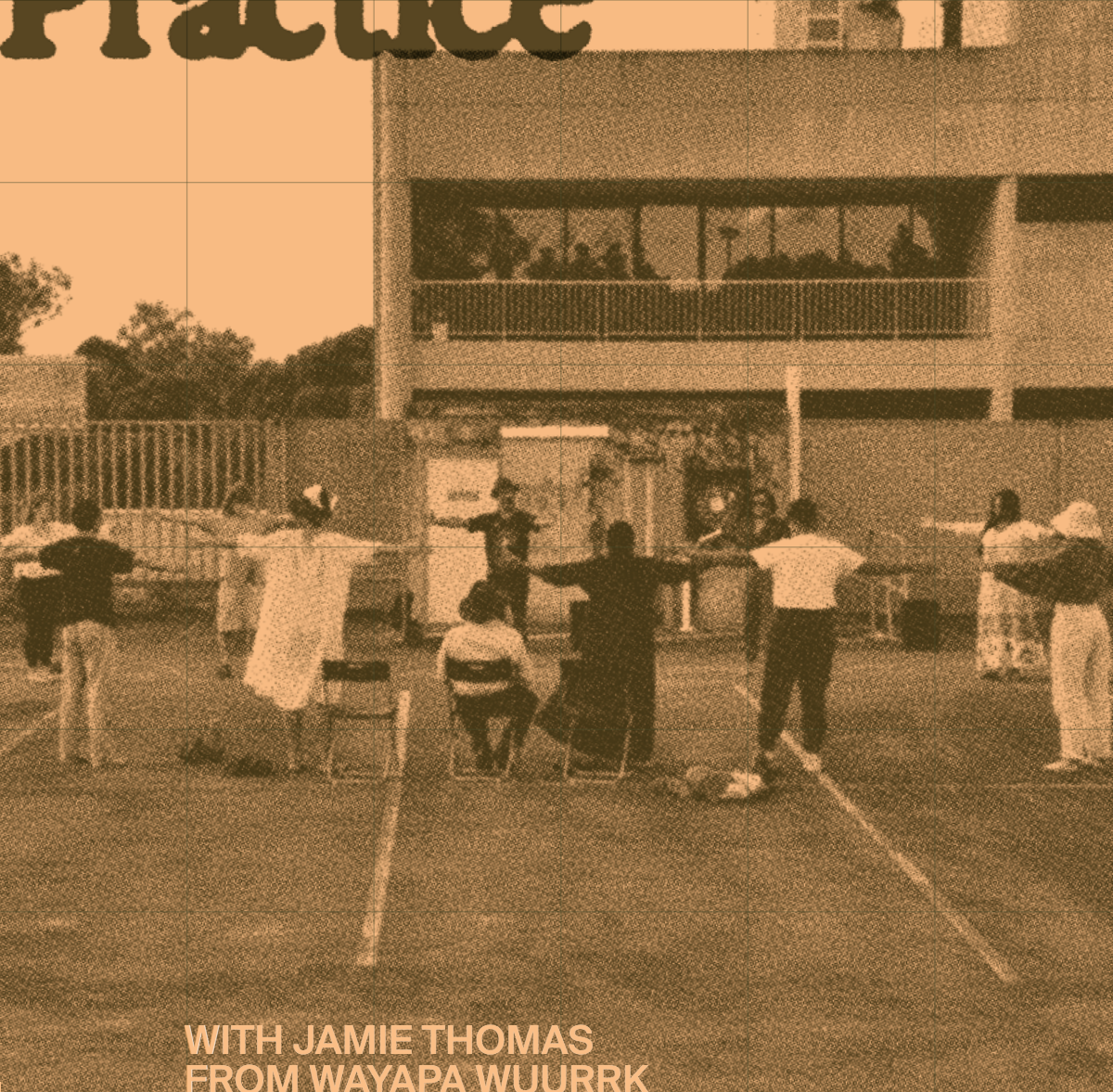


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Time of *gurbuny* (fog), *birrong* (stars) and *midyini* (yam seed) on Dharug land<sup>1</sup>

1. Coeee Mittagarr by  
Jasmine Seymour  
and Leanne Watson

# Earth Reconnection Practice



WITH JAMIE THOMAS  
FROM WAYAPA WUURRK

WHAT IS WAYAPA WUURRK?

Wayapa Wuurrk means 'to connect to the earth'. Wayapa is my grandmother's and my children's language, Peek Whurrung, which means to 'join, connect or fuse together', and 'Wuurrk' is a Gunai word from my Country where I was born which means 'the earth'. Wayapa Wuurrk is an earth connection practice that involves a meditative component, a physical embodiment and movement process, with the goal to get people reconnected and observing the environment so we can then put things into action to look after it.

WHY WAS WAYAPA WUURRK CREATED?

It's a way to share humanity's connection with all other species and ultimately with Mother Earth. The more observant you are of what we are dependent on (nature), the more likely you are to take action about it because you feel connected to it.

WHO CAN PRACTISE WAYAPA WUURRK?

Anyone can do it. It's an earth connection practice for humanity. It's a template that honours and respects Indigenous Australians as one of the oldest continuing cultures on the planet because of how they revere the earth. It doesn't teach culture, it shares culture. In Wayapa, it doesn't matter where you're from, it's about how you connect as an individual to your environment through the fourteen elements that are universal.

WHAT WOULD BE THE BEST WAY TO INCLUDE WAYAPA INTO YOUR DAILY LIFE?

Wayapa is about embodying nature through meditation and movement, but also taking care of nature. I love that saying 'a wise person plants a tree for the shade they'll never feel'. So Wayapa really is a way of starting your day with personal embodiment and going out there and making better choices for Mother Earth. Simple things. Just do what you can do.

HOW DO YOU SEE WAYAPA HELPING WORRIES LIKE CLIMATE ANXIETY?

By showing younger generations that we are taking responsibility. We borrow this time now from generations to come. We all sit here with the luxury of over three hundred thousand of our ancestors looking after the earth. We've got to honour their ways and their connections. The more Wayapa you become, the more connected, the more responsible you become to reinstate your greater purpose.

HOW DO YOU SEE WAYAPA HELPING PEOPLE INTO THE FUTURE?

Wayapa is taking care of the planet. As humans we have a multitude of purposes, but the greatest purpose we can have is to look after the planet for the generations to come. That's where humanity continues and we all have a part to play in that process.

DO FEELINGS COME UP A LOT DURING WAYAPA PRACTICE?

Without a doubt. It is a reconnection to a relationship. Our relationship with Mother Earth is the longest relationship we'll have in our lifetime. Thinking about that can become emotional. That awakening gives people back that purpose, that they have a responsibility for a greater good.

WHAT WOULD YOU SHARE WITH SOMEONE WHO IS ABOUT TO START WAYAPA?

Buckle up. There's a big rabbit hole here, and you're about to go down it. How far you go is up to you. Be authentic to yourself on your journey and your process of reconnection. Respect Mother Earth, appreciate it.

HOW IS WAYAPA DIFFERENT TO YOGA, TAI CHI OR OTHER MINDFUL PRACTICES?

It's a modality that brings sustainability and purpose to it for generations to come, not just for the now. It's about the greater collective and other species we share the planet with.

WHERE DO YOU MOST LIKE TO PRACTISE WAYAPA/ DO YOU HAVE A FAVOURITE WAYAPA MOVEMENT?

Obviously, home in Gippsland on a beautiful big granite rock overlooking the ocean. Actually, I've meditated on that spot so much that we're going back there to be there. So, yeah, that's my favourite place. So I practise in the morning, I close my eyes and I'm standing on that rock and I'm looking at that ocean. And then when I finish my practice, I'll go pick up some rubbish or whatever on the beach, which is part of it. Favourite movement. To be absolutely honest, I don't have one. Of the fourteen elements, I guess they're a little bit like my kids don't have a favourite one, well we're not supposed to (laughs). But yeah, I don't really have a favourite movement. They all are so uniquely equal and necessary that I guess the whole practice, doing it, is my favourite.





# Tai Chi

WHAT IS TAI CHI?

Tai Chi is realising we are the universe. By starting with the breath and connecting with the five elements - earth, fire, water, metal, wood - we reconnect with ourselves, our immediate environment, the flora and fauna, and all of space.

WHY WAS TAI CHI CREATED?

Tai Chi was first created in China and has roots in India as well. It was created by the Taosias to promote health and to make harmony between ourselves and the world around us. This was done through careful observation of the details in nature, how life really is, the cycles of the animals, the birds, the moon cycles, the plants. Through careful observation of yin and yang energies and how to bring these energies into balance for inner peace.

WHO CAN PRACTISE TAI CHI?

Everyone. Everybody is welcome. We are not separate. Your breath is my breath, my breath is your breath. Our breath is the animal's breath, the sound of the ocean breathing. There is no such thing in Tai Chi that we are different people and only some people can practice Tai Chi. Everybody is welcome.

WHAT IS THE BEST WAY TO INCLUDE TAI CHI INTO DAILY LIFE?

To be completely open hearted and believe that we are the ultimate standpoint with the view into this universe.

HOW CAN TAI CHI HELP WORRIES LIKE CLIMATE ANXIETY?

Climate anxiety is a disease. It is a literal dis-ease in our hearts and minds and in our society. We must not focus on climate anxiety, the darkness. We must focus on the light, the sun, how healthy we want to feel and be. Practising Tai Chi is I am the light, I am the sun, I am nature and I am healthy.



WITH LING HALBERT

HOW DO YOU SEE TAI CHI HELPING PEOPLE INTO THE FUTURE?

It starts with the breath and is like tending to the soil. We are the micro-organisms. Whatever environment I am in I want there to be healthy soil. It is the foundation for healthy worms, bees, plants, and birds. The birds are my brothers, the trees are my cousins, the flowers, the butterflies are actually my friends. I am not alone. It is like the ripple effect. A ripple expanding and influencing future generations. Tai Chi is like building healthy soil in human consciousness.

WHAT WOULD YOU LIKE TO SHARE WITH SOMEONE WHO WANTS TO START PRACTISING TAI CHI?

Open the door, accept that you are part of the universe. Eat the apple, the potato, the banana, the fruits, the vegetables, the herbs, and be the breath.

WHEN LIFE GETS BUSY, WHAT HELPS TO CONTINUE THE PRACTICE OF TAI CHI?

It is awareness. Of the breath, of the connection. Carrying this breath into the future with gratitude. You can practise anywhere. It is immediately accessible and we often do Tai Chi intuitively. When I am tapping my feet while I am talking to you I am creating a vibration that keeps my energy going by balancing the charge of positive and negative ions. While the kettle is boiling I can rub my hands or do a movement like a flower opening.

HOW DO YOU LIKE TO PRACTISE TAI CHI?

The masters say to practise early in the morning at sunrise. I like to practise everywhere at any time.

WHERE DO YOU MOST LIKE TO PRACTISE, AND WHAT IS YOUR FAVORITE TAI CHI MOVEMENT?

By the ocean, in the forest, in the garden. I like to practise movements that happen in these places. The movements of the waves, the tallness of the trees, the wings of the birds.



feet on earth



Swinging arms



Shaking hands  
on tippy toes



Turning to look  
at the moon



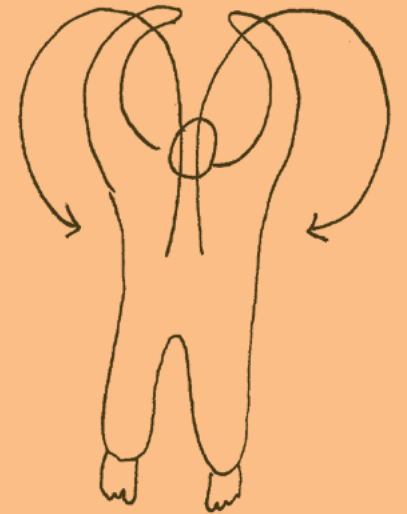
Pushing the breath  
out, pulling the  
breath in



crane spreading  
wings

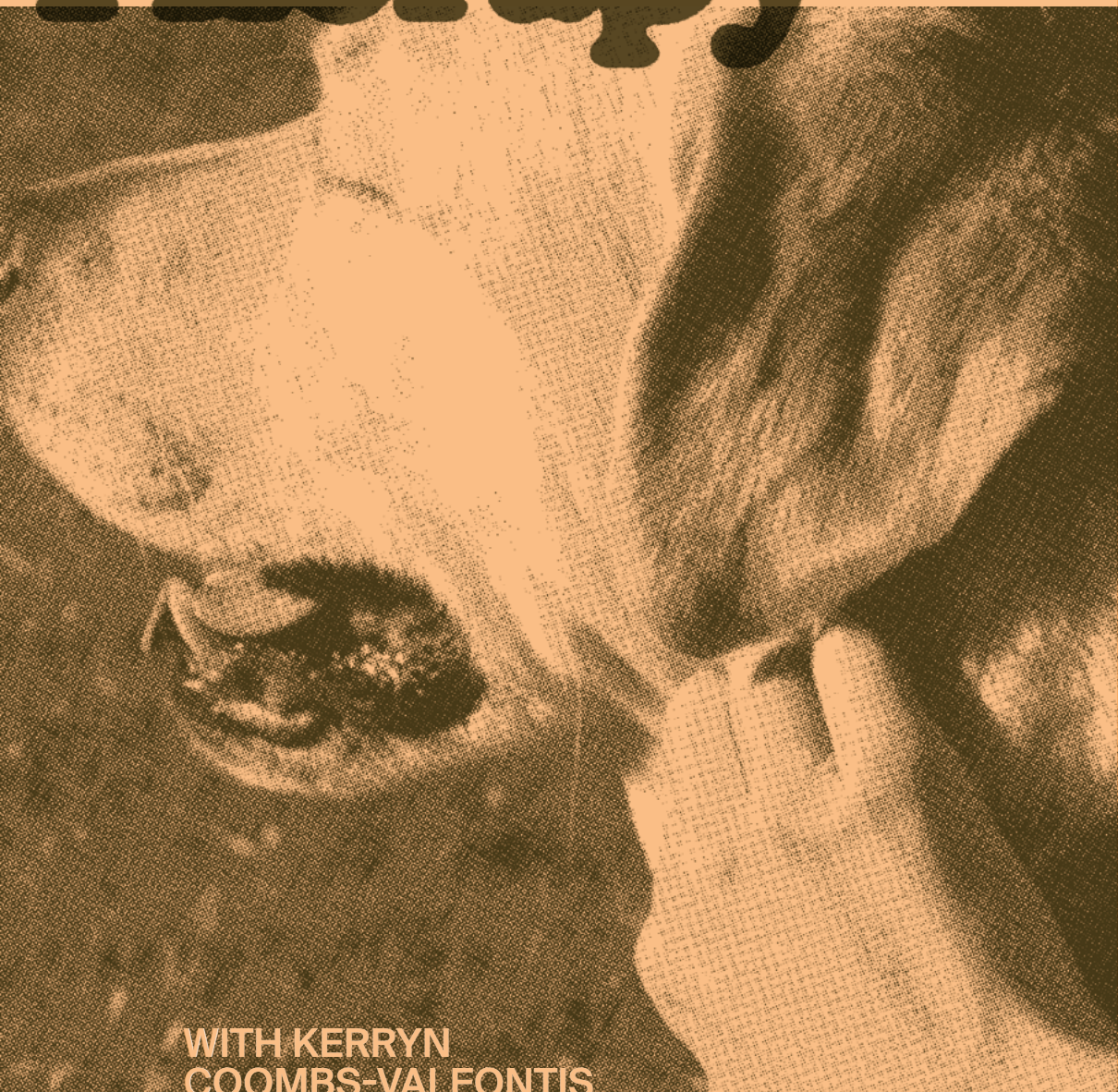


Dancing  
rainbow



Buddha asks  
heavens for  
forgiveness

# Eco Therapy



WITH KERRY N  
COOMBS-VALE FONTIS

WHAT IS ECO  
THERAPY?

It must be acknowledged from the beginning of this conversation, while this stuff seems to be new and emerging, it's actually very old and it circles back to, and respects and learns from Indigenous cultures across the world. Eco therapy is an emerging modality in contemporary society. It's coming principally from eco psychology which is a progression of traditional psychology. The early development of psychology sort of forgot about the environment and nature and how we are nature itself. Ecopsychology grew in the seventies as a result of some of the social revolutions that were going on in the sixties, recognising that we are not separate from nature and essentially wanting to heal that split, if you like, the rift between humans and nature, the forgotten memory that we are nature. And that's caused all sorts of problems for the earth and within ourselves. And eco psychology recognises the deep connection between the health of the planet and the health of ourselves as part of it. We come from the earth, we are part of the earth.

HOW DOES A  
PERSON ACCESS  
ECO THERAPY?

Well, it's popping up all over the place in various locations. My eco therapy and where I'm seeing a lot of it pop up is in community life. My heart for this work is in doing it collectively. I think there is a big collective wound that we've had in splitting off from nature so I'm really interested in group work.

There's an emerging presence within mental health and mainstream clinical mental health services. Horticultural therapy is coming in there, mindfulness in the garden, mindfulness in nature and that sort of thing. Art therapy is happening. There are more and more art therapists. I call myself an eco art therapist working with nature, not leaving any footprint, working with raw nature materials, ephemeral work, that will melt, that will blow away, that will be taken with the tide. Earth art. Art therapists are working more in nature and with nature through Allied Health services. We're seeing these therapies become more available for youth at risk. Mindfulness is really big in the community with roots in Buddhism. The Eastern philosophy of being present, and nature is such a beautiful invitation to the present.

Forest bathing, shinrin-yoku, guided bushwalks with mindfulness coming out of Japan. People are training in that, becoming practitioners, running walks outside of cities. We've got it popping up online, would you believe from Covid. So Victoria had this amazing online nature festival, the Virtual Victoria Nature Festival, where people were sharing photos of birds' nests, there was a virtual penguin parade and virtual meditations. It was beautiful through the springtime, a very large festival, and I believe it's gone on to establish itself as quite a large online presence. South Australia has started a nature festival as well. So it's popping up there in community collectives. The joy of nature, being in nature is just lovely to remember. And then we've even got doctors prescribing going for a walk in nature for depression and anxiety. It's happening in the U.K. There's been funding and announcements on the New Zealand model of the 'green gym', the idea that you can go do exercise and not pay gym fees, you can do bush regeneration, be outdoors and get all the physical benefits. So we've got it growing on lots of different fronts and from lots of different angles and pathways. And there are some really creative ones. I've heard of an Indigenous woman in central Queensland running dirt bike tours with young men at risk. They'll stop their bikes on the trail near a beautiful section of rocks and they are silent, and they listen and acknowledge the presence of these beautiful rock formations. And that's part of the dirt bike experience. So, yes, noise and adventure. And adventure therapy is the other place it's popping up in, it's still a form of eco therapy and deepening the connection. And there's poetry, eco poetry and healing, you know, writing the poesis in nature. And there are more, that's not exhaustive.

Sometimes our climate anxiety is very clear to us. Something like the bushfires of 2019-2020, or the recent floods which I don't believe Australia has begun to process collectively yet. There is much collective grieving and much collective healing that needs to take place. A lot of it was hijacked by the pandemic. We've jumped from one trauma to another

WHY WOULD  
SOMEONE SEE AN  
ECO THERAPIST  
OR PRACTISE  
ECO THERAPY?

HOW DOES  
ECO ANXIETY  
SHOW ITSELF?

without resolve. Some people are very aware of their climate grief or eco anxiety and the real depression that can result from that, absolute hopelessness and despair. Joanna Macy talks a lot about empowerment and despair work. And she acknowledges the despair that we have when we love the earth and witness these challenging events. So something like the fires can really trigger it. Witnessing environmental disasters or ecocide can be very distressing. Someone may seek help if they're aware that that's what their grief or their anxieties are related to. But they may not know, they may just feel anxiety generally. And to unpack that anxiety, an eco therapist is aware of the sorts of impacts climate anxiety can have and how to help those impacts with certain therapeutic activities. For example, planting is an activity of hope for the future that can help feelings of despair.

It's the sense of warning or foreboding arising in our subconscious. Dreams can be part of this, dreams can feed into this apocalyptic feeling, where we're responding to big events, fighting something really overwhelming. Sometimes we go down into the despair of it and other times we're up and heightened in the anxiety of it, or we may dissociate altogether. But we can move between feelings of eco grief and anxiety that present themselves in different ways. Sarah Wilson talks about the rage part of eco anxiety, the anger and the rage and the fury around things that are lost. Sarah openly suffers from eco anxiety very strongly and she says 'the raging heart brings us to the courage, the courage of what is required'. And she says that in her book, her beautiful book, *This One Wild and Precious Life*. That title is a gorgeous line from a Mary Oliver poem 'What will you do with this one wild and precious life?' And that's the line after she's been lying in a field, talking to grasshoppers all day.



DO YOU THINK  
ECO THERAPY IS  
AN ANTIDOTE TO  
CLIMATE ANXIETY?

I do, I do. It gives me great hope, it's my action, which is my antidote to despair and I'm getting that from the work of Joanna Macy. She has this beautiful program of 'the work that reconnects', that goes into the despair, and acknowledges it. And we do this collectively so we bear witness to each others' despair, which is really powerful. Powerful enough to turn it around, and as soon as you go right into it and face it head on, it flips really quite quickly into - well what are we going to do? We start to motivate, we start to activate, we start to organise in whatever ways that we can. Burnout can happen when we get passionate and we really need to acknowledge it. It's a thing. It happens, and it's something that we need to be aware of. But our antidote to burnout is collective action. Working together. One of the women I really admire does really beautiful community work in downtown Vancouver, Vikki Reynolds. She talks about the rhizome as being the way that all groups are connected and empowered.

HOW DO YOU SEE  
ECO THERAPY  
HELPING PEOPLE  
INTO THE FUTURE?

So I think eco therapy will continue to evolve and continue to emerge from eco psychology in applying it in various ways that the community needs. I think that climate anxiety is going to get a lot worse, particularly with our young people. We have research evidence now to say that it is on the rise. It is quite alarming. I think there is so much to be done here in the therapeutic space. The need is great and will get greater if we ignore it. We need to think of ways to manage and learn to manage the anxiety around collapsing ecosystems. Do we need another anxiety? No, we don't. And yet this is real, this is happening. Climate events are absolutely palpable, and to just ignore it is not a response, it needs a response and eco therapy is a response.

DO YOU HAVE A  
PERSONAL ECO  
THERAPY PRACTICE?

I garden every day of my life. I'm in the garden every day, connecting. And that grounds, it grounds my fear, my excessive overthinking and being in my head which I am very vulnerable to. It grounds it into my body, spreads the weight all around my body. Contact with the soil increases serotonin. The body produces an immune response, particular to when it's been

CAN ECO THERAPY  
BE ADAPTED TO SUIT  
DIFFERENT NEEDS?

in contact with living matter. So I garden every day, even looking at my fingernails after I've been gardening makes me happy.

Yes, definitely. Eco therapists know that this therapy can only be effective if it's accessible to whoever the participants are going to be. And we mimic nature in that way by adapting, that's what nature does, when nature values diversity, it's how it actually stays alive, it's called biodiversity. Human diversity is also integral and valued and at the heart of eco therapy practices.

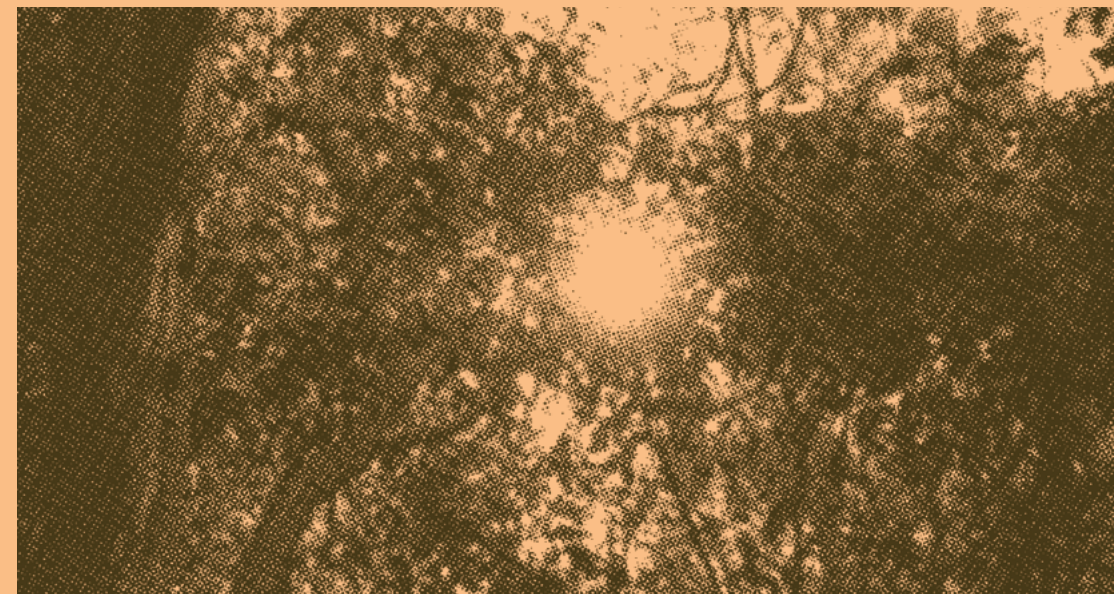
THERAPY AND  
THERAPEUTIC  
PRACTICES CAN  
OFTEN MAKE US  
NERVOUS BECAUSE  
THEY CAN BRING UP  
A LOT OF FEELINGS.  
WHAT FEELINGS  
DOES ECO THERAPY  
USUALLY BRING UP?

So I'm going to jump straight to 'joy' first. Joy often comes, even when great grief comes up or despair. Like in Rumi's beautiful poem *The Guest House*, we welcome any emotion that comes up. They're all part of the process, they're all welcome. They're all acknowledged and witnessed. So it's a safe therapeutic space for what needs to come up. And joy and grief are connected. When you go through and really face your grief, where there might be tears there can also be laughter. When grief is acknowledged and just allowed, because so often we chase our grief away, we don't want to feel sad, we don't want to feel like it's just too painful, but when we allow ourselves to feel these challenging emotions, what it does is, somehow quite magically, makes room for joy as well.

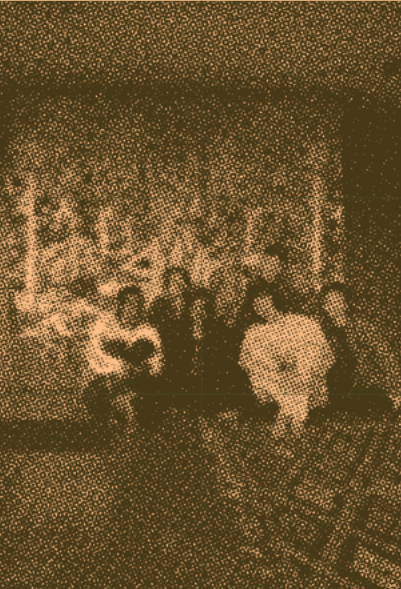
CAN YOU  
SHARE HOW YOU  
INCORPORATE  
ECO THERAPY INTO  
YOUR SESSIONS?

It was an autumn day when I used to work with mental health and addictions groups. I used to take this particular group to the local community garden where we would do a mindful walk in nature then gather under this big, beautiful liquid amber tree. We would all look up at the autumn light shining through the leaves of this liquid amber. We were working with leaves at the time, and so I said pick a leaf that appeals to you and not to think too hard about it. And various people picked leaves from the ground or from the tree, and then I'd invite everyone to talk about their leaf, if they'd like to, and why it caught their attention. A handful of participants in the group were moved to times of themselves as children in nature, and we went on to talk about what these children would tell us now if they could. Some participants shared tender memories that they'd never openly shared before.

The thing with autumn and working with autumn leaves is that you're also looking at letting go. The tree is letting go, the seasons are turning, and the tree is going to ultimately go bare. The tree is going to let go of every single leaf. So this was the profound context that we were working within that day.



# Seva Yoga



AS A YOGA TEACHER,  
WHAT ARE YOUR  
MAIN TAKEAWAYS  
FROM STUDYING THE  
DEEPER HISTORY  
AND PHILOSOPHY  
OF YOGA?

Number one is it's a tool to expand the mind. We talk about flexibility. Yoga's core giveaway is that flexibility starts in the mind. So what it's really given me the chance to explore is whatever makes me feel separate to what is. I have a way to find unity with that. So say, for example, our spiritual life and our physical life, you know, we sometimes feel separated from it. And yoga's principles and teachings really help you find the unity consciousness, between the two, that one is not superior to the other. So we tend to think that the physical life is inferior to the spiritual life, which is higher or superior. But in the end, it's all part of the one. So that's one of my biggest takeaways and it's really helped me embrace this physical life with a lot more love and respect.

And so there's a couple more. Number two is that it is a lifestyle tool and a lot of people ask me 'is it a religion?' Actually, yoga has no dogma, so it doesn't believe in an authority or authoritarian voice or this is the way it should be, et cetera, et cetera. So it really is going with that, which is expanding the mind and the consciousness. It really helps you look at things as in, there is more than one point of view to everything. So that's a really beautiful takeaway for me as well. Having grown up in a multifaith kind of a family, it's really helped me bring the peace in my own mind to be able to respect where people are at as well as just feeling grounded in myself in the way I look at things. So it's very non-dogmatic and that's maybe one of the misunderstandings in the world about yoga, which is, is it Hinduism or is it a religious thing? No, actually, it's not. It's very neutral. It actually probably helps you get closer to what you believe God to be.

And the third main one is that yoga philosophy actually helps you lead an ethical and organic life, which is to unite with or get in sync with nature itself. So it's organic, being that whatever stands in your way in feeling at peace, well, you get a chance to shed that. You get a chance to melt that, dissolve that and really become a lot more organic in your way of being. So I guess the urban life, urban living, modern living or say even growing up from being

WITH SUPRIYA ROY



WHAT LINEAGE  
OF YOGA DO YOU  
TEACH AND WHY?

a child to an adult, adult to senior, whatever your life course teaches you, everything comes at the cost of conditioning. The conditioning of our experiences can take a toll on the way we end up behaving or reacting, et cetera. So it's a great tool for deconditioning, unlearning and becoming more organic and intuitive rather than conditioned and rigid. Those are the three main takeaways for me.

So my journey of formal yoga training started in a very classical yoga school called Sri Krishnamacharya Yoga Mandiram, which is based in Chennai, India, and Sri Krishnamacharya is like the master who kind of taught all the masters that are out there now. And his focus was always combining ayurveda with hatha yoga and he strictly follows the hatha yoga system. But Patanjali's yoga sutras is the main text that's the system we follow, which talks about the eight limbs of yoga, which is developed to cultivate a meditative mind. So that's the flavour of the teachings that I impart to my students. But I also have learnt from other masters who have specialised in the tantric philosophy and my background in ayurveda. So hatha yoga is a system I teach, but I have adapted it in consideration of all that I have learnt along my last 15 years. I've created my own system under the same category of practises, which is more accessible to someone that's just starting, to someone that's developing from a point, and then someone that wants to advance themselves to the next point. So it's a lineage that keeps giving, the Krishnamacharya lineage, because it is breath based, which is focusing on meditative mind. The philosophy is very accessible for everyone, because it's very simple, which is teaching what is right for the person in front of you instead of teaching by the book, as in this is what it is, this is what you must learn and do, as where it teaches us how to present it to the individual for where they're at rather than imposing the tradition, so to speak. And you still learn the tradition and the beauty and the essence of the tradition through looking at yourself just for where you are. So that's the lineage.

WHAT WOULD  
YOU LOOK FOR IN A  
YOGA TEACHER?

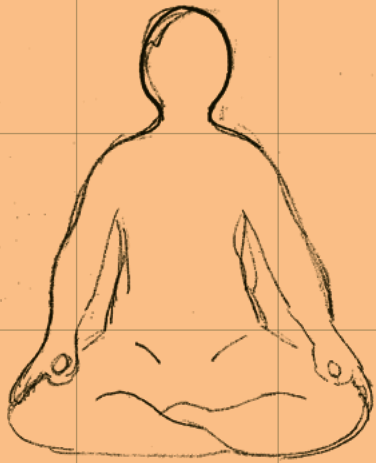
Firstly, the focus of the teachings must be focusing on the breath. If it's missing, then we are not working closely with our own prana, which is the life force. And that's one of the biggest needs for humans, which is to slow our breathing down. This is the biggest medicine for you from yoga. So breathing should be a focus in their class. And second thing is physical alignment, which is knowing your asanas well enough to instruct the asanas alignment. Positioning of the bones to get the best range of motion out of someone's body is crucial to developing strength and mobility of the body. So those are a few things I would look at. If the teacher is able to instruct safely with correct knowledge then that's all that matters. And how you assess that is basically once you've taken the class, you should feel at peace and at ease, not walking away feeling stressed.

WHO CAN  
PRACTISE YOGA?

Everyone. Coming back to the lineage of Krishnamacharya in the traditional sense, there's a specific yoga for different age groups. So we shouldn't forget that, we should not generalise yoga. And I'm using the word should because that's what yoga is like. It's very universal, but then it's not one size fits all. So yoga, what we know it as is probably movements and breathing. Now breathing is becoming a lot more well known. But yoga as a practice, the actual discipline of yoga, is adaptable and needs to be taught appropriately to the age group of the person. So something for my mother would not be the right thing for me because my body needs different yoga postures, movement, breathing, activity of the mind, very different. It is an adaptable thing, everyone can practise it, even a child. But the child is not going to do what the adult is doing in the class. So that's really important to know.

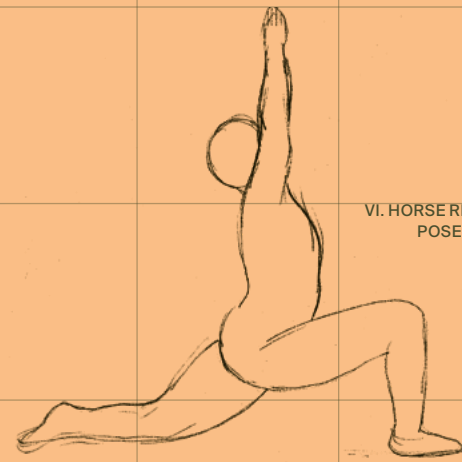
FOR A BEGINNER,  
WHAT IS THE BEST  
WAY TO START  
PRACTISING YOGA?

I would say look at what schools are offering classes for particular age groups or catering to your needs with a specific class to start with. I think a privately owned yoga studio or a yoga teacher that teaches private groups is probably a good place to start because you'll get a decent level of attention and a bit more of a holistic introduction compared to an open class at a gym.

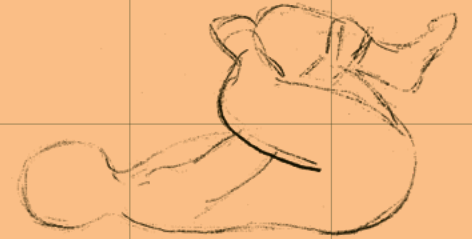


I. SUPPORTED SUKHASANA

II. NECK ROLLS



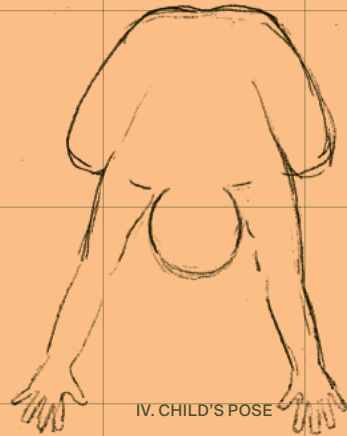
VI. HORSE RIDER'S POSE



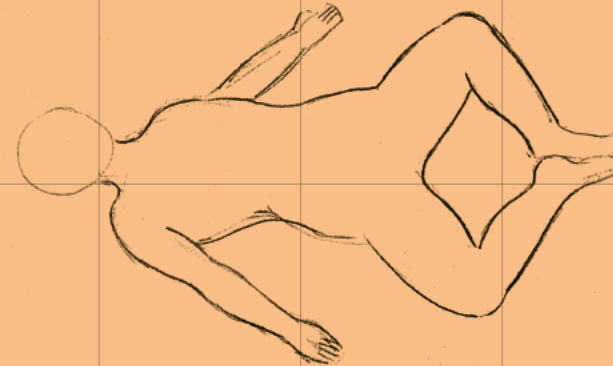
VII. RECLINING PIGEONS



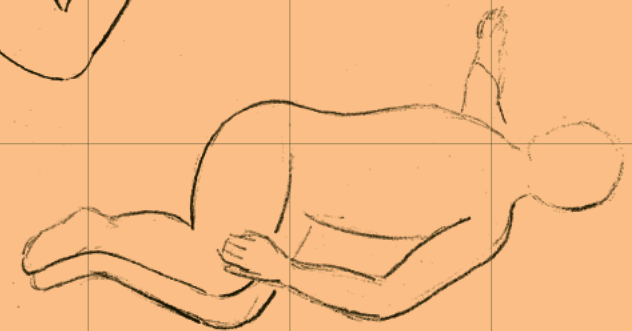
III. SEATED SIDE BENDS



IV. CHILD'S POSE

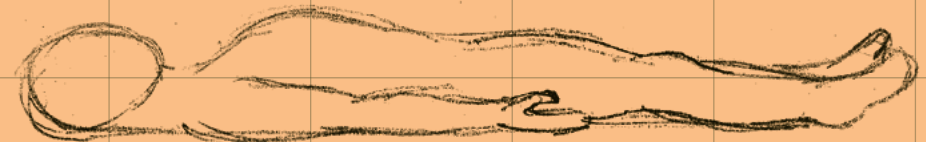
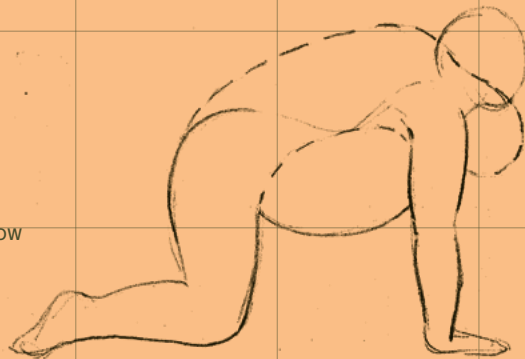


VIII. RECLINING BOUND ANGLE POSE



IX. SUPINE TWISTS

V. CAT/COW



X. SHAVASANA

CAN YOGA BE ADAPTED TO SUIT DIFFERENT NEEDS?

Yes, absolutely. The human body has unique needs and wants. And when those needs are met the mind and the physical body are loving it. So first we look at any physical ailments or respiratory issues that we can adapt yoga to, and then we consider any other rehabilitation that can be addressed through yoga. And just looking at those aspects will influence so many things for an individual's yoga experience, and then that's where you see the positive changes starting to happen.

YOU ADAPT A LOT OF YOUR YOGA SEQUENCES TO THE SEASONS, WHY IS THIS?

As I mentioned, one of my takeaways from yoga is leading an ethical life and organic way of life. So your yoga practice shouldn't be separate from that. What you are investing your time into when you're practising, say, a posture practice, if it's aligned to what's happening in nature, it's definitely going to raise your awareness of what's happening in nature and how that influences you. And so you will become more adaptable and in more harmony with it, rather than feeling resistant to it. So that's one of the reasons. And because yoga and ayurveda work hand in hand, this is where I've gone deeper into it. We looked at how to teach a sequence that's aligned to the season to have more potency to the practices we do on the mat and even throughout the day, from morning to evening, that will pretty much keep us in harmony with the natural changes that are happening within us and around us.

SINCE THE RECENT BUSHFIRES AND FLOODS PEOPLE HAVE BEEN EXPERIENCING A LOT MORE CLIMATE ANXIETY. CAN YOGA HELP SOMETHING LIKE CLIMATE ANXIETY?

Yes, in short, of course. Yoga means union; that we are part of this planet. You know, we are part of this earth, this body is a part of this planet. So whatever Mother Earth is feeling, we are also feeling. So we're not separate from that. But how can we address something that's happening on a planet level if we cannot face what's happening on this [Supriya puts her hand on her heart] micro planet level? This is what yoga can help with.

WHAT ASANA/ POSTURE WOULD YOU RECOMMEND SOMEONE TRY IF THEY WERE EXPERIENCING A LOT OF ANXIETY IN ONE GIVEN MOMENT?

I would definitely go into some light stretching, because that will open up the airways, so, a couple of side bends, so raise the arm over the head to the left, raise the arm over the head to the right to open up the intercostals and the external intercostal muscles of your ribs and then some stretching of the chest, interlock

the fingers behind you to open up the chest and look up. If this is not the range of motion, then just spread your arms out behind you and look up. And then do some head rotations. So immediately what will happen is you'll release all the tensions from the muscles that are used to breathe slowly or deeply. Deep breaths or slow breaths are not the same for everyone. So it varies from person to person. Our breath rates are different. So a couple of side bends, then a few cat cows or seated cat cows, then just lay down on a bolster along your spine and the back of your head in a reclining modified fish pose. For this you just put a nice big bolster or some good pillows down your back and lay on it, so your whole spine and your head gets nice support and you get to lay down a little bit elevated. So all these muscles that we're talking about, they open up and you're in a position to breathe freely instead of tightly. The way I work with my clients or students is just to really look at the physical position you've been in all day and just to reverse that straightaway.

HOW DO YOU SEE YOGA HELPING PEOPLE INTO THE FUTURE?

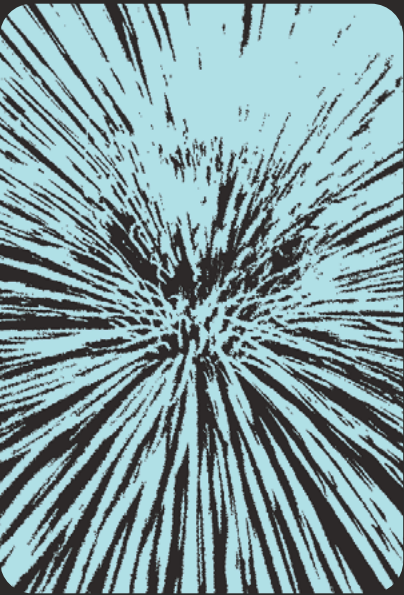
It's a tool for expansion, so evolution, basically it's a transformation tool with no dogma. So more and more people are expanding their awareness now, more and more people are subscribing to personal development of all sorts. So yoga is just going to keep going for that reason. It's a great companion.

# Winter

FUNGI, SOIL,  
WORMS, AND FOOD

Everything arises from and descends to the earth...

Winter is a time for deep reflection. For this season we reflect on fungi and the evolutionary story of soil, how important composting is for slowing down global warming, and what kind of closed loop energy systems you can have at home.



Time of *dagara* (frost)  
and *gulgadya* (grasstree)  
on Dharug land<sup>2</sup>

<sup>2</sup>. *Cooree Mittigar* by  
*Jasmine Seymour*  
and *Leanne Watson*

FUNGI WALKING MEDITATION	<i>Kath Fries</i>	38
INVISIBLE RIVERS AND REBUILDING THE EARTH'S SOIL SPONGE	<i>The Tangled Podcast</i> <i>with Julian De Lorenzo</i> <i>and Walter Jehne</i>	42
WORMFARM COMPOSTING	<i>Ingechu, Joel Flanagan</i> <i>&amp; Leonardo Sunshine</i>	46
PERMACULTURE SYDNEY WEST	<i>Greg and Vera Meyer</i>	48

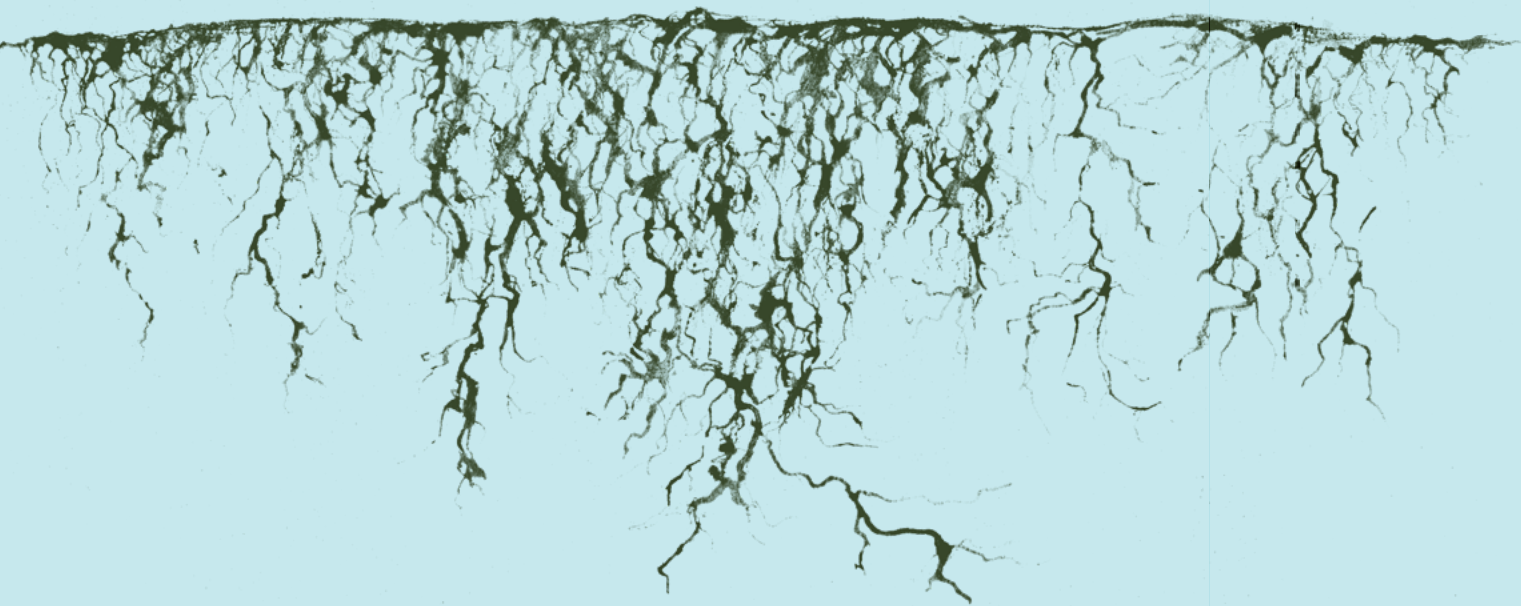
# Fungi Walking Meditation

During walking meditation, I often visualise the pressure of each footstep on the ground, touching the vast fungal mycelium networks in the soil beneath my feet. This simple practice expands into feeling part of the complex interconnected systems within the Earth.

Begin by bringing your attention to your breathing, feel into your body and into your feet. Take a moment to think about the deep history of the Land on which you are standing and all the people who have stood here before you and cared for this place – especially the First Nations custodians of these Lands – and their ongoing connection to the ground on which you are standing.

Half close your eyes and soften your gaze, look at the ground about a metre and a half in front of you. Gently hold your gaze on the ground, there's no need to look around – you're focusing on the sense of touch, rather than sight.

Relax your shoulders and breathe into your belly. Now lift your foot. Breathe in. Put your foot down in front of you, first your heel and then your toes. Breathe out. Feel your feet solid on the Earth. Step forward slowly, feel gravity gently pulling your foot back to the ground. Feel the pressure of your heel meeting the ground and how this pressure rolls through your foot, from your heel to the arch of your foot, to the ball of your foot then into your toes. Keep your shoulders and arms relaxed. Feel your feet grounded on the solid earth with each step you take. Move slowly at your own pace, follow your breathing. There's a gentle rolling rhythm to the way that you're walking. This rhythm is led by your breathing and is felt through your whole body. In walking meditation, with each step we take we are kissing the ground with the soles of our feet. We are walking on a living being that is supporting not just us, but all of life. A lot of harm has been done to the Earth, but with each step we can feel this sentiment of kissing the ground with our feet, as a way of expressing gratitude, kindness, connection and care. The Earth is a teacher, who is always there. When you bring your awareness to this connection you can feel how the Earth is always greeting your feet, keeping you solid and grounded. The rhythmical rolling movement of walking meditation brings your mind to meet your body and your body to meet your mind. Each step is an act of touching the Earth, connecting your body to the ground, to the lively soil under and around your feet. Each breath brings the world, and the present moment, into your body, and then releases back into the world, in a continuous cycle of exchange. Walking meditation opens your awareness to the symbiosis that exists between yourself and your surroundings. As you move across the ground in front of you and through the air around you, your movement is not just about your mind slowing down to meet your body, but your body also moving to meet your mind. This process of being attentive to your breathing and walking, allows each step to connect you more deeply into your own body and into your larger body of the Earth.



# Invisible Rivers and Rebuilding the Earth's Soil Sponge

PEDOGENESIS ~  
SOIL FORMATION



THE *TANGLED* PODCAST IS A SERIES OF INTERVIEWS BY JULIAN DE LORENZO ABOUT REGENERATIVE AGRICULTURE AND LANDSCAPE REHYDRATION. TO LISTEN AND FIND OUT MORE ABOUT RE-THINKING HUMAN SYSTEMS FROM THE *TANGLED* PODCAST FOLLOW THE QR CODE.

THE *TANGLED* PODCAST WITH JULIAN DE LORENZO AND WALTER JEHNE

WALTER JEHNE,  
*TANGLED* PODCAST

“420 million years ago there was no life on land. There were just oceans, and life in the oceans, primitive fishes, but no life on land. The life in the oceans was limited by nutrients, which had to be leached from the rocks, and so, there was a real competitive advantage of fungi colonising rocks to solubilise nutrients, and of course those fungi then started breaking down that rock to get the nutrients, leaving behind organic detritus. The fungi heterotrophs, animals effectively, are genetically like us, they can't make sugars - they can't make energy, so they had to form a symbiosis with plants - with algae, to fix carbon, to fix sugars, for their growth. And we see those all around us, pedogenesis. So those lichens on rock, concrete, wood, plastic, everything breaking it down. They're really those primary solubilising microbes that drive the whole process. And pedogenesis is simply: soil formation, soil genesis. And it was really the formation of putting organic matter into the soil, into that mineral detritus that allowed those soils to hold more water, to make nutrients more available, to let roots grow to let plants grow, and then very very rapidly, because of those pedogenesis biosystem processes we developed forests across 95% of the land's surface on this planet. A massive draw down of carbon, and a massive resilient forest biosystem. But really what those fungal pedogenesis processes did, they created the earth's soil carbon sponge.”

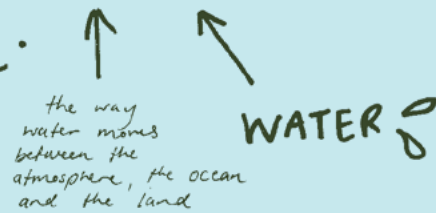
Walter Jehne is a soil microbiologist and the director of Healthy Soils Australia. His message is this: we need to rebuild the earth's carbon soil sponge.

JULIAN DE LORENZO,  
*TANGLED* PODCAST

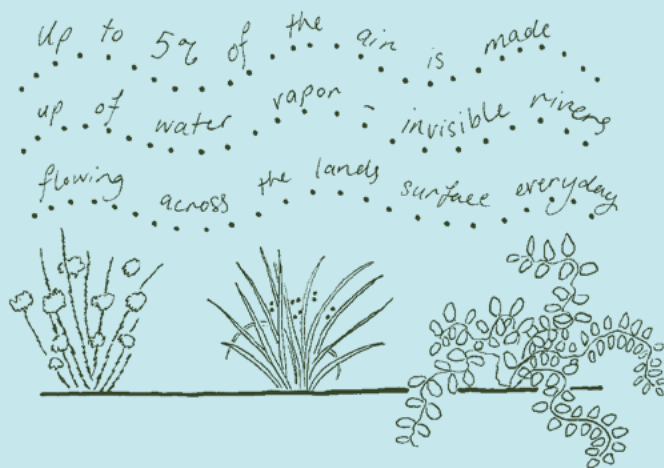
Why? “Because so many of the problems we're facing: extreme weather events from climate change, desertification, loss of biodiversity, water shortages, food shortages, reduced food nutrition and many others, can all be minimised - if not entirely eliminated - if we can rebuild the living skin of the earth: the soil.”

The drawings on the following pages are a visual response to Julian's interview with Walter Jehne on the importance of rebuilding the earth's top layer soil:

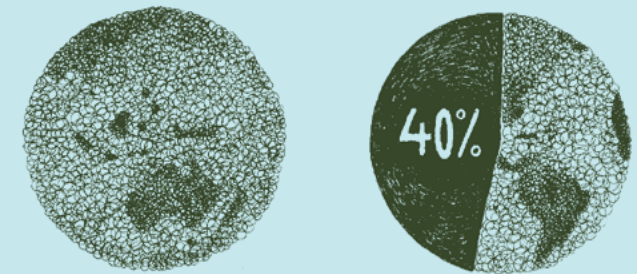
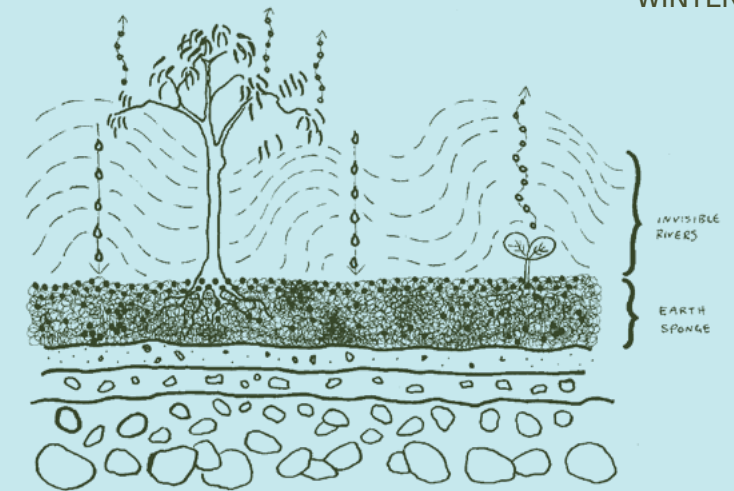
95% OF THE  
EARTH'S HEATING  
AND COOLING DYNAMICS  
IS GOVERNED BY  
THE HYDROLOGICAL  
CYCLE.



Compared to carbon dioxide CO2 being responsible for only 4% of global heat dynamics.



The earth's top layer soil acts as an insulative layer or a living skin. It retains moisture (water), maintaining vegetation (plants), and releases gas (heat/water vapour) through plants (evaporation/transpiration), keeping the earth cool.



OVER THE LAST 8000 YEARS WE (HUMANS) HAVE CREATED 5 BILLION HECTARES OF MAN MADE DESERT AND WASTELAND. THAT'S ABOUT 40% OF THE EARTH'S SURFACE.

So how do we rebuild the earth's soil sponge?

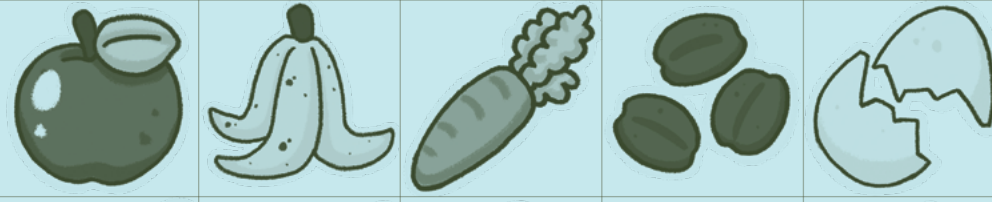
*Composting.*

If you redirect all the organic waste coming out of your kitchen into a composting system - aerobic composting (air), anaerobic composting (no air) or vermicomposting (worms) - back into the earth, you are actively rebuilding the earth's carbon soil sponge.

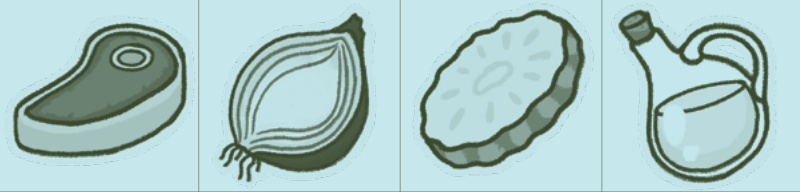
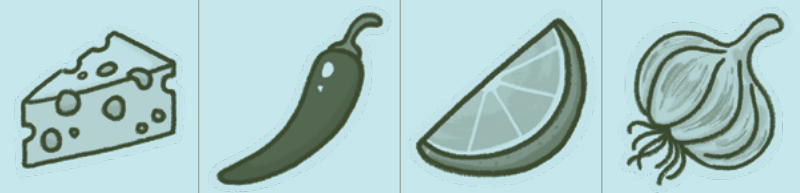


# Worm Farm Composting

Each composting system is a little different. Vermicomposting is working with the magic of worms to break down food scraps from your kitchen, making beautiful compost and nutritious worm tea for your garden. Want to start a worm farm but not sure how to take care of worms? Scan the QR code and play the worm farm videogame! The game lets you practice taking care of a worm farm while learning cool facts and tips about worms along the way.



GOOD FOOD FOR WORMS



BAD FOOD FOR WORMS



ART BY INGECHU  
 PROGRAMMING BY JOEL FLANAGAN  
 SOUND BY LEONARDO SUNSHINE

# Permaculture Sydney West



I take a little drive up to Northmead to visit Greg and Vera, the current coordinators of Permaculture Sydney West. I pull up outside their modest weatherboard home, sing out to them at the front door, and a small highland terrier welcomes me in. 'Her name's Lily, she's very gentle' says Vera as Lily escorts me through their home to the backyard. Greg points to the rainwater tank that connects to the roof gutters. 'We get two uses for every drop of rain that goes into that tank'. This means Greg and Vera use the water they catch from their roof in the house - bathroom, kitchen, and laundry - then onto the garden. The property is alive. I see the rain tank connected to the irrigation system that runs from the highest point in their backyard through their tiered garden beds running along the contours of the backyard slant as keylines. They walk me through the garden. They're growing everything from herbs to tomatoes, kale, and cucumbers. There are banana trees to slow down the water flow on the slanted property, preventing soil erosion. We get inside the chicken coop, where they've just applied a dense layer of mulch to stop the chooks - ISA browns, bantams, Orpingtons - sinking in all the mud from the recent relentless rains. The chooks are so friendly, nibbling at my boots. Up the back of the chook house are three bath tubs filtering the greywater from the house, ready for the garden. Greg is chatting to me about how he got into permaculture around 2009 when he was invited to a conference in the USA on sustainability. That was it for him, when he got back to Australia he looked up a local permaculture community to see if anything was happening in Western Sydney and he found Permaculture Sydney West (PSW). Greg and Vera joined and have been running workshops for PSW ever since - from how to make your own soap to how to grow your own food. While Greg continues talking we're at the very back of the property now, next to the three-bay composting system that runs alongside their neighbour's fence. I notice there's a gap in the fence which Greg mentions allows his neighbours through so they can bring their compost over. 'That would be the dream,'



TOP: TIERED GARDEN BEDS RUNNING ALONG THE SLOPE OF THE PROPERTY IN A KEYLINE DESIGN ALLOWING WATER TO GRAVITATIONALLY RUN DOWN FROM THE FILTRATION SYSTEM. PASSIONFRUIT ARCHWAY PROVIDING SHADE AND FRUIT. BANANA TREES PREVENTING SOIL EROSION ON SLANTED PROPERTY AND PROVIDING FRUIT

LEFT: A RAINWATER TANK CONNECTED TO THE ROOF GUTTER COLLECTING RAINWATER FOR FUTURE USE IN THE HOUSE AND GARDEN



## A BACKYARD VISIT WITH GREG AND VERA MEYER

he says, ‘for the whole neighbourhood to drop our fences and share our backyards collectively’. He then goes on to talk about how growing community is just as important as growing food when it comes to sustainability. ‘It’s all about sharing resources and making them go further so there is no waste’. I look around their backyard. Every object has been upcycled: the bricks forming the garden beds, the sandwich boards creating their compost bays, the found bits of mesh and wire acting as lattice for their food vines, the stacked and stored offcuts of hardwood for future use. It’s a cyclical power station where nothing goes to waste. We head inside for a pot of tea, a lemon myrtle x lemon verbena x lemongrass blend from the garden, and we continue discussing the potential applications of permaculture in small spaces like apartment balconies or tiny backyards.

*What is permaculture?*

Permaculture is working towards a ‘permanent agriculture’ or ‘permanent culture’ through growing your own food with ecological design that works with people, the natural environment, and ecosystems. The concept of permaculture has existed for thousands of years amongst many First Nations communities living in close relationship with the land. However, the urban jungle has become a difficult place to navigate when it comes to the basic principles of caring for the earth, people, and sharing. That’s where permaculture pops up, providing creative solutions for self-sufficiency in modern day environments, where everyone is invited to have a go.

*“I believe that unless we adopt sophisticated Aboriginal belief systems and learn respect for all life, then we lose respect for our own life, not only during our own lifetime but also any future opportunity to evolve our human potential.”*

Bill Mollison (Permaculture founder)

*Permaculture: A Designer’s Manual*

HERE ARE SOME OF THE BASICS THAT GREG, VERA, AND OTHER MEMBERS TEACH AT PSW:

RIGHT: A THREE-BAY BATHTUB PLANT FILTRATION SYSTEM CLEANING THE GREYWATER (WASTE WATER FROM WASHING MACHINES, SHOWERS, BATHS AND SINKS) COMING OUT OF THE HOUSE SO IT’S SAFE TO USE ON YOUR GARDEN. THIS ALLOWS TWO USES FOR EVERY DROP OF WATER.



# Spring

GIVING BACK  
TO COUNTRY,  
COLLECTIVE ACTION,  
LOCAL PLANT  
KNOWLEDGE

Spring is a wonderful time to give back to Country. For this season we listen to Dharug elder Aunty Julie, chat with and learn from the community planting collective Western Sydney Wildflowers, and look into some local planting knowledge such as how to plant native plants and where to source them.



Time of *bayinmarri* (westerly wind), *dumarang* (flowering plants) and *durali* (brolga) on Dharug land<sup>3</sup>

3. *Cooee Mittigar* by  
Jasmine Seymour  
and Leanne Watson

GIVING BACK TO COUNTRY	<i>Aunty Julie Clarke-Jones (Webb)</i>	54
WESTERN SYDNEY WILDFLOWERS	<i>Lilian Kirby</i>	58
A SIMPLE GUIDE TO ASPECT FOR WESTERN SYDNEY GARDENS	<i>Western Sydney Wildflowers</i>	64
THE LOVELIEST WAY TO PLANT NATIVE PLANTS IN WESTERN SYDNEY	<i>Western Sydney Wildflowers</i>	74
MURU MITTIGAR NURSERY	<i>A Dharug organisation providing native plants on Dharug land</i>	80

# Giving Back to Country

WITH DHARUG ELDER AUNTY  
JULIE CLARKE-JONES (WEBB)

I have the hindsight now of 57 years in Parramatta, knowing how Country looked, and what the changes are, and how the river looked a long time before we cement sided and bottomed out everything and took over the riverbanks and built high buildings that block out the sun. Sometimes having a talk to custodians is really helpful because it can give you a completely different perspective on Country, on what she looks like now and how she was and how she has survived continual changes and abuse.

Obviously our big focus is on living as one and making sure whether we're living, working, playing, creating, that we do follow the principles of only taking what we need and making sure that we don't continually take, that at some point we say 'thank you for what you've given us' and that we give back. We have to give back to her (Country), and the way we give back to her is to look at how we live everyday. How can we care for Country? How can we support Dharug people to care for Country?

We created Dharug and Allies For Nura Alliance (DAFNA) through Pari because art is such a powerful voice and a powerful tool in resistance and activism. It can be loud, it can be quiet, but it's very powerful. And we recognise as Dharug people that we can't do this on our own. We need our allies to stand with us. And I think fortunately now we're heading into an era where people generally are more environmentally



# Western Sydney Wildflowers



WHAT IS 'WESTERN SYDNEY WILDFLOWERS'?

Western Sydney Wildflowers are a bunch of friends with a love for local native plants. We work with Cumberland City Council to install and maintain wildflower gardens in parks, we go on plant I.D. walks in nature reserves and help each other identify native plants, we even had a terrarium making workshop where we experimented with using local plants. We also have a Facebook Group where we share photos, events and resources, all related to the wonderful wildflowers of Western Sydney.

WHY DID YOU START WSW?

Western Sydney has unique plant communities found nowhere else in the world but due to a long history of farming, development and urbanisation, all the patches of remnant bushland in Western Sydney are now classified as Endangered. This means that they are just one step away from extinction! We love the diversity of local flora & fauna found in Western Sydney and there are lots of things we can do to help support the ones that have survived. We want to connect with other locals who care about the natural environment, to spark interest and foster awareness about their beautiful bushland, to get involved with conserving what's left of it and to enhance what's conserved by propagating and planting as many local species as we can.

WHAT DO YOU LOVE ABOUT THE WILDFLOWERS OF DHARUG LANDS/ WESTERN SYDNEY?

Everything! The wildflowers of Western Sydney are not big or showy, many are very tiny and are easily overlooked. Some may be short-lived, dull in colour and have no perfume. You may even mistake some for weeds. I love the fact that these plants evolved with the soil,



WITH LILIAN KIRBY



the seasons, the climate, and the available water, and have intricate relationships with fungi, other plants, and the creatures that were once abundant across the Cumberland Plain and its surrounds. If you take the time to look at them closely, you will see that many of the tiny flowers are very complex and beautiful. It amazes me that over 1200 different species can still be found in Western Sydney. For me, finding a tiny flower in the bush is like a treasure hunt. I just love the incredible diversity of species and how unique they are.

WHAT IS  
IMPORTANT ABOUT  
PLANTING NATIVE  
WILDFLOWERS  
ENDEMIC TO  
DHARUG LAND?

We plant native wildflowers for the benefit of the bush, urban wildlife and people. At our planting days we use local provenance plants. 'Local provenance' means a plant whose mother comes from the area that you want to plant in. It's important to source these plants in order to maintain the genetic integrity of a plant population and prevent unique local characteristics from becoming extinct.



Adding more provenance plants into the environment will also improve the genetic diversity of urban bushland remnants, making them more resilient to threats like pests and diseases, and extreme weather events like fires and drought. Creating habitat is also really important. We share our cities with many other creatures that were here before us and every day the resources they need to survive are gradually diminishing. We need to provide a diverse range of plants to accommodate a large variety of urban wildlife. This way there is always some wildflower in bloom for the insects, there are spiky bushes for small birds and reptiles to hide in, and tall trees for large birds and possums to hang out in. Local residents benefit too. Everyone knows Western Sydney swelters in summer. We're able to add trees into public spaces which not only look lovely but will one day help cool recreational spaces and nearby properties by providing much needed shade.



WHAT'S INVOLVED IN  
A DAY OF PLANTING  
WITH WSW?

The Wildflower Garden Bushcare Group revamps garden beds in public parks by planting lots of local wildflowers. On arrival you will be greeted by a bunch of people wearing hats. We start by weeding the garden bed before planting the tubestock. We give the new plants some organic fertiliser, just to help them get the best start in life, and then give them a really good water. Like all good volunteering activities, morning tea is a big part of the day. Usually there is way too much food and we chill out in the park and have a good chat. We have a monthly get-together for maintenance, which mainly involves weeding and picnics.

HOW DO YOU FEEL  
BEFORE AND AFTER  
YOU PLANT THE  
WILDFLOWERS?

Great! It is such a joy to plant wildflowers with friends. Seeing a run-down garden bed, that had little more than weeds and was regularly sprayed with herbicide, transformed into a wildflower garden, is such a delight! Experiencing the little tubestock we planted establish so quickly and flower so abundantly within their first year, is really exciting. It goes to show that with the smallest amount of love and care, local plants absolutely thrive in tough conditions, they are just perfectly adapted to the soils and the climate of Western Sydney.

WHAT IS THE BEST  
WAY FOR PEOPLE TO  
CONNECT TO WSW?

Anyone can join the Western Sydney Wildflowers Facebook Group :) There you can connect with other like-minded people, share photos, ask questions, learn about the plants and animals that live in your area and get notifications of Wildflower Garden Days and other local events. If you want to come along to a planting day but you don't like Facebook, contact Cumberland City Council and tell them you want to join the Wildflower Garden Bushcare group and they'll sort you out.

DO YOU HAVE  
A FAVOURITE  
WESTERN  
SYDNEY/DHARUG  
WILDFLOWER?

There are so many fascinating plants like the Chocolate Lily *Arthropodium fimbriatum* which has purple flowers that actually smell like chocolate. There is the Native Bluebell *Wahlenbergia* which little native bees like to sleep inside because the flowers close overnight and open again in the sunlight of the morning. There are different Mistletoe species *Amyema* which mimic the foliage of their particular host plants. And there are ground orchids that are

dormant most of the year, living underground, most have symbiotic relationships with fungi, some are semi-parasitic on the roots of other plants, and they only emerge from the ground at flowering time. There are beautiful plants too, like the bright yellow *Hibbertias* and the lovely white riceflowers *Pimelea* and *Ozothamnus* and in the late winter the Acacias, the Native Indigo *Indigofera*, and the yellow pea flowers *Dillwynia*, *Daviesia* and *Pultenaea* light up the bush. It's very difficult to choose a favourite.



# A Simple Guide to Aspect for Western Sydney Gardens

Knowing about aspect is important when you are choosing which plants to put into your garden, because different species require specific amounts of daylight each day.

If you know which aspects are bright and hot and which aspects are dark and cool, you can design your garden in a clever way that helps protect your home from summer heat or let lots of light through, depending on your needs.



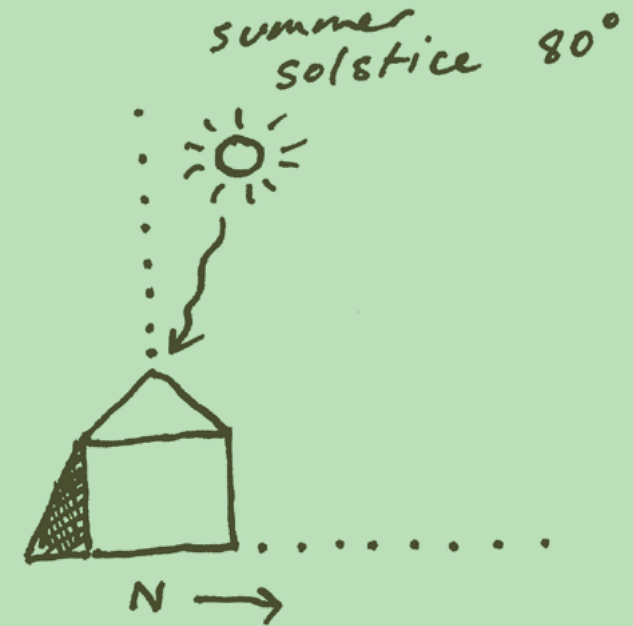
# ASPECT

In gardening, "aspect" refers to the direction your garden faces in relation to your house – North, South, East or West. The aspect determines how many hours of direct sunlight your garden receives at different times of the day and at different times of the year.

In general, a north-facing garden will get the most hours of direct sunlight and a south-facing garden will get the least amount.

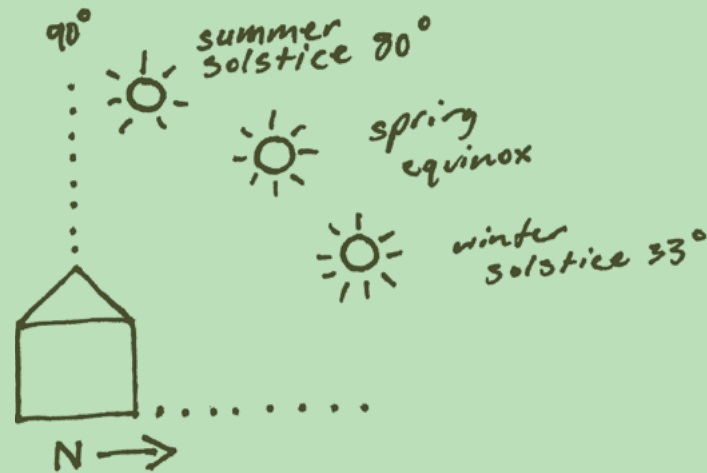
*Here's why:*

First, let's pretend the universe revolves around your garden. The sun rises in the east and sets in the west. When it rises, it doesn't move across the sky straight overhead. In Sydney, in summer, it slants from the sky down at about 80 degrees. In winter it only reaches around 33 degrees. Here's a diagram to explain what I mean:

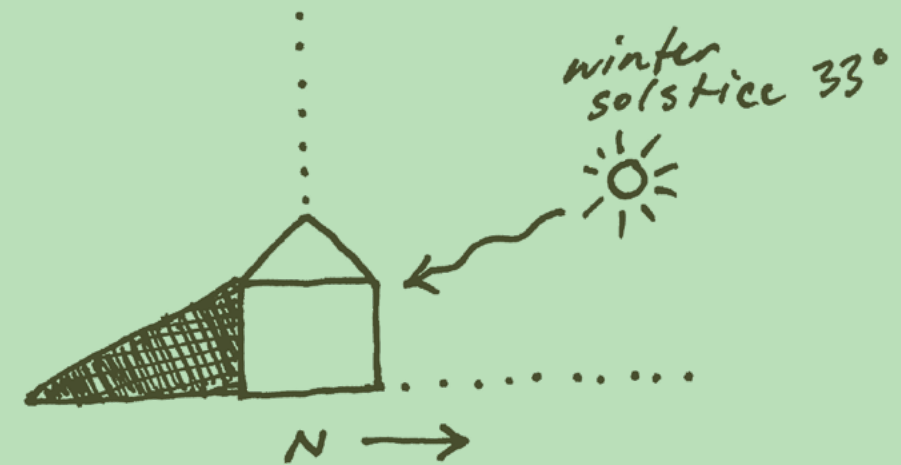


Higher angle of sun in summer makes shorter shadow south of property.

DIAGRAM:  
ANGLE OF SUN AT ITS  
HIGHEST POINT IN  
SUMMER VS WINTER.  
N = NORTH.



This means for most of the year, your house casts a shadow to the south and in winter it casts a long shadow to the south.

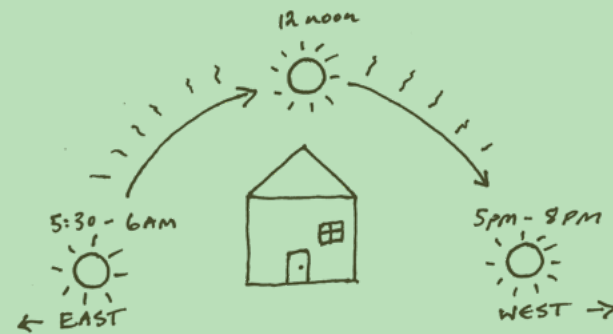


Lower angle of sun in winter makes longer shadow south of property.

The strength of the sun also differs during the day. In the morning, when the sun rises in the east, the sun is less bright and the air is cool, so the sunlight is gentle on your garden. The east aspect has this gentle sun from sunrise until about midday, before it is cast into shadow. As the sun moves across the sky it gets brighter and warms up the air. It is at its strongest between 10am and 4pm. During most of the day, the sun is illuminating the north aspect.

In the warmer months (late spring and summer) by 4pm on a sunny day, a north- or west-facing garden has been exposed to hours of strong sun, whereas the east and south have largely been protected from the strong sun.

DIAGRAM:  
SUN STRENGTH.  
RAYS REPRESENTING  
THE STRONGEST  
TIME OF THE DAY.



SUMMARY:  
CHARACTERISTICS  
OF ASPECT

*East*

Part sun. Cool, mild sun for half the day. Protection from hot westerly winds.

*North*

Full sun. Strong, direct sun for most of the day. Generally drier soil.

*West*

Part sun. Strong, hot sun for half the day. Generally drier soil. Exposure to occasional hot westerly winds.

*South*

Shade in winter, part sun in summer. Indirect light all day. Protection from hot, drying sun. Generally moister soil.

## MICROCLIMATES

Most people don't have a house in the middle of an open field. Generally, houses are surrounded by other structures like fences and neighbouring houses as well as plants that cast their own shadows and create their own microclimates.

For example, you may have a north-facing aspect but many trees and bushy shrubs that block the sun during the day. So even though the north aspect is characterised by strong, hot, direct sun, you may have a cool, shady garden with the potential to plant a variety of species that require part sun and part shade.

If you have a large enough property and a house low enough, a south-facing garden may also have a band of full sun at the most southerly boundary, giving you the potential to plant species that prefer more light.

Every garden is different.

The best and easiest way to understand how much sun different parts of your garden receive, is to go out into your garden throughout a sunny day and observe how the sun creates shadows of buildings and trees on your property. Learning about the aspect can help you with your observations and give you clues about what to expect.



## USING PLANTS STRATEGICALLY

Now that you know all about aspect, you can start thinking about whether it could be useful for your garden to help block heat or let light through to your house. Here's some ideas...

### *East-facing aspect:*

You may wish to use low shrubs and a variety of groundcovers so you don't block the beautiful morning light from shining into your home.

### *North-facing aspect:*

You might think about putting a deciduous tree to the north of your house to give you shade in summer but allow light in during winter. You could use a tall tree with a high canopy to block the high-angle sun of summer whilst allowing the low-angle sun of winter shine through. You may use a tree with an open canopy such as a Eucalyptus to allow dappled light through year-round.

### *West-facing aspect:*

You may wish to use a variety of dense-canopy trees and large bushy shrubs to block the harsh afternoon sun from heating up the west side of your house in summer.

### *South-facing aspect:*

You may wish to use a variety of low groundcovers and small bushes to allow as much natural light into the south of your house as possible.



## CHOOSING THE RIGHT SPECIES FOR THE RIGHT PLACE

Once you've decided how you are going to use your plants, you can start looking for species that will tolerate the amount of available light in your garden. Some plants will burn if they get too much light, others will be weak if they don't get enough light and become deformed in shape and susceptible to pests and diseases. Most plant labels describe how much sun the species requires.

There are a variety of local plant species that are well adapted to different amounts of sun and shade. On the next page, we list some examples suitable for clay soils on the Cumberland Plain.

	<i>Full Sun</i>	<i>Part Shade</i>	<i>Shade</i>
<i>Tree</i>	EUCALYPTUS SIDEROXYLON 'MUGGA IRONBARK'	MELIA AZEDARACH 'WHITE CEDAR'	BACKHOUSIA MYRTIFOLIA 'CINNAMON MYRTLE'
	MELALEUCA LINARIIFOLIA 'SNOW IN SUMMER'	TRISTANIOPSIS LAURINA 'WATER GUM'	GLOCHIDION FERDINANDI 'CHEESE TREE'
	BRACHYCHITON POPULNEUS 'KURRAJONG'	CALLISTEMON CITRINUS 'CRIMSON BOTTLEBRUSH'	ALECTRYON SUBCINEREUS 'WILD QUINCE'
<i>Shrub</i>	OZOTHAMNUS DIOSMIFOLIUS 'RICE FLOWER'	GREVILLEA JUNIPERINA 'PRICKLY-LEAVED SPIDER-FLOWER'	BREYNIA OBLONGIFOLIA 'COFFEE BUSH'
	PIMELEA LINIFOLIA 'SLENDER RICEFLOWER'	DODONAEA VISCOSA 'HOP BUSH'	INDIGOFERA AUSTRALIS 'NATIVE INDIGO'
	KUNZEA AMBIGUA 'TICK BUSH'	PITTOSPORUM REVOLUTUM 'HAIRY PITTOSPORUM'	POLYSCIAS SAMBUCIFOLIA 'ELDERBERRY PANAX'
	CRYPTANDRA SPINESCENS 'SPINY CRYPTANDRA'	MELALEUCA THYMIFOLIA 'THYME- LEAVED HONEY MYRTLE'	MYRSINE VARIABILIS 'MUTTONWOOD'
<i>Groundcover</i>	BULBINE BULBOSA 'NATIVE LEEK'	AJUGA AUSTRALIS 'AUSTRAL BUGLE'	VIOLA HEDERACEA 'NATIVE VIOLET'
	CHRYSOCEPHALUM APICULATUM 'YELLOW BUTTONS'	DIANELLA LONGIFOLIA, REVOLUTA OR CAERULEA	PRATIA PURPURESCENS 'WHITE ROOT'
	SCAEVOLA ALBIDA 'PINK FAN-FLOWER'	DICHOPOGON FIMBRIATUS 'CHOCOLATE LILY'	FERNS
<i>Climber</i>	RUBUS PARVIFOLIUS 'NATIVE RASPBERRY'	EUSTREPHUS LATIFOLIUS 'WOMBAT BERRY'	GEITONOPLESIMUM CYMOSUM 'SCRAMBLING LILY'
	HARDENBERGIA VIOLACEA 'FALSE SARSAPARILLA'	PANDOREA PANDORANA 'WONGA WONGA VINE'	MORINDA JASMINOIDES 'SWEET MORINDA'

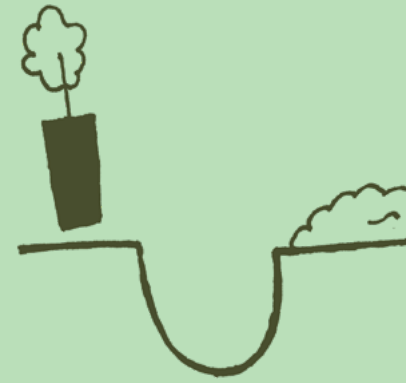
*Where to find local native plants to buy*

Harvest Seed & Native Plants, 281 Mona Vale Rd, Terrey Hills.  
PlantsPlus, Cumberland Forest, 95 Castle Hill Rd, Pennant Hills.  
Sydney Wildflower Nursery, 9 Veno St, Heathcote.  
Muru Mittigar, 128b Terrybrook Rd, Llandillo. Appointment essential.  
Call 4730-0400.

Western Sydney Bushland Nursery. Fairfield, Sydney. Appointment essential. Contact @westernsydneybushlandnursery Instagram.  
Local councils often offer residents free native plants.  
Contact your council for more information.



# The Loveliest Way to Plant Native Plants in Western Sydney



1. DIG A HOLE AT LEAST 2 x WIDER AND SLIGHTLY DEEPER (ABOUT 1-2CM) THAN THE SIZE OF THE POT THE PLANT CAME IN.



2. IF YOU'RE PLANTING TUBESTOCK, TAKE THE PLANT OUT BY FLIPPING THE TUBE UP-SIDE-DOWN AND TAP THE TOP OF THE PLASTIC TUBE GENTLY WITH THE EDGE OF YOUR TROWEL. THE PLANT SHOULD POP OUT EASILY. IF THE PLANT DOESN'T WANT TO COME OUT, YOU'RE GOING TO HAVE TO CUT THE TUBE OFF - DON'T TRY AND RIP THE PLANT OUT OR SQUEEZE THE ROOTBALL.



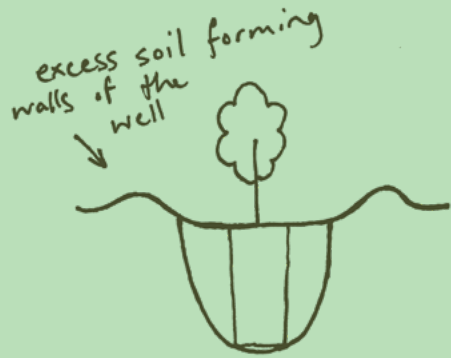
3. PLACE THE PLANT IN THE HOLE. THE TOP OF THE ROOTBALL SHOULD BE ABOUT 1 OR 2CM BELOW THE SURFACE OF THE SURROUNDING SOIL.



4. BACKFILL THE HOLE AND COMPRESS THE SOIL BY DRIVING YOUR FINGERTIPS DOWN INTO THE SOIL AROUND THE ROOTBALL. YOU WANT THE SOIL TO BE MAKING GOOD CONTACT WITH THE ROOTBALL WHEN YOU'RE DONE - NO BIG AIR POCKETS!

You've chosen the perfect local species for your aspect and soil – now you need to put it in the ground as soon as possible. Here's how:

WITH WESTERN SYDNEY  
WILDFLOWERS



## WATER

- Water the soil, not the foliage.
- Water your plant in the morning, before the sun feels hot.
- Don't just give it a misty sprinkle - give it a good soaking every time. This will encourage roots to grow downwards into the soil, instead of just around the surface.
- Water MORE frequently when it's windy, hot or dry.
- Water MORE often if you have free-draining, sandy soil.
- Over-watering can kill your plant (this is normally only an issue for pot plants sitting in saucers and if you have chosen to put a non-local species in a garden with poorly-drained clay soils).

Different soil types have varying degrees of water holding capacity and due to the fact that rainfall is so unpredictable, it is impossible to give an exact guide for how often you should water your new plant.

The only rule that covers most plants is *'keep the soil moist until established'*. How do you tell if the soil is moist? Just because the soil surface looks dry, doesn't mean the soil is dry underneath. Sometimes experienced gardeners can vibrate when the soil is dry but if you're unsure, literally stick your index finger down into the soil until you reach the 2nd knuckle and feel if it's dry or not.

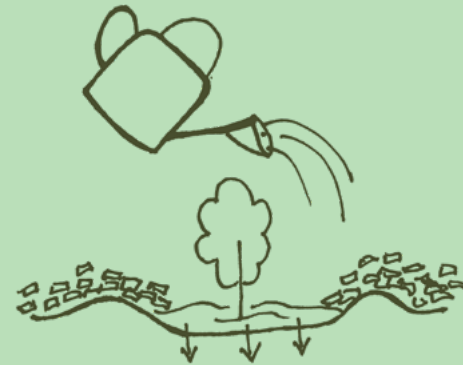
During a dry summer, water your plant 1 or 2 times a day for the first couple of weeks, then gradually peter off, watering every few days for a few weeks, then once a week and then only as needed (like if it hasn't rained for ages or the leaves start to look a bit wilted or crispy).

During winter you may only need to water your plant every few days for the first weeks and then you can peter off from there.

HERE'S A BROAD WATERING GUIDE FOR WHEN YOU'RE STARTING OUT:

5. WHEN YOU'RE DONE, THE LEVEL OF THE SOIL SHOULD BE LEVEL WITH THE TOP OF THE ROOTBALL. BECAUSE YOU PLACED YOUR PLANT SLIGHTLY LOWER THAN THE SURROUNDING SOIL, IT SHOULD END UP BEING IN A SLIGHT DIP IN THE GROUND. IF YOU HAVE LEFT OVER SOIL THAT YOU DUG OUT OF YOUR HOLE, MAKE A WELL AROUND YOUR PLANT.

6. IF YOU KNOW YOU HAVE REALLY POOR-QUALITY SOIL OR IF YOU JUST WANT TO GIVE YOUR PLANT AN EXTRA BOOST IN LIFE, YOU MAY SPRINKLE ORGANIC NATIVE FERTILISER ON THE SOIL AROUND THE EDGE OF THE PLANTING HOLE.



7. PLACE MULCH AROUND THE PLANT ABOUT 7CM THICK. MAKE SURE YOU HAVE COVERED THE FERTILISER WITH MULCH. GIVE THE PLANT ROOM TO BREATHE AND KEEP THE MULCH AWAY FROM THE PLANT STEM TOO.

8. WATER IN YOUR PLANTS THOROUGHLY (EVEN IF IT HAPPENS TO BE RAINING A BIT). IF YOU MADE A GOOD WELL, YOU'LL SEE HOW THE WELL HELPS TO DIRECT THE WATER TO THE PLANT'S ROOTBALL, INSTEAD OF RUNNING OFF THE SURFACE OF THE SOIL. IN A DRY SUMMER USE A FULL 9L WATERING CAN PER PLANT. IN WINTER YOU MAY USE 1/2 A CAN, DEPENDING ON HOW DRY YOUR SOIL IS. IF YOU WANT TO BE EXTRA FANCY, YOU MAY ADD SEASOL TO YOUR WATERING CAN. SEASOL IS A SOIL CONDITIONER THAT SOIL MICROORGANISMS THRIVE ON. SOIL MICROORGANISMS WILL HELP BREAK DOWN THE FERTILISER AND EXISTING SOIL NUTRIENTS FOR YOUR PLANT.



## TROUBLESHOOTING

### *Too dry:*

If you find that water beads off the top of your soil and doesn't soak in, it is hydroscopic (water-repellent). You can fix this by incorporating organic matter to your soil (e.g. compost) or a wetting agent that you add to your watering can, which you can buy from garden centres. You also need to water the soil regularly to prevent the soil going hydroscopic again. If you don't have time for that, you can install drip irrigation or use a sprinkler during the early morning or evening.

### *Too wet:*

If you find the water soaks into the soil but then pools and never drains, you may have compacted clay soils. You can fix this by working organic material into the soil. Sometimes adding gypsum can also help and using soil conditioners like Seasol can help a little bit.

You may think adding sand makes sense but incorporating sand usually does very little to help if you have clay soils because the clay particles are so fine and sticky, they'll just coat the sand and create a soil structure a bit like concrete. You'd need a silly amount of sand (1:1) to actually improve the drainage of your soil if that's the way you want to do things (not very sustainable).

If you find that your garden is always boggy, the smartest thing to do is plant species that like wet feet. There are many local plants in Western Sydney that like boggy soil. Check out the *Plants for Boggy Backyards* resource on the Western Sydney Wildflowers Facebook group page (under 'files') for some recommendations.

Alternatively, you may need to raise your garden up into raised beds.



# Muru Mittigar Nursery

Here are a few plants Muru Mittigar sells in their nursery that you can plant in your own garden, balcony, community garden or workplace. Draw and colour in these local plant species to get to know them:



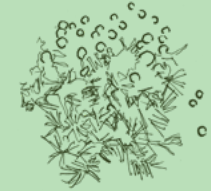
*Hibertia scandens*  
Snake Plant



*Bilardiera scandens*  
Apple Berry



*Hardenbergia violacea*  
Happy Wanderer



*Melaleuca linariifolia*  
Snowstorm



*Tristaniopsis laurina*  
Water Gum



*Callistemon citrinus*  
Crimson Bottlebrush



*Elaeocarpus reticulatus*  
Blueberry Ash



*Leptospermum polygalifolium*  
Jelly Bush



*Backhousia myrtifolia*  
Grey Myrtle



*Melaleuca thymifolia*  
Thyme Honey-Myrtle



*Indigofera*  
Australian Indigo



*Dianella revoluta*  
Blueberry Lily



*Dichopogon fimbriatus*  
Chocolate Lily



*Viola hederacea*  
Native Violet



A DHARUG ORGANISATION  
PROVIDING NATIVE PLANTS  
ON DHARUG LAND

# Summer

ADAPTABLE  
ARCHITECTURES:  
HOW TO TURN  
YOUR HOME  
INTO A LIVING  
ECOSYSTEM

It's often up to 10 degrees hotter in Western Sydney compared to other parts of Sydney during summer. The following designs are adaptable ideas for supporting ourselves, our wildlife, and our gardens during the hot months.



Time of *yuruka* (hot), *burara* (dry), *warada* (waratah) and *manga manga* (lightning) on Dharug land<sup>4</sup>

4. *Coee Mittag* by  
Jasmine Seymour  
and Leanne Watson

PASSIVE ACTIONS	<i>Namika Parajuli</i>	84
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SPECULATIVE ROBOTIC IRRIGATION SYSTEM FOR A PARI ROOFTOP GARDEN	<i>Steph Clarke</i>	96

# Passive Actions

Passive design is much more than channeling the climate to create the most optimal conditions for us. It is about understanding our environment, climate, and the ecosystems that surround us – working with them rather than developing over them. Studying passive design deepened my reverence and appreciation for the natural systems which exist, and increased my desire to be able to design and plan buildings and urban environments with significant regard for their natural context.

As density increases in areas of Western Sydney including Parramatta, we see the lack of consideration that many Sydney apartment block developments have for their environments. Disconnection between the natural environment and homes of any type is exacerbated by lack of access to green and open spaces, which is an area of concern for many LGAs around Sydney.

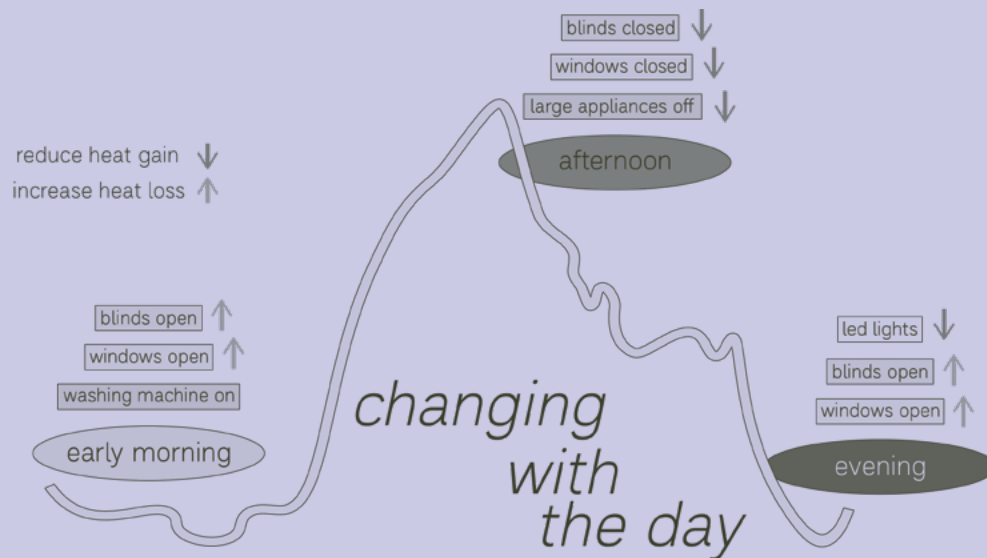
Incorporating passive techniques into the design and construction of a building is incredibly important. But another component which is just as necessary – and especially significant for homes where passive design has not been considered – is behaviour. The roots of passive design are in understanding the environment that surrounds us and how it changes through the day, and an understanding of our climate and the changes it goes through can help us to work with it. There are many small interventions we can make within apartments that are accessible, simple, and affordable, that contribute to cooling our homes.

By understanding how temperature changes throughout the day outside of your home as well as the elements within your home that change temperature internally, you can change with the day to keep your internal environment as cool as possible.



## WAYS TO REDUCE HEAT GAIN IN AN APARTMENT:

1. Outdoor blinds on the balcony block or lessen sunlight.
2. Plant a deciduous vine like Wisteria to provide shade. Plants that are deciduous provide shade during summer and let the sun through during winter.
3. Insulating window film blocks heat.
4. Curtains reduce and block sunlight and heat.
5. Operate windows and balcony doors to allow for cooling air and breezes, and prevent hot air from coming inside.
6. Houseplants help with cooling because as they transpire, heat is removed from the air. Plants shown in the render include Snake Plant, Rubber Plant, Weeping Fig and Palm.
7. Ensure your ceiling fan is set to counterclockwise – when the fan spins quickly in this direction, air is pushed down to create a cool breeze. Ceiling fans can also be used in winter to redistribute warm air.
8. Avoid using the stovetop or oven during the warmest parts of the day.
9. Make sure your lightbulbs are LED as they emit much less heat compared to traditional incandescent bulbs.



# Bird Bath for a Balcony

Our strategy for climate resilience is a simple assemblage that can be fitted to a balcony railing. Bird bath for a balcony is aimed at providing some relief from the hot breezes of a Western Sydney summer for both its human and non-human inhabitants.

Bird bath for a balcony is constructed of a few elements that are easily acquired or found as household waste—a right-angle bracket, a hook to fit over your handrail, and a shallow (approx. 5cm deep) ceramic or plastic planter box tray, and a plywood shelf. All elements should be bolted, screwed or tied together and hung over a balcony handrail, ideally positioned in front of an openable window that brings a breeze into your home. This assemblage can be easily configured to fit to most balcony constructions, or even a window sill, and is scalable based on available components.

Bird bath for a balcony works by generating a modest amount of evaporative cooling, a process of phase-change cooling that cools hot air when it encounters a body of water and converts its liquid into vapour. Any breeze coming off the bird bath will be cooled as it enters your home. This strategy is most effective at times of low humidity, however the larger the body of water, the better the cooling.

As a bird bath, it provides your bird neighbours with a place to drink, to bathe, and to cool down. Bird baths are especially important in times of drought as a reliable source of water in our urban habitats. It is ideal that it be placed along a balcony with a good distance from any trees to safeguard the birds from any four-legged predators. Clean water should be renewed regularly to prevent stagnation and mosquito infestation.

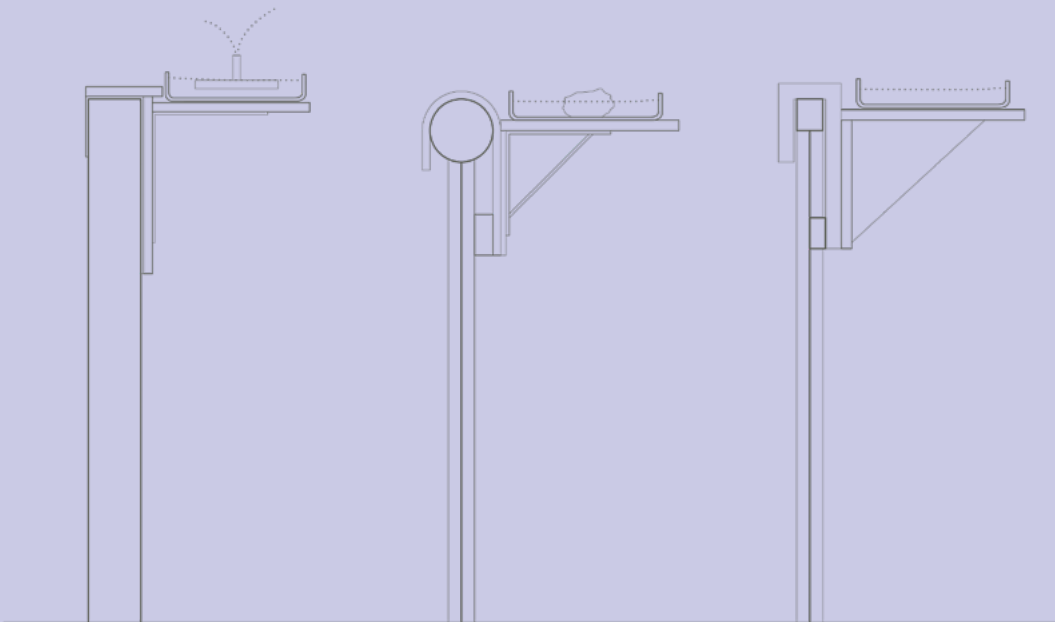
Additions to the assemblage can make it much more enjoyable as a bird bath. Rocks can be placed in the tray to provide birds with a perch; a small solar-powered water pump fountain or a hanging container of water with a hole for a small drip will attract more birds to the sounds of running water. When sunlight hits its surface, the water will throw rippling reflections onto the ceiling for you and the birds to enjoy.

## MATERIALS

2 x Right-angle brackets  
 2 x Hooks (to fit over balcony handrail)  
 Shallow tray (ceramic or plastic)  
 Plywood shelf  
 Screws  
 Bolts  
 Rocks

## PROCESS

1. Screw plywood shelf to right-angle brackets
2. Bolt hooks to brackets
3. Place structure over balcony handrail
4. Place shallow tray on shelf
5. Add rocks and water to tray

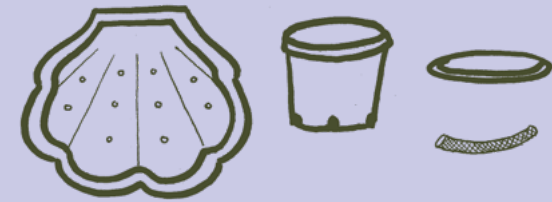


# Making Healthy Soil



**WORM FARM GARDEN  
DESIGN IN 12 EASY STEPS  
WITH HAYLEY COGHLAN**

Here is a closed loop, organic worm farm garden made from recycled materials. This is a simple design that can be made for a balcony or backyard, and can be scaled up or down depending on the materials you use. The design produces three things: great compost, rich worm tea, and easy vegetables and herbs. All you will need is:



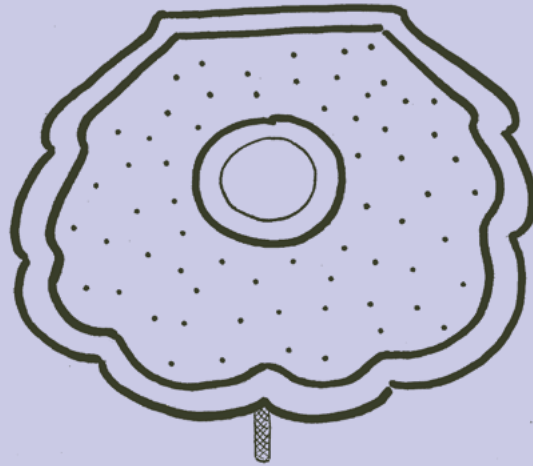
## MATERIALS

A large vessel like this shell pool I found during a council clean up  
*(Tip: always consider the material of the recycled item. Shell pools are polypropylene plastic which is considered one of the safest plastics for food. It is also FDA approved.)*  
A 30cm diameter plastic planter pot with holes in the bottom  
A plate to sit on top of the pot like a lid  
A piece of old hose  
Fish net or old stocking  
Four milk crates  
Garden soil  
Tiger worms

## TOOLS

Drill  
Small and large drill bits  
Rubber band  
Cable tie





1. Decide where your worm farm garden is going to go, and set down four milk crates.
2. Drill 4 - 5 very small holes into the bottom of your large vessel (e.g shell pool) for extra drainage. Note: you do not have to do this step if you are situated on a balcony and just want to collect the worm tea.
3. Drill one large hole at the bottom-front of the shell pool just the right size for the piece of hose to fit through snugly.
4. Using a rubber band, wrap and secure a piece of fish net or a stock to the end of the hose that will go inside the shell (this will prevent soil from clogging the hose).
5. Push the piece of hose half way through the hole.
6. Drill two tiny holes either side of the the hose for a cable tie to fit through and secure the hose flush to the bottom of the shell pool.
7. Place shell pool on top of the four situated crates.
8. Fill the shell pool with garden soil.
9. Create a hole in the middle of the soil to place your plastic planter pot.
10. Place the ceramic plate on top of the plastic bucket as a lid.
11. Sit a bucket under the hose spout to collect the worm tea.
12. Plant your favourite herbs around the planter pot.

You now have a worm farm garden! Place your food scraps in the middle bucket and add some tiger worms. The worms will travel in and out of the compost bucket and the rest of the soil. You can plant a range of herbs in the soil around the bucket. When the bucket gets full let it rest until the worms have broken everything down, then you can either shovel the broken-down compost out around the herbs or onto other garden beds. The worm tea you collect can be sprinkled back on to the herbs or on other plants you have. To do this, dilute your worm tea in a watering can: 1 part worm tea to 10 parts water.

# Speculative Robotic Irrigation System for a Pari Rooftop Garden

The Do-It-Ourselves Rough Guide to building a self-watering community garden with a mind of its own.

We're making a speculative design for a rooftop community garden that has an automated, smart, and water-wise irrigation system. We're really excited about it and we want to share our ideas. This guide will give you the basic tools to be able to plan and build your own.

The brains of the system are held on a Raspberry Pi (specifically a Raspberry Pi Zero W) which is actually a tiny computer. The R-Pi Zero W is only 6.5 x 3cm in size, sells for about \$20, can connect to Wi-Fi.

Using a tiny computer in the design means we can:

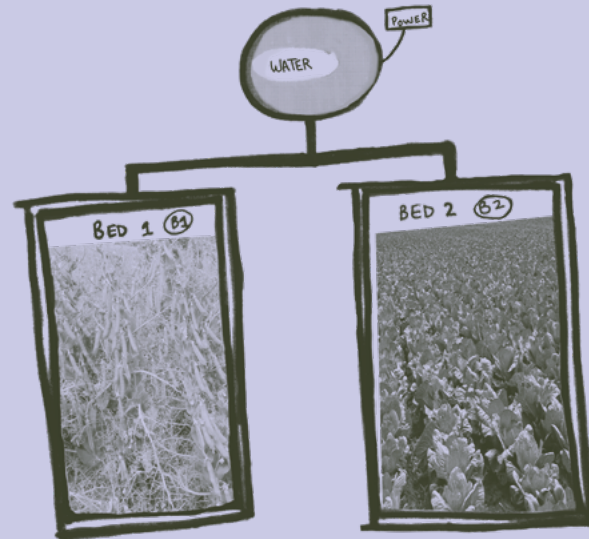
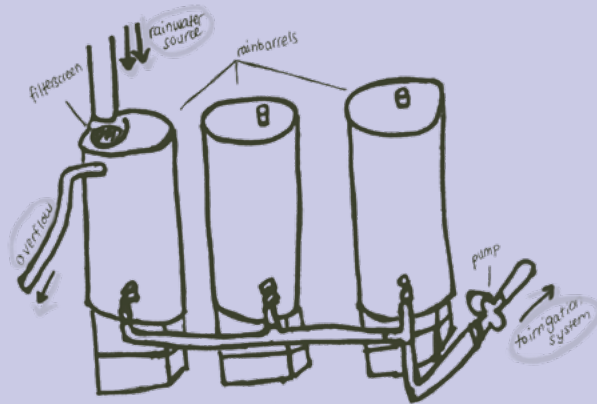
Adjust watering based on local weather conditions. If there has been (or if there's forecast to be) substantial rain, the watering schedule is reduced or skipped.

Control watering remotely by a phone app. Irrigation can be monitored and operated from mobile phone, with real-time alerts and water management tools.

1. Water source

We're using rain barrels – because we don't have an easy-access water source and also because we want to conserve water.

Since the barrels are our only source of water – we need to make sure they're big enough to hold all the water we will need.



2. Detailed building instructions



BUILDING RAIN BARRELS



IF USING A SUBMERSIBLE PUMP



IF USING AN EXTERNAL PUMP

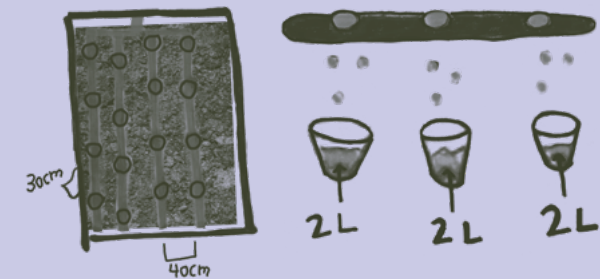


INSTALL DRIPLINE IRRIGATION

**Did you know?**  
 If you put out a square bucket that was 1 metre by 1 metre (a square metre/m<sup>2</sup>) and there was 1mm of rain ↓ you would collect 1L of water

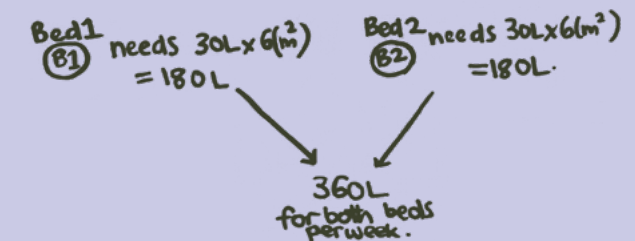
3. Using dripline irrigation

Typical spacing of drip irrigation for vegetables in 30 – 40cm. We're using Drip Eze which has 30cm between each outlet hole, and we've spaced each row with a gap of 40cm. Drip Eze delivers 2L of water per outlet hole per hour.



4. How much water do the veggies need?

Vegetables need about 30mm of water per week/m<sup>2</sup>. Since 1mm of water/rain in 1m<sup>2</sup> = 1L, vegetables need 30L of water per m<sup>2</sup> per week. Our rain barrels need to hold at least 360L to water both beds for a week.



### 5. Dripline calculations

Total litres needed to be irrigated  
= total outlet holes x flow rate of irrigation  
x irrigation time

Total outlet holes = #(length) x #(width) x  
#beds

# Holes (length):  $4\text{m} \div 30\text{cm} = 13$

# Holes (width):  $1.5\text{m} \div 40 = 4$

# Beds: 2

=  $(13 \times 4) \times 2 = 104$  "holes" in total.

Flow rate = Drip Eze has a flow rate of  
2L/hour.

### 6. How long to water calculations

$360\text{L} = 104 \text{ (holes)} \times 2\text{L} \times ? \text{ hours}$

? = 1.73 hours = roughly 1 hr 45 minutes

### WATERING THROUGHOUT THE WEEK

we wouldn't do the full weeks worth in  
one go, on one day...

so if we water 3 times in a week

$1 \text{ hour } 45 \text{ mins} \div 3 = 35 \text{ mins each time}$

### 7. "Smart" system


This is the part where this setup is  
different to regular irrigation systems on timers.  
We've calculated the amount of water the beds  
need, but what if it's currently raining? What if  
it rained yesterday? What if it's forecast to  
rain tomorrow?

Using software called Nymea (which is  
open-source and free!) we can set up smart rules  
for our watering schedule.

If we plug a smart plug (\$20) into a  
powerpoint and connect the pump to it, we can  
give the pump a brain. The R-Pi can now  
communicate with the pump and tell it when to  
turn on and off, meaning it can control waterflow!

For example: water the garden beds for  
35 minutes every Monday, Wednesday and Friday.  
Cancel watering if there has been significant rain  
in the past 24 hours, and/or reduce watering time  
if significant rainfall is forecast.

When this condition...

 More than 5mm rain in 24hrs


Add a condition

...during this time...

Decrease irrigation by 50%

Add another...

...comes true, execute those actions:

 Notification services - Send notificati...

Title:

Less water will be used today - rain  
helped reach target

Add another action...

### 8. Sensors & remote control

We can even use Nymea to monitor the  
moisture of the soil in the garden beds. It can  
send us a phone notification to let us know if the  
garden beds get very dry, and lets us top up the  
water there and then.

Water for

1 MINUTE 2 MINUTES 5 MINUTES

15 MINUTES 30 MINUTES 1 HOUR

Thank you to the Burramattagal people of the Dharug nation who have been taking care of the land on which Pari sits for tens of thousands of years. Thank you for your continuing care for Country and sharing your wisdom with current and future generations.

Thank you to all the contributors of this handbook giving readers hope and inspiration with creative responses to our changing climate.

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And thank you to all the readers of this handbook.

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