Uraidla Sustainability Fair: 16 March 2025

Keynote discussion: Preparing for an extreme climate: Hope and Action

Presented by Prof. Andy Lowe with Sophie Thomson, Mellisa Bradley, Paul Hill and Nigella Tarr

Andy Lowe
Welcome to this year's sustainability panel discussion. Thank you very much for the welcome to country and it's a bit more blowy this year than it was last year. The last two years we actually had too much sunshine but I'm not sure that's going to be a problem for this year.

So the panel discussion, how do we prepare for an extreme climate? Hope and action. We will have a structured panel discussion and then there's also an opportunity for you guys to ask questions as well.

Climate change is coming. In fact, climate change is already upon us. And the latest IPCC report notes a 1.5 degree temperature increase since 1910. And it's not looking to level out anytime soon. So if politicians have failed to act to protect our societies from the impacts of climate change, we must take up the mantle and protect ourselves. We all must become climate preppers. Warmer temperatures over time are changing weather patterns and disrupting the usual balance of nature. But what will climate change mean for us in the future?

We know there's going to be hotter temperatures and that means the higher likelihood of wildfires and heat related illnesses. There's going to be more severe storms and we've seen storms recently up in Queensland. That means those will become more frequent and also more intense. And the economic impact of those storms will increase as they destroy infrastructure and homes. We'll see increased drought as water becomes scarcer within regions. And also deserts will expand, reducing land for growing food. We'll see a warming, rising ocean. And whatever we do today, we are actually committed to a two metre sea level rise. So that has some quite profound implications for coastal dwelling communities. Climate change also drives species extinction, and it also puts at threat our food supply and food security globally, and also locally here in Australia with increasing temperatures. We also have direct human health in impacts from extreme heat and heat related conditions. And on top of that we will see an increase in displacement and poverty related to those climate conditions, with an estimated 23 million people a year leaving impacted regions of the world.

So those are some pretty dire predictions. Those are the predictions under the IPCC. But the good news is, if there is any good news, we actually know what's coming, and we know that these situations are something we can adapt to and start preparing for today. So what can we do? And that's really what the panel discussion is about. It's not to leave you with the doom and gloom of climate change, its to leave you with some practical advice of what we can actually do in the face of climate change.

So from water storage to securing electricity, to decarbonizing our energy use, to planting trees, to managing our gardens, to getting the best of our home fruit and vegetable garden, and to positively impacting our wellbeing, our expert panel are here to talk about how we can

all prepare for that and how we can bring a cooler, greener, wilder backyard and community that is more productive, liveable and more sustainable. In essence, how we can all become proactive climate preppers.

I'd like to welcome Sophie Thompson, Paul Hill, Mell Bradley and Nigella Tarr. Please give them a big round of applause.

Sophie, we'll start with you. You're well known to us and you're probably the most famous person in the field today. You're a gardener, you're a gardening presenter, but you're also passionate for supporting communities with gardening. Paint a picture for us, Sophie. How can we prepare our lands for climate change? And what's the kind of no regret strategy that we might do around food preparation and our lands?

Sophie Thomson
So I am totally biassed, but I know I'm right. Growing gardens and planting is the solution. Okay? Now, there's lots of stuff that's out of our control, but we can all have an impact where we live, whether we own our own home or even if we're renting, with no security of tenure. So I think creating gardens around where we live, that makes our blocks cooler, greener or more liveable and wilder. Supporting the urban wildlife that's also under threat is essential. I also think gardening is the most important life skill you can have. I'm totally biassed, but I figure at my age, I'm tired of pussy footing around. You know, stick to your guns if you think it's true, you know, stick by it. And I can.

I have seen how gardening has saved many communities that have been through more trauma than most of us would ever contemplate. So, in terms of growing food for ourselves in our own backyards, in terms of food security, having the ability and the knowledge to grow at least part of Your own fruits, veggies and herbs is amazing. It turns food miles into food metres, it gives you flavour. Now ultimately flavour is nutritional density. So, if you're eating that tomato from the supermarket and it tastes, what's the taste of a tomato from a supermarket? Wet, right? That's not actually a taste, there's no flavour, it's a colour and it's wet. There is no nutritional density in that. So when you start growing your own foods or part of them, it's really amazing. It also gives us access to organic, chemical free food.

And the other thing is that I should say that getting your hands in the soil is essential. Getting your hands in the soil in healthy, organic, enriched soil. And bear in mind, soil is a, an ecosystem beyond most of our comprehension. But in one teaspoon of healthy, organic enriched soil, there are as many units of life as there are people on the planet. Now one of those units of life is this amazing Mycobacterium vacae which triggers serotonin release in your brain. So if things are getting you down, get out there and support yourself by getting your hands in the soil and getting dirty. You know, it has to be that connection to soil.

Andy Lowe
Thank you Sophie, strong plug for growing your own food. And we'll come back to you Sophie, on some practical advice of exactly what to do. Paul, let's go to you next. So paint a pitch for us what's going to happen under a climate change future in terms of our energy supplies.

Paul Hill
Yeah, thanks Andy. I think you mentioned it before, you know, we've seen in Queensland recently, you know, it's not so much a one in 100-year event, weather event, extreme weather event, they're more like one in 1,000 year events coming. They're happening in areas that aren't used to seeing those events. And in terms of our electricity and power grid systems, they're just not built to withstand that sort of punishment. They are sort of rated, there's a rating system for power systems and they're sort of built to withstand that 1 in 100-year event. They are not built to withstand 1 in 1000-year events. And of course, when they

fail, we see these longer duration blackouts as they have to sort of fix them. The conditions to be able to fix them have to be well enough for the workers to safely fix them.

And it takes longer to fix. The supply chain disruption that occurs from that obviously impacts local and beyond. But I guess the way I like to look at things is there is work being done to improve that infrastructure, the grid Systems are being upgraded and we are transitioning to an electric grid. South Australia's I think 70 or odd percent renewable at the moment and within a couple of years it'll be 100. And that's a fantastic achievement. That's world leading, literally. South Australia is world leading in that regard. So that gives me heart around what's happening. But even the transition itself presents problems. You know, we've got the Germans. I think today is a pretty good day, although it is windy. You know, the Germans came up with a word to describe the situation where the sun doesn't shine and the wind doesn't blow.

Dark lull, translated to English, the word is Dunkelflaute.

Andy Lowe
Hang on, hang on. Dunkelflaute.

Paul Hill
Dunkelflaute, yeah.

Andy Lowe
So that's the word for today.

Paul Hill
That's the word for today. And you know, when the sun doesn't shine and the wind doesn't blow, how are our renewable energy systems meant to cope and meant to provide the power we need? Digitization is what is going to fix that and is working to fix that. And as our grids transition, they are digitising as well.

Andy Lowe
And that energy transition also energy disruption, it's not a fanciful scenario because we just saw the York Peninsula plunged into an electricity crisis just a few days ago. Right?

Paul Hill
Yeah, that's right. It's a good example. You know, what actually happened. There was weeks of no rain, resulted in dust buildup in areas of the infrastructure. They just didn't anticipate it would build up and the system failed. And the hardest part about that is that they weren't quite sure where it failed and they've had to go looking. Well, where's the dust buildup to find it? To a degree I exaggerate, but yeah, it's certainly. That's an example of unexpected sort of outcomes with our grid system.

Andy Lowe
Right, thanks, Paul. Thanks for going through the kind of context around energy generation. We are moving towards renewable energies at a state, national, global level. But there will be a transition period.

And Mell, you're a civil servant programme director with Water Sensitive SA and expert in water sensitive urban design in the driest state on the driest inhabited continent on Earth. How are the water systems likely to change under climate change? What are we expecting in a climate future?

Mell Bradley
Okay, so we'll get our storm events. We'll probably get slightly less rain, but we'll get it in

more intense storms. So water sensitive urban design as a practise is about harvesting stormwater and Using it where it falls, or harvesting it, treating it and using it nearby for the benefit of normally local green spaces. But it also can be used by industry. So the challenge for us will be slowing it down, the way it moves through the catchment and then being able to. Because if it moves too fast, you can't clean it in time to harvest it and manage it and use it. So we want to slow it down all the way through our catchments. And we can do that at a range of scales, but at the household scale, we can do that by ensuring that we don't have so many impervious surfaces.

So rather than having concrete or I know exposed aggregate is the newest trend in driveways, but choosing a different type of product, like having a permeable paver or even an aggregate that's stabilised with these geo cells that sort of stop the shove of your aggregate, but you still have an aggregate driveway. So basically choosing different materials around your home can make a really big difference to how much of that stormwater runs off. And then you can soak it in and it can be taken up by your trees and your plants around your property. So that's just one way.

One other way that is probably one of my favourite things at the moment is if you've got a suitable size property and you can manage this and you'll have to check with your local council, but connecting one of your downpipes to an aggregate field trench, suitably a distance away from your. From your foundations, wrapping that the aggregate in a geofabric. So laying the geofabric first back, filling with agate aggregate and then having a perforated pipe run from your downpipe through into the trench. And then that will just hold the water, it will slowly soak into your local soils and then you'll be able to benefit from those rainfall events instead of them running off into your local creeks and causing erosion.

Andy Lowe
Great. Thanks for some practical tips and we might get some more of those from you in a minute. But maybe you could also tell us a bit more about what's being done at the state level to prepare Adelaide for lower water levels. How do we design our cities?

Mell Bradley
There's large schemes at the city scale, so particularly in Adelaide, they harvest a lot of the stormwater, treat it through big biofilters or through wetlands, inject it into the aquifer and then extract it in summer when they need to use it. So that's one way. We have about 130 gigalitres of water run off of our streets and suburbs in the city that goes to the coast. And at the moment we probably reuse about 5 gigalitres of it. So there's so much potential to grow our stormwater reuse within our communities for now. And of course there's recycled water use. A lot of recycled water is now being cleansed to such a high level that it can be returned back into flush toilets in homes and the like.

It's looking for all these alternative waters and not just relying it's fit for purpose water. So you're only using water to a certain standard that you need instead of using potable water for non potable uses, basically, or drink not drinking water.

Andy Lowe
Thanks. Thanks so much, Mell.

And back to you, Sophie. You gave us, you gave a strong plug, I think, for planting gardens, growing your own food. Give us a bit of practical advice. You know, if you're starting with a piece of land, what should we do, what can we do and what's the best way? We've heard about the benefits of planting trees. You know, you get temperature amelioration effects. You also get that positive outcome from spending time with nature. But what's the best way we can go about that?

Sophie Thomson
I am passionate about the fact that we need to plant more trees. And the challenge is that as many people end up in Adelaide at least, or say Mount Barker, with smaller properties, higher footprint on the small property, there's very little space left and people panic and they think, oh, I can't put a tree in there, it's going to wreck it. There are appropriate things to create shade, to cool it down, to green it up, whatever size you've got. And we know enough about trees, we don't have to plant a lemon scented gum in a courtyard, which we did in the 60s and 70s and some of you might be living with that and having nightmares every night. But you know, we can choose whatever the scale is, we can cool it down and we can green it up.

Now, in terms of growing food, we also know how to grow food better. If you've got space and you've got plenty of water and you've got fantastic soil grow in the ground. But if you haven't discover wicking beds, there is a little disclaimer here. Wicking beds are highly addictive. And who here's got a wicking bed? Can I see who here's got more than one? Keep your hands up. Who's yell out who's got more than 10? Okay, go Peter. I started with one and ended up with 22. I'm just moving somewhere, it's a lot hotter, a lot drier, I'm gonna have a lot more than 22. So it's a game changer because it means that A, we can have better access on keeping that soil beautiful and moist. But that water's not just disappearing, we're getting the best value out of that water.

And so it transforms things. And I'm not aspiring or even going to recommend to anyone to try and be self sufficient. What we want to do is we want to grow what we love. For me it's bok choy, right? I have about a square metre of bok choy ready to go at all times. If you go to the supermarket, you buy it, they've pre-wilted it for you. How lovely, right? You know, if I pick a bok choy and I pick too much, I can put it in the fridge and two weeks later it's still good to go, right? The freshness, the density, the flavour, it's amazing.

So, you know, grow the things that are going to cost more and then understand where your food comes from. If I could give you one book to read, it's called What Your Food Ate. I can't remember the author. You can hard copy or audible. The genre, nutrition, agriculture, horticulture, horror. When you read that, you just go, ‘I need to know where my food is coming from’. So how can we access food? We've got the hut here with their food, their harvest exchange. I was there for the first one of those about 12, 13 years ago. Harvest exchanges are fantastic. The grow free carts that we see scattered around Adelaide. So when you grow too much sharing, that's also building community. And I love that there are some councils in town that go, okay, people haven't got place to grow food in their backyard. Let's put wicking beds on the street, you know, create community gardens on the verge, which is fantastic. So community gardens are wonderful.

Tapping into your local community supported agriculture system, going to the local farmers market. You know, there are ways to grow food and also learning to eat seasonally. You know, even with my kids, I remember having battles with them going, well, we want tomatoes in wintertime. I'm going, but tomatoes don't grow in wintertime. And so then I go to all this trouble to try and grow winter tomatoes in a poly house. Cost me a fortune. Most expensive tomatoes ever. Can I tell you, they didn't taste as good. I went to this whole problem. I grew them organically. They actually need warm weather to taste good. And I Just have been to a market garden, a paddock to plate, fancy restaurant, and they have a market garden. And they've just come to the same conclusion, growing winter tomatoes. They don't have the flavour.

Learning to eat seasonally and learning to eat what you grow, you know, throw away the recipe books, cook with what you have. So I'm totally biassed. It doesn't have to be hard. And if you're renting. So I do spend a lot of time in many communities that are where people

haven't got the opportunity to own their own home. Even if you're renting right, for a few bags of manure, a bit of Rio mess, you know, a few bales of hay, it doesn't have to cost a lot. You can grow at least part of your own food and that will save your bottom dollar. And there's also something that comes from when you bite into something that you grew, there is like an endorphin hitch that you get from the satisfaction of growing your own food.

So it's not only about getting our hands in the soil, you know, having a place to manage our stress levels. You know, after Andy's introduction, we could all, you know, feel disempowered, but it's about having a garden. You know, go out in the garden, watch the birds, watch the bees, listen to the sounds of nature. Even in a little rental patch in the city, you can still find a way to manage our stress levels and keep us happy and healthy. That was a rant.

Andy Lowe
That was a good rant. Thank you. Sophie and Paul, you talked a bit about some of the changes in our electricity supply systems that are going on at a statewide and also national basis. What else, what else can we do locally around electricity supply? Sure.

Paul Hill
I think at a household level - you know, my T shirt sort of gives it away - I think we can. Electrification of households is going to be both best for our environment, for reducing emissions and for our hip pocket as well. You know, domestically in Australia, all the emissions that are generated, over 40% of those emissions come from our household. And so we are. It's within our power to have a significant, collectively to have a significant impact on overall emissions reduction. What does an electrified house look like? Well, it's, you know, solar panels on the roof, there's a home battery connected to your house, there's a heat pump, hot water unit, there's reverse cycle electric air conditioning. There is no gas in your house. You know, that's what the future, I think, looks like.

I think it's within our gift to do that, yes, it has to be financed. There's a cost associated with this. But the savings, you know, if you do it step by step, the savings can effectively finance the lot. The average household, you know, probably got about a $5,000 electricity bill in Australia. And an electrified household, and I'm an example of that, has annual bill, you know, probably mine's below $500, but many can go below $1,000. And so you can see there, $4,000 a year can help finance the repayments on some of these goods that we need.

Andy Lowe
And you also get green loans as well. So many solar companies will almost install solar panels for free, but you have to pay that back off the savings that you make off your electricity bill.

Paul Hill
That's right. And there's also government incentives in South Australia, there's the reps rebate. One of those rebates in particular is around virtual power plants. So if you've got a home battery or you're thinking about getting one, you can apply to get up to $2,000 cash back off the South Australian state government for installing a battery. And look, leading into the federal election, there's bipartisan support at the moment for providing some financial assistance for home batteries. I look forward to seeing how that pans out at the coming election. What else? What else? I think overall we're going to rely less on those centralised power systems. I don't believe nuclear is the answer. I do believe in a more local generation, more local sharing of energy. I think, you know, I mentioned virtual power plants, but there are other things we can do at home.

You know, if we've got, if anyone's got an EV or you're thinking of getting an ev, that car can be used to power appliances at home. It can also be used to, you know, back up critical

infrastructure. When I'm without power at my house, I can use my EV to power my bore pump to provide water. So there are great ways that electrified households can provide those redundancies and backup as well.

Andy Lowe
Great, thank you. Thanks very much, Paul. Thanks for giving us that practical advice on electricity and electrifying our homes. Mell, let's go to you again, really around water, what you can do within your property and what's within the reach of the average person.

Mell Bradley
Okay. I think when I moved into my place, the rainwater harvesting system was probably not optimised. So one way is to wander around your house, look at where all your downpipes are and see what they're currently connected to. Because what you'll find with a lot of setups is they've just grabbed one downpipe and connected it to the rainwater tank and you're not actually getting the full potential of your entire roof. Sometimes it might be most cost effective to connect all your downpipes at the ground level and have what's called a closed system so that you have everything sort of fitting into the rainwater tank at the bottom because you can connect the downpipes at the bottom. Or it might actually be more cost effective to have a slightly bigger tank if you can't get all of your downpipes to that.

So there's a tool on our website called the Insight Water tool on the Water Sensitive SA website and that can help you optimise the setup for your house. And it will show you a little graph of, you know, what you connect it to if it's connected to a toilet or a laundry or a hot water system. And you can model like how often your tank will be full for your climate and really just get to know how you can basically get the best use out of your rain water tank and how you can size it correctly for your configuration of your downwater pipes. So it's really getting the most of what you've already got.

Andy Lowe
And there are practical guides for how to do that, are there that are available?

Mell Bradley
Yeah, there's a guideline that goes with the tool and happy for people to email me if they're having any troubles to work out how to do it, but it's quite self explanatory. You just gotta take yourself through a couple of screens on a page, putting in some site of your area, side of your roof and what it's connected to. So you need to know, make sure that your downpipe can get connected to your tank and your roof area.

Andy Lowe
Thanks very much, Mell. Now we're going to go to Nigella Tarr who's been sat very patiently over on the far left, or far right from the audience perspective. An important part of the sustainability fair is inclusion of youth and a youth perspective. And so Nigella is a Year 12 student at Heathfield and passionate about sustainability. So what Nigella is going to do is she's going to ask some difficult questions of the panel members from her perspective. Nigella, please go ahead and ask us our first difficult questions.

Nigella Tarr
Okay, thank you. My first question is how could I, hypothetically as a renter or share houser with no control over my electricity provider, still mitigate my impact and also maintain a vegetable garden?

Andy Lowe
Okay. So I think Paul, how does Nigella tap into the sustainability and then, Sophie, I think we might come to you.

Paul Hill
Well, as a renter, you have control over your retail plan that you get and the pricing that's within that. If your rental property already has solar panels, then you can optimise the way you use your power. You can switch to as much daytime consumption as possible and optimise the use of that free power from the roof. If there are no solar panels, there are energy plans that sort of can be tailored to your lifestyle. So if you use more power at night, there's plans that have cheaper rates at night. So it's about tailoring your energy plan to your lifestyle. And what's with, you know, in your rental property? Yeah.

Sophie Thomson
And as far as growing food when you're renting. I've actually been renting for about 15 months in Crafer's and I moved in. I did get permission from the landlord whether I could put a veggie garden in raised beds. I plan to take it out with me. Otherwise, you can grow food in pots. There are some really fancy wicking pots that you can buy. Otherwise you can almost make your own out of Styrofoam containers. Although I don't like them, they're a bit brittle in the long term. But there are all sorts of ways that you can grow in wicking pots and water is the magic ingredient. And every now and again someone says, what the cost of water is expensive. Two things I'd like to say on that. One is the cost.

If you've got a backyard that you've watered to keep it cool, the cost of the water you've used will be less than the cost of electricity. If you're going the normal way to put an air conditioning on to keep your house cool. And as far as the cost of water involved in growing food in the real system, David Holmgren, who's the founder of Permaculture, he says the amount of water used in homegrown veggies is half that of the water that's actually used in the real commercial food system, but it's not costed in. So it's like this fish false reality, thinking that you're using more water to grow your own, but you're actually using half. So having a go.

There are community centres that have grow free carts as well as having produce, they've often got seedlings, so you can even pick up seedlings very cheaply. And the other thing is to get involved with your local community garden, because many of them have either individual plots or Shared plots and community gardens. My passion for them is because they're not just about growing food, they're about growing strong, healthy, resilient, connected communities. So, great question, Nigella.

Andy Lowe
So, and Nigella, before you go on to your next question, Sophie, I'm just going to ask you just clarification. I know we have a lot of wicking bed converts here, but can you just explain very briefly what a wicking bed is for those that don't know what it is?

Sophie Thomson
Absolutely. A wicking bed is a self watering veggie bed. You know, back in the 80s, self watering pots were developed and we didn't quite understand how they worked back then and people tended to water them every day, which wasn't the point of them. The idea was that you water them when they dry out. An in ground veggie garden in hot weather you'll probably be watering daily. If you're in a sunny area, a wicking bed, you're probably topping up weekly. So it's basically a closed loop. The water goes through, there's a reservoir and then that water is recycled so you're not wasting water. It's the most efficient way of watering. And I spend a lot of time in outback areas like Air Peninsula where it's really hot, really dry. And wicking beds are a game changer.

So if you want to know more, grow it local, which is the organisation Paul west from River Cottage set up there is a zoom I did on his platform. It's free to join. 800 people around Australia tuned in for that zoom on different ways. And it's not only about you can buy

wicking beds, they're actually really expensive though, or you can make your own. So there's lots of ideas on how you can make your own affordably great.

Andy Lowe
And I think, you know, all of the advice that we've heard not only is good for the environment, sustainability, but it saves you money as well. It saves you money from an electricity perspective and also from a water use perspective.

Sophie Thomson
And it's easier to grow food. That's actually the bottom line is you'll grow better veggies, less stress, we're all busy. You know, if you've got all the time in the world to go out and water daily and that's your Zen, good on you. If you're busy and you've got a lot going on in your life, which many of us do wicking beds mean you can still grow great food without.

Andy Lowe
Stressing, yeah, I'm going to go home and make a wicking bed right Now.

Mell Bradley
I was at another community event like this and someone said, my friend's done this amazing setup. And he sent me the photo. And it's the downpipe from the house going into a wicking bed right near the back door with this kind of a plumbing loop so that the overflow goes back to the stormwater system. And I was just like, ingenious. He literally has to do nothing. It rains, it fills it up and then they plant their herbs.

Andy Lowe
Okay, some practical advice there, Nigella? Yeah, just need to know where it is. I think also with the discussions, we're going to try and put some resources up on the website afterwards as well. So some of this advice should be upon the website afterwards. Nigella, do you want to pose us another question, please?

Nigella Tarr
Absolutely, yeah. Thank you, guys. How can we work around the inaction from governments on a small ground level? What can we do to take back agency and empower youth to become advocates for climate action? Even in places where those conversations are not as mainstream or prioritised?

Mell Bradley
I can start. Rainwater tanks were made mandatory in the first, the millennium drought, I think. And when the new planning and design code came in, there was a risk that they were going to be taken out again. And quite frankly, 891's talkback radio saved the rainwater tank policy for people ringing up saying, I think rainwater tanks are a great idea. Why would you not make them mandatory on houses? And it was the fact that all the radio lines were filled with people advocating for rainwater tanks that helped keep that policy in.

Andy Lowe
Thank you. So be vocal about some of the changes. Sophie or Paul, any other recommendations? Paul?

Paul Hill
I think from a power perspective, right now in Australia, there's a great community grassroots sort of campaign emerging around lobbying for change at the household level. There's also great examples of community projects and community renewable energy and power sharing arrangements and things like that. So my advice would be to join your local grassroots community group. Participate and together those grassroots campaigns, they come together at a national level. They can have an impact on federal, state and local politics.

Sophie Thomson
Andy, I feel like we should actually ask you what your response to that question should be.

Andy Lowe
Yeah, so I do work at the University of Adelaide and one of the key things, there are a number of youth groups that are established around South Australia. SAGE is one of those, which is really a sustainability youth group. And I think that recommendation of working with community groups is good, but I think for young people there's a specific requirement and approach to encourage young people to get involved with those kind of movements at the university. As I said, SAGE is more South Australian. There's the Biological Society of South Australia, there's things like postgraduate societies as well. So generally at universities, I mean, it's a pleasure for me to work at universities. You're just surrounded by people with so much energy and wanting to do something.

And I think it's one of the changes that we see if we can tap into half of that excitement and energy to make those changes within community. It's one of the pleasures of working in a university system. But it's also people that work at the university system. It's our responsibility to help provide a platform for youth voices. And I think increasingly there's interest in getting youth voices involved in a whole range of different areas. I also am a board member with the Hills and Fleurier Landscape Board and it's important that board also take on board a youth voice as well as an indigenous voice and a more a broader community voice. So I think the change is coming. So hold on in there, Nigella.

But I think it's that balance, you know, in science there's a quote that science moves forward one funeral at a time. And so the reason that quote is relevant is because I think a lot of ideas get entrenched and it's only once that group that entrenched the idea have moved on that you get change. By being able to tap into the youth agenda and the youth ideas, you can accelerate change much quicker than waiting for the next funeral. Sophie, any other suggestions? Nigella, one more for us, one more question.

Nigella Tarr
Thank you so much, that's a great answer. What would you suggest people like myself, students, young people maybe struggling financially do to inform ourselves about the choices we're making to best our understand our impact and how to minimise it.

Andy Lowe
So I could probably have some quick recap of where do you go for the information? Paul, where do we go for electricity information?

Paul Hill
The organisation on my T shirt, Electrify Adelaide is, you know, the South Australian sort of part of a more national campaign called Rewiring Australia. The Rewiring Australia website's got a lot of really good fact sheets on there and resources that can help with, you know, at the household level. I think that's a good question. Certainly I mentioned community groups before. You know, things like, you know, the talks that have been had today, the tree talks. Community groups get together, they share knowledge, they share resources very well. So other than that.

Andy Lowe
So a mixture between joining community groups and then Go rewiring Adelaide and Australia. Mell for water, where should we go?

Mell Bradley
So the watersensitivesa.com website has a curated portal for community. So we have one

for councils, one's for small scale developers, one for large scale developers, and there's a box that you click that just says community and that will take you in through to all of the resources for your. At your own scale, your lot scale, including guidelines to the tool I spoke about to do your rainwater tank assessment. And so that's all there. And then also keep an eye. You could follow us on Facebook because occasionally we do community events where we teach you how to use those tools and how to harvest water and use it on your site better. So keep an eye on that. And we do. So we do a community events as well.

Andy Lowe
Great.

Sophie Thomson
Sophie, I would just say, as far as growing food, have a grow, right? Get involved in your local community. Either a garden, community garden, harvest exchange, grow, free cart, anything like that. Connect with other growers. If they've got dirt under their nails, they're good people. You'll learn, you know, finding mentors. There are great resources, of course, we've got Gardening Australia, we've got radio, we've got all sorts of different things online. But yeah, have a grow.

Andy Lowe
Have a grow! So thank you for those questions, Nigella. That's great. Now we'll throw it over to the audience. We've got about 10 minutes for questions from the audience, so Nigella has a roving mic as well, which I think we're going to pass around. So if you've got a question, just wave your hand in the air, maybe just introduce yourself and we'll see whether we can't answer your questions that are coming, that are stimulated by the discussion. Any questions coming? If not, I might ask a question. So, I mean, one of the. One of the things about living in the hills is also the risk of fire that occurs here. And there are specific bits of advice of getting your property and getting your house ready for the possibility of bush fire.

And I think we had some advice earlier today as part of a session with cfs. But a lot of the recommendations you're making from your sector also improve the resilience towards fire. So maybe, Sophie, how does growing trees, how do you make that more fire resilient and how does that work?

Sophie Thomson
Great question. Well, there is a lot of information out there about the type of tree you've got right next to your house makes all the difference. So put very simply, things like pines or gums are full of oil, so they are explosive. Deciduous plants, as a really gross generalisation, are full of water. So they are fantastic to put out an ember attack having lawn around your house. Well, lots of people look at lawn as, you know, evil and wasting water. It also helps to cool the temperature and green it up. And in the work I've done with communities, the fire affected community on the western half of the island, I'll tell you, they've all got lawn around their house. Right. You know, it's about putting.

We're not going to water our whole garden, but where we put the water, we're going to put it closer to our house to keep that cooler and moister and moving forward. The community on Kangaroo island are actually looking to support each other because it's not if there's another fire, unfortunately, it's when there's another fire and they have on a community level growing food level. They have set up local food systems and they are growing so that next time they are prepared. Because what happened for the. If you don't know the wha and Ki came through, it came through just before COVID So all the seeds they lost. Then there were no seeds available because. So now they're actually planning, they've got these amazing harvest exchange happening. They're empowering the island to grow their own food so that they're not.

So that they are food secure, not food insecure. And gardens make a huge difference to cool the temperature down and keep your house safer. I'm not going to say it's not going to stop things, but it does make a difference. And when we look at the Adelaide Hills where many houses were lost, the ones that survived, I spent a lot of time driving around looking at the ones that survived with neighbours either side and trees. While people are often scared and they go, I've, you've got to keep the tree away. If it's the right sort of tree, it can actually stop an ember attack.

Mell Bradley
Well, certainly for us here in the hills, new built homes have had in there in the high fire dangerous risk will have a requirement to have more rainwater storage. But I think we also need to make sure that we've got that the pump that doesn't rely on electricity to actually make use of that water. So I guess my thought is just check what your system is and make sure that it isn't necessarily reliant only on electricity because the electricity is likely to go out when the fire comes.

Andy Lowe
Or Paul, you could have your own electricity system, right?

Paul Hill
Yeah. Mell makes a very good point. I mentioned before that, you know, my car at home, my EV has the capacity to be plugged into my bore pump. And whilst that's not necessarily going to be available to everyone, 4 million people in Australia have gone and got solar, but only a couple hundred thousand have actually put a battery on next to it. And batteries provide backup power. They can provide backup power and those critical loads like pumps, can be backed up with either a car or a home battery. And I think this year is going to see a change in home battery pricing. I'd like to see. I mentioned before that I think the election will have something to say about that as well, so stay tuned there.

But yeah, home batteries, battery backup, preferably not diesel, but, you know, it's not for everyone, so it's okay to have.

Andy Lowe
Diesel too in a transition period. Right, Yeah. I think we have a question from the audience here. What's your name, sir?

Nick Kentish
My name is Nick Kentish. I am a retired farmer who took up teaching farmers in regenerative agriculture, which is not that popular amongst the mainstream farmers, but it's getting a toehold. I look in the Adelaide Hills and Mount Barker and Fleurier region, I see an excessive number of dams that are no more than duck ponds. They once served a purpose and they now no longer do, probably. To Mell and to Andrew, from a landscape point of view, is there a water management plan that includes groundwater storage and to lessen the number of evaporation ponds that are effectively out there?

Andy Lowe
I might go to Mell first.

Mell Bradley
So in the east, Mount Lofties, particularly the east and Mount Lofties, they did bring in a low fly bypass policy that was intended to have the first lot of water come through. Bypass your dam so that you. It wouldn't just be that everyone's filled up cascading. I know they have been rolling out trials on that and I haven't worked there for quite a few years, so I'm not sure where they're at now. But the issue with the aquifer storage is really good. Aquifers in the

plains, in Adelaide, in the hills, we've got fractured rock and there's less certainty about what you put in if you're actually going to be able to draw it out. So that's the challenge. There's, yeah, a lot of, I suppose, a lot of uncertainty and not a lot of proof of concept in our fractured rock systems.

But I do believe that we need to be thinking more about how we get base flows back into the creeks because we're getting so Much come off quickly and then there's no base flow in our creeks and that's changing the whole house cycle. So, yeah, I think there's definitely opportunity, but we need a bit more science, we need a few more researchers to come in and have a look at how our fractured rocks perform.

Andy Lowe
I haven't heard that recommended before. They actually need more research on something, so that's good. I think also I said on the Hills and Fleurier Landscape Board and there is a process underway at the moment, water allocation planning, that's underway. I think it's important to recognise that when water allocations were first given out, were in a cooler, wetter climate and I think many properties don't actually fully utilise the water allocation for those particular properties. I think we are going to have to look at how much water is allocated to two properties and that's going to have to be reduced if we want water to be a sustainable premise for the future. And that includes, particularly as Mell says, that includes water for the environment.

And I think the important piece is making sure there's good water in the environment both at the beginning and end of summer. So those first bits of rainfall, if they just go into filling up dams, they're not going back into the creeks and then you're sending native fish to extinction. Similarly, at the end of the season you still need to maintain those wet systems. I think we probably do have enough research to make a good educated guess on what we need to do. I think we need to start implementing that as soon as we can. Of course, more research will help fine tune that, but I think we need to start with that water allocation and property owners, you know, making an example to take less water for the property and I think also water allocation. Our efficiency of using water has massively increased since some of those water allocation awards were first set up. So I think a combination, a bit of give and take from everybody, we'll see water for the environment, but also more to water use efficiency overall.

Another question? No. Any other questions? If not going once, twice, if not, I will thank our panel today. Sophie, Mell, Paul and Nigella, a big round of applause please. We had a really fascinating discussion. I'm sorry I set up the conversation with a bit of doom and gloom, but it certainly got your attention, and I think our panel made us, helped us, find our way out of the doom scenario. We can all become climate preppers and following up from some of the advice, we can all start doing that today. So thank you very much all, thank you.