



tree talk

STORIES FROM THE SEEDLING BANK

CARING FOR COUNTRY

In Central Arnhem Land, job seekers are raising seedlings to create shade for locals and endangered birds

GREENING THE RED

Planting in the iconic mining town that pioneered arid zone revegetation

BUILDING BANDICOOT BUNKERS

Meet the primary students fighting for safe bandicoot habitat

A HOME AMONG THE GUMTREES

Building safe havens for vulnerable phascogales in Victoria's old growth forests

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Foreword

BY REBECCA GILLING



Rebecca Gilling, Deputy CEO Planet Ark

Stories make our world go round. They help us communicate between cultures, understand ourselves and our place in the world and learn how we may act wisely.

Perhaps most importantly, they transcend generations to allow us to pass on this knowledge and understanding to our children.

In Australia, we share this land with First Nations people who retain the longest storylines of any culture worldwide. These are stories passed from generation to generation for over 60,000 years, and many of us who came significantly later could learn much from them. The story of caring for Country is one of the most significant and meaningful of all. This story, told in multiple ways by traditional owners, allows First Nations people to live in balance with nature through careful land and resource management and respect for the plants and animals they share Country with.

It was with this sentiment in mind that we started the National Tree Day Seedling Bank in 2019, with a mission to create new stories of respect and regeneration of our environment throughout Australia. We know how important our volunteer coordinators are to the success of National Tree Day each year and we wanted to provide them with the financial assistance they deserve in acting as stewards of community and environment.

Two years later, it gives us great pleasure to introduce stories of community groups and schools taking action into their own hands. We've helped plant over 29,000 trees across every state and territory in Australia already, and this is just the beginning for The Seedling Bank. With the help of supporters and donations, we will continue to help Australian communities regenerating landscapes.

In the wake of one of the most severe droughts ever recorded between 2017 and 2019, the brutal and tragic summer bushfires of 2020 and over a year living with the COVID-19 pandemic, these are stories of hope we need. From primary students planting wildlife corridors for threatened marsupials, to nature therapy providers, to community groups fighting climate change and giving back to Country, we hope these stories inspire the same joy and appreciation in you as they do in us.

Let us take you on a journey around Australia with *Tree Talk* — the stories of our Seedling Bank beneficiaries and Tree Day heroes.

Stories from The Seedling Bank

The Seedling Bank has helped communities restore ecosystems all across this wide brown land.

From the banks of the Katherine River to the dusty plains of Broken Hill, our seedlings have taken root and begun to transform the landscape around them. While some are still young saplings, others have grown up into lush green swathes of bush.

In Western Australia's Lake Claremont, a dense native garden sits in what was once a barren lot. The former rubbish tip and golf course is the planting site of one of our earliest Seedling Bank grant recipients, the Friends of Lake Claremont community group. These Tree Day heroes used their grant to revegetate the area and restore critical habitat for endemic plant and animal species, including the endangered Carnaby's black cockatoo.

Like many of the yarns you're about to read, theirs is a story of environmental and social regeneration, with planting and nature care practices bringing the community together to nourish relationships with each other and the land.

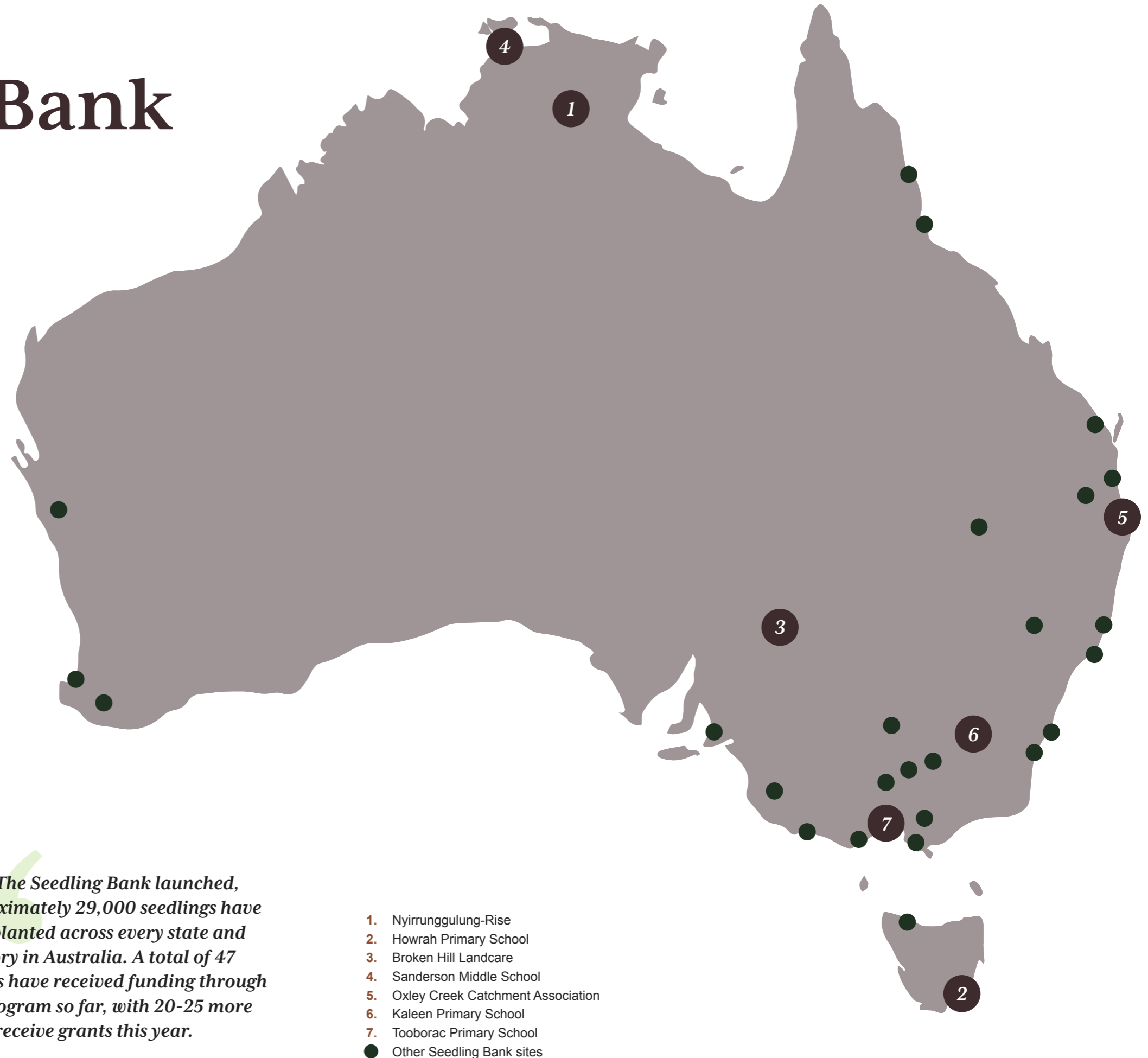
The Seedling Bank was established in 2019 by Planet Ark's National Tree Day team with support from Toyota Australia and the goal of supplying native seedlings to schools and community groups around the country. The program builds on the success of Australia's largest tree planting and nature care event, which has put over 26 million trees in the ground since it launched in 1996, by providing groups with the funds they need to plant trees all year round.

Since The Seedling Bank launched, approximately 29,000 seedlings have been planted across every state and territory in Australia. A total of 47 groups have received funding through the program so far, with 20-25 more set to receive grants this year. Any school or community group can apply for a Seedling Bank grant, they just need to provide a plan for an environmental project that requires seedlings. Successful recipients get to bring these projects to life and become life-long members of our Tree Day community, a collective of dedicated nature lovers committed to restoring our unique home.

For National Tree Day 2021, we are celebrating the achievements of this community in this our first edition of *Tree Talk*. The stories that follow are exemplars of the multiple benefits planting trees can bring to people, plants, animals and our big blue (and green) planet. They will introduce you to everyday heroes from all around the nation who are restoring native habitats to protect threatened species, planting to capture carbon and combat climate change, rehabilitating old mine sites, using nature to treat trauma and enabling Traditional Owners to care for Country.

Take it away legends!

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Leqaya, student from Manyallaluk School



Tracy and Peter Beesley

Nyirrunggulung-Rise

PLANTING FOR CULTURE, COMMUNITY AND COUNTRY IN CENTRAL ARNHAM LAND

A red sun rises over rusty orange dirt, illuminating sandstone cliffs, vast floodplains, roaring waterfalls and groves of *Melaleuca quinquenervia*, more commonly known as the iconic paperbark tree. This is Arnhem Land in all its ancient and mesmerising beauty.

Earlier this year the Tree Day team had the privilege of heading to Katherine and Central Arnhem Land in the Northern Territory to plant trees, share stories and learn from the Jawoyn people and the team at Nyirrunggulung-Rise, an organisation dedicated to community development in the region.

Jawoyn country is located in northwest Northern Territory, with Katherine at its heart, and is dominated by watercourses, including the spectacular Nitmiluk (Katherine) Gorge. The Katherine River and its network of gorges, creeks and waterholes fill with water during Jiyowk, the monsoon season of January and February. When the downpour subsides, the remaining water provides much needed respite and nourishment for the plants and animals of Jawoyn country during the much drier seasons of Malapparr and Jungalk from June to November.

Undulating hills and ridges make up much of the Jawoyn landscape and are filled with a range of native wildlife, including rare birds, mammals and the mighty saltwater crocodile.

About 1,000 Jawoyn people live across this country, spanning from Pine Creek in the west to Bulman in the East and including Nitmiluk National Park and part of Kakadu National Park¹. The dramatic landscapes of Jawoyn country bring special force to Dreamtime stories. The sheer cliffs, winding rivers, rolling hills and pockets of lush rainforest offer abundant natural resources to sustain local biodiversity and bring life to the creation stories that fill Jawoyn country with spiritual connections.

The Jawoyn Association was formed in 1985 with the objective of representing the views and ambitions of Jawoyn people concerning the management, protection, control and development of the land. Today, the organisation continues to work in the interests of Jawoyn people and land, with a focus on improving the cultural, social and economic wellbeing of their people, while caring for Country¹.

Nyirrunggulung-Rise is an organisation that was formed when the Jawoyn Association and RISE Ventures collaborated to deliver the Community Development Program — the Australian Government's remote employment and community development service². Nyirrunggulung-Rise is based in Katherine and works to create employment and training opportunities and support social infrastructure, primarily in small Aboriginal communities in Central Arnhem Land within the Roper Gulf Region, east of Katherine.

This year, tree planting is included as one of the training and community engagement opportunities Nyirrunggulung-Rise will undertake with Indigenous people.

With grant funding from The Seedling Bank, 750 native seedlings will be planted across three small communities in the region — Manyallaluk, Barunga and Beswick.

Peter and Tracy Beesley are the duo at Nyirrunggulung-Rise behind these initiatives, creating opportunities for unemployed members of these communities to develop their skills. Over the coming months, they will work with job seekers to select and prepare planting sites, provide training to use equipment, such as augers to dig holes and watering systems, while also sharing horticulture skills around planting and caring for seedlings. Participants take part in these activities in return for payment.

"It's very important in the sense that it gives people something constructive to do, helps them gain skills and shows others in community what can be achieved", Peter says of the program's benefits.

The Tree Day team was lucky enough to take part in one of these activities — a large community tree planting event in Manyallaluk, an Aboriginal community of approximately 100 people. At the town's waterhole along the creek, five species of trees and shrubs suited to the harsh environmental conditions of Central Arnhem Land were sourced and planted. This event and others like it are an opportunity to engage communities in positive activities and provide them with both practical skills and knowledge about the local environment. The planting also provided an opportunity for community connection, with school students, the local council and other community members getting involved.



Gouldian finch

In addition to the engagement and training opportunities for job seekers, educational opportunity for school students and community connection, these plantings also provide ongoing environmental benefits via new seedlings.

The shade of these trees will allow for communities to gather and connect out of the heat of the harsh sun, while also providing habitat and shelter for the range of wildlife that inhabits Central Arnhem Land.

The black kite, whistling kite, brown falcon — three species known interchangeably as the ‘firehawk’ to Aboriginal people — and Gouldian finch are four bird species that will benefit from these trees in their habitat. Indigenous Australians have observed the fascinating behaviour of firehawks for thousands of years across the Australian continent. They are widespread in distribution and rely on tall trees for perching to search for prey and to spot fires.

Firehawks are known to fly into active fires to pick up smoldering sticks and transport them to unburned areas to ignite a fire. Igniting shrubs or grassland forces the small mammals, reptiles and insects they prey on to flee from their ground cover shelters and become easy targets for the raptors flying overhead³.

Brown falcon



Knowledge of this fire-starting behaviour has been part of considerations of Aboriginal cultural burning practices for thousands of years and is intimately connected to Dreamtime stories, ceremonies and sites³. In one Aboriginal language, the black kite is known as Kerrk, a reference to the “kerrk-kerrk-kerrk” sound of its call. A local Dreamtime story outlines Kerrk’s attraction to fires and how he was often spotted carrying fire sticks from existing fires to start new ones⁴.

The endangered Gouldian finch is distributed in small flocks across the Top End of Australia, primarily in the Northern Territory and the Kimberley region of Western Australia, with rare sightings also reported in North Queensland⁵. While there is only one species of these brightly coloured finches, their head plumage can be one of three colours — approximately 75 per cent have black faces, 25 per cent have red faces and less than 1 per cent have yellow/orange faces. Once covering much of Australia’s Top End, there are now only an estimated 2,500 adults remaining. Their decline is primarily due to altered fire regimes, destructive agricultural practices and being targeted by the pet trade before this was banned in the 1980s⁶.

Gouldian finches are found in tropical savanna woodland and feed mostly on grass seeds, however favour protein-rich insects during the breeding season⁶. As the trees planted in Central Arnhem Land communities mature, they will provide crucial nesting hollows for these vulnerable birds. The creeks and grasslands of the region and nearby Nitmiluk National Park provide suitable habitat for Gouldian finches and residents of Manyallaluk have been delighted when spotting them along the creek about five kilometres from the community.

Our time in Central Arnhem Land with the Manyallaluk community and Peter and Tracy from Nyirringgulgung-Rise highlighted the power of planting trees for both people and the environment. We shared stories and learned about community, culture and Country. We experienced the spectacular natural beauty of this region and felt the strong connections between Jawoyn people and their country. We saw first-hand how planting trees will provide training and employment opportunities, educate and inspire school students, connect communities and provide environmental benefits for firehawks, Gouldian finches and a wide array of other native wildlife.

The 750 trees being planted on National Tree Day thanks to support from The Seedling Bank will survive monsoonal rains in the wet season and searing heat in the dry, providing shade and shelter to animals and humans alike as they grow in the open woodlands in this remarkable pocket of Jawoyn country.

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Year 4 student Jocelyn

Howrah Primary School

TASMANIAN STUDENTS ARE PLANTING TO MAKE BANDICOOTS FEEL SAFE AGAIN

Howrah Primary School is beautifully located on the banks of the Derwent River in Tasmania. As one enters the school you are greeted by the sight of musk lorikeets perching in the surrounding eucalypts and galahs feeding near the sheoak by the playground.

But the school is also home to some secretive residents more likely seen when the stars are out than when school is in session: the eastern barred bandicoot (*Perameles gunnii*) and the southern brown bandicoot (*Isodon obesulus*). Students, teachers, the local council and Glebe Hill Landcare have come together to ensure they do everything in their power to give these two beautiful and vulnerable marsupials a fighting chance.

The bandicoots found at Howrah descend from the most primitive known bandicoot called *Yarala burchfieldi*. The name comes from the Wanyi people in Queensland and means 'root of tree'; likely a shout-out to their tendency to hang out in thick forest undergrowth. The local students love them and are well aware of the trials they face as a relatively defenseless little critter.

"[Bandicoots] are a brown fury animal that gets scared easily and it can lose its life easily because it only has a small heart," Year 4 Howrah student Robert says.

Along with bilbies, bandicoots are part of the *Peramelemorphia* order of marsupial omnivores. They have long snouts, pear-shaped bodies, thin tails and relatively slim limbs. Their nests are usually a shallow depression in the ground with grass over the top. At birth, the bandicoot is smaller than a jellybean!

While populations were once numerous across Tasmania and mainland Australia, bandicoots have suffered since European settlement due to habitat degradation and the spread of introduced species. Predation by foxes (*Vulpes vulpes*) has been central to the high extinction rate on mainland Australia¹. Three out of eleven bandicoot species are now extinct, with the remaining under serious threat.

Eastern barred bandicoots were once widespread but are now extinct in the wild populations on mainland Australia, surviving only behind predator-proof fencing or on island safe havens. The southern brown bandicoot still exists on mainland Australia,

but numbers have significantly decreased and in many areas of its range the species faces local threats.

Foxes have now spread across an estimated 76 per cent of mainland Australia but Tasmania has remained fox-free. There have been reports of several sightings over the past 100 years, but the evidence of an established population is lacking. Adam Holmstrom from Glebe Hill Landcare says Tasmania is rapidly becoming the last option for native animal species, with climate change only hastening this process.

"It's a refuge and a haven for threatened species," Adam says of the island state. Adam is working with the students to create a wildlife corridor — a link of vegetation joining two or more areas of habitat — to protect the bandicoots who inhabit the school grounds.

"20 metres is a good corridor width, and 50 metres is where they start to feel safe enough to breed and stay within," he explains.

At the school, the main threats to bandicoots are roaming cats and dogs off leash who prey on bandicoots where there's not enough habitat to protect them. According to Year 4 Howrah student Callan, the wildlife corridor will be *"a place which allows the bandicoots to live safely and not in fear"*.

Basket grass (*Lomandra longifolia*), blueberry lily (*Dianella revoluta*) and pig face (*Carpobrotus rossii*) are being planted by Adam and the school students to create the understorey and perimeter vegetation. Hopbush (*Dodonaea viscosa*) and sheoak (*Allocasuarina*) will be planted for the mid-story and white gum (*Eucalyptus viminalis*) for the surrounding area.

"Bandicoots like being in those sorts of shrubs and we're trying to make them feel comfortable so they can hide in the shrubs so cats and dogs can't see them," Year 4 student Ollie says.

Bandicoots perform a number of important environmental services for other critters. Chris Johnson, Professor of Wildlife Conservation at the University of Tasmania, describes them as 'ecosystem engineers' — species that have strong effects on ecological communities by causing physical change to the environment². Bandicoots dig through the soil, which improves soil condition, and disperse fungal spores through their faeces, which is beneficial for plants. They play a vital role in the ecosystem and will continue to do so at Howrah Primary School, they just needed somewhere to hide.

"The wildlife corridor keeps them safe because they can hide in the bushes that are going to be there and they can burrow underneath the trees," Ollie says.

Howrah students have already been busy planting around 450 plants as part of the wildlife corridor. On Schools Tree Day they are planting a further 120 trees, shrubs and grasses with financial support from The Seedling Bank, to help the bandicoots feel safe again.

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Left to right: Ollie, Jocelyn, Callan and Robert



Left to right: Jocelyn, Robert, Callan and Ollie in the school garden



Broken Hill Landcare

GREENING THE RED IN OUTBACK AUSTRALIA

In far western New South Wales, the landscape is a play of contrasts between pale blue sky, scarlet soil and vibrant bursts of green from plants that have evolved to survive the harsh environment over thousands of years.

The air is so pure it's said to generate 'perfect light', casting an aura of timelessness over the outback towns that dot the land. Out here, untouched vistas can give you the sense of staring straight back through time.

Broken Hill is renowned for vibrant colours that have provided backdrops for iconic Aussie films like *Mad Max* and *Wake in Fright*. This oasis in the desert is one of Australia's oldest mining towns and it's been referred to as one of the world's great 'mineralogical rainforests' due to its stores of silver, lead and zinc. It was also the birthplace of the world's largest mining company, Broken Hill Proprietary, or BHP Billiton.

Back in the 1930s, this arid zone was suffering from severe dust storms and erosion caused by early mining and grazing activities. At a time when arid land conservation was little understood, the Barrier Field Naturalists' Club, one of the oldest naturalists' clubs in Australia, advocated for the protection of this fragile environment.

Founded by Albert and Margaret Morris, pioneers of arid zone revegetation science in Australia, the club created an area known as the 'regeneration belt' or 'green belt' around the perimeter of Broken Hill¹. The club started their first fencing and planting project in 1936 when the natural area was fenced off to allow it to regrow. They planted 1,600 river red gums and 1,000 old man saltbushes in a regeneration reserve that still plays a vital role in protecting the town today.

The 'green belt' is still going strong thanks to a new generation of dedicated volunteers led by Simon Molesworth. Simon is the Honorary President of Broken Hill Landcare, Queen's Counsel and former Judge at the Land and Environment Court in Sydney and co-founder of the Environmental Institute of Australia and New Zealand. He was the Chairman of the National Trust in Victoria and helped set up both the National Environmental Law Association and Environmental Defenders Office. In short, Simon knows a bit about conservation.

In 2015, Simon was the force behind the City of Broken Hill being placed on the National Heritage List under the Commonwealth's Environment Protection and Biodiversity Conservation Act 1999, making history as Australia's first ever city to be listed.



Sturt's Desert Pea (*Swansonia formosa*) supplied by Broken Hill Landcare

"I could see that eventually mining and industrial activity would come to an end, I was desperate to help find a new future," Simon says.

Simon and the team of dedicated volunteers at Landcare Broken Hill have been working on several environmental projects including an initiative called Greening the Hill Mk2, which is reinstating the wild beauty of the arid zone, providing habitat for the unique flora and fauna that live in the regeneration belt and engaging a wider cross section of the community in tree planting activities.

There are many struggles in the arid zone. Between 2016 and 2020 Broken Hill suffered one of the most severe droughts in Australian history.

"One of the challenges is we can never guarantee rain. At the moment our current plantings have been watered by an elderly couple since mid-January. They go out two or three days a week to water the seedlings," Simon says.

There's no nursery in Broken Hill or in any nearby towns so Landcare Broken Hill have created their own 24-metre shade house and a separate propagation area with around 10,000 plants. Funding provided by The Seedling Bank is helping to support this important propagation project.

"Self-sufficiency is important. If we have environmental problems, we have to deal with it," Simon says.

The team have dug augured holes and prepared them with soil for their community planting for National Tree Day. All the plants are endemic to the area and have evolved over thousands of years including a variety of saltbush, acacias and a range of eucalypts.

"You can get colour, variety and beauty if you know what you're planting," Simon says.

Broken Hill Landcare are also working on projects with the Traditional Owners of the land, the Barkandji people, whose country spreads across approximately 128,000 kilometres, capturing the towns of Broken Hill, Wilcannia and Menindee. Barkandji take their name from the Darling River — Barka was the original name of the river, and 'ndji' means "belonging to". The Darling River is the lifeline of Barkandji people with stories attached to every stretch of it².

In Mutawinji National Park, Landcare and Traditional Owners are collaborating on a seed collecting project. The groups propagate seeds endemic to the park to grow seed stock and have 500 seedlings ready to plant in spring to renourish degraded areas of the park.

Simon and his team have big plans for the future. One of them is to create a Landcare Sustainability Hub that would be the largest nursery and seed bank in western New South Wales, large enough to produce 250,000 seedlings.

There are also plans for a teaching facility called 'The Meeting Tree' where up to 60 people can sit and learn about the environment. The upper surface of this stylistic tree will be moulded with flexible solar panels and the under surface will house LED screens and lights. The facility will also feature a children's garden, a pollinators patch and a giant sun dial.

"It will be like visiting a funfair but an environmental funfair – you go there and walk away inspired," Simon describes.

One of the challenges is we can never guarantee rain. At the moment our current plantings have been watered by an elderly couple since mid-January. They go out two or three days a week to water the seedlings.

Rough heliotrope (*Heliotropium asperum*) supplied by Broken Hill Landcare



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Sanderson Middle School

GOING GREEN TO HEAL WITH NATURE

Larrakia people are the Traditional Owners of the Garramilla (Darwin) region, with country running from Cox Peninsula in the west to Gunn Point in the north, Adelaide River in the east and Manton Dam in the south.

This expanse of the Top End is home to coastal and marine environments, mangrove swamps, monsoon rainforests, woodlands and sandstone escarpments.

The weather is hot, and the humidity is high in this wet-dry tropical climate. There are many ancient Aboriginal techniques for keeping cool, and the Larrakia people who have lived in the Northern Territory for tens of thousands of years describe water and shade as an essential part of their lifestyle.

A group of high school students from Darwin's Sanderson Middle School are carrying on this tradition by planting trees to shade future students. The Tree Day team visited the school earlier this year to meet the students and learn more about their project. A short drive from Darwin Airport, the school carpark is shared with frilled-neck lizards, hawks and invertebrates. Inside, the school's 'Eco Warriors' are working on a plan to green the school and create cool shady areas for future students to enjoy.

Joey, student at Sanderson Middle School

This passionate group of Eco Warriors is made up of students of all different backgrounds and ages, bonded together by their love of the environment and determination to create positive change for the future. During our visit, they show off the native bees and their hiding spots around the school. *"When you come out of class, you'll see them carrying little bits of pollen to their nest,"* Year 8 student Olivia points out.

The Northern Territory Government recently undertook heat mapping in Darwin's CBD, and found the city's surfaces could exceed a blistering 60 degrees at their hottest point¹. The CSIRO mapped Darwin's 'hotspots' and found paving, roofs, bare ground and dry grass hold heat, whereas 'cool spots' are created by trees, water, green vegetation and shade.

Joey from Year 7 describes the heat in Sanderson as the worst in Australia and very difficult to play in. Joey wants to be a lawyer when he grows up and his favourite animal is the goanna because they're the closest animal to a crocodile and he likes the feel of their tough skin. He has a vision to create more shade and less concrete because, *"when the heat hits the cement it just bounces back off"*.

"We need more trees in Sanderson. We have trees but they're mostly palm trees and they don't give us much shade," Joey says.

Sanderson Middle School caters for the learning needs of a wide range of middle school students, including children who have just arrived in Australia from refugee or migrant backgrounds. The school also has a Clontarf facility onsite to improve the employment prospects of young Aboriginal and Torres Strait Islander men.

Joey describes Clontarf as *"a place to help Aboriginal boys get through school"*; it's his favourite place to hang out and play table tennis with the other boys.

The Eco Warriors have worked on a range of upcycling and planting projects, from building worm towers and turning old fridges into recycled garden beds to creating sensory gardens for students with special needs, using soft plastics to sculpt vases and building solar powered ovens.

The group of Year 7-9 students is led by Food and Technology teacher, Carol Mathison. In addition to generating environmental benefits, Carol hopes planting projects will help students who suffer from anxiety. Her aim is to make the school gardens a place where students with trauma can find peace and enjoyment.

"There's a lack of nice spaces for kids to go when they're upset and they need to get out of the classroom," Carol says.

Carol launched a Sustainable Futures Day two years ago to get the whole school involved in environmental projects. She believes *"once they see the calming benefits of nature – they'll start to see the benefits"*.

"There's less and less trees in the world and it makes the world bland without any trees."

The school has run workshops on native bees, soil health, garden mosaics and urban heat control. The students have requested future lessons on quiet reflective gardens, musical gardens, fruit trees and homes for wildlife. The Eco Warriors have even linked up with a local wildlife group to help care for possums with stress-related dermatitis.

The Seedling Bank is helping to support their vision of a greener school with more shade, with approximately 100 native trees, shrubs and grasses funded through the program being planted at their next Sustainable Futures Day in September 2021. Year 8 student Sarah says it's important to plant trees because without them the world is more grey than green.

"There's less and less trees in the world and it makes the world bland without any trees," Sarah says. *"Trees add so much colour and fun, it's a happier environment."*

Carol hopes to see the school gardens become outdoor teaching spaces with food, Indigenous language and science classes all involved in studying and caring for plants throughout the year.

Joey's message for everyone in Australia is to get involved in tree planting: *"If students don't start planting now, well who's going to do it in the future?"*

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Carol and Anna, teachers at Sanderson Middle School



Oxley Creek Catchment Association

PLANTING AN URBAN OASIS FOR FEATHERED FRIENDS

Oxley Creek Commons is a large parkland located only seven kilometres from Brisbane's city centre and is part of the Oxley Creek Catchment area. Thick vegetation growing on the banks of Oxley Creek forms an oasis of green at the park's centre, attracting many human and animal visitors.

The Commons is well-known and loved by Brisbane locals, providing a dose of nature to those wanting to escape the chaos of the city. In addition to the people that flock to the Commons for some time in nature, this area is also an important habitat for a range of native wildlife. The wetlands, grasslands and riparian vegetation along the waterways provide habitat for mammals, birds, reptiles and insects. The birding hotspot is frequented by ornithologists and citizen scientists seeking intimate encounters with some of the world's rarest winged creatures.

However, the area has also felt the impacts of urban development over time, with much of the catchment now part of an industrial hub. Land clearing and flooding over recent decades have also put pressure on the existing vegetation and the ecosystem it supports, highlighting the clear need for reforestation efforts in the Commons.

This year, Oxley Creek Catchment Association (OCCA) will be supported by a grant from The Seedling Bank to plant 750 seedlings in this vulnerable area. The seedlings will be planted on National Tree Day by OCCA, Bushcare groups and local community members along the creek to connect the grasslands to the waterway, creating more habitat for birds and other wildlife near the water. These plants will provide green corridors for birds, mammals and reptiles, allowing them to move between patches of habitat with greater ease.

Despite the pressures facing the area, Oxley Creek Commons remains a birdwatching hotspot, with 223 species recorded by experts and birdwatching enthusiasts over the years¹. About a quarter of Australia's native bird species have been spotted here, in addition to migratory birds from as far as Northern Asia and Europe.

Professor Hugh Possingham, an expert birdwatcher and President of the Friends of Oxley Creek Commons community group, has spent decades observing the birds of Oxley Creek. The University of Queensland Professor is the Chief Scientist for the Queensland Government and directs two national research centres — the Australian Research Council Centre of Excellence for Environmental Decisions and the Australian Government's Threatened Species Recovery Hub. Hugh is a passionate scientist and his research projects focus on decision making theory in conservation biology.

Over the last 15 years, Hugh has visited Oxley Creek most weeks to observe the area's birdlife.

"The black-necked stork regularly turns up and many migrants use the park. Latham's snipe is one species of concern that uses the park and is covered by a migratory bird treaty with Japan," Hugh says.

Every year, the Latham's snipe travels between their breeding habitat, primarily in Japan and the East Asian mainland, and southeast Australia, passing through New Guinea on their journey south². They are the largest snipe found in Australia and are widely dispersed in small numbers across grassland and wetland habitats³.

Black-necked storks are the only species of stork found in Australia. They favour wetland habitats in the north and northeast parts of Australia as they feed on fish, small crustaceans and amphibians².

Black-necked stork photographed at Oxley Creek Commons by Mat Gilfedder



Despite the pressures facing the area, Oxley Creek Commons remains a birdwatching hotspot, with 223 species recorded by experts and birdwatching enthusiasts over the years.

They are less common as far south as Brisbane, but the wetlands at Oxley Creek Commons provide a suitable patch of habitat for these long-legged water birds.

"The main reason for so many species being here is the wetland and open grassland," Hugh explains. *"There are few areas in the suburbs of Brisbane with open grasslands."*

In addition to providing critical habitat for the black-necked stork and Latham's snipe, grasslands and wetlands are important habitats that support birdlife worldwide. In Australia, there has been continued degradation of wetlands since European occupation, reducing habitat for the wildlife that rely on these ecosystems to survive⁴.

Native grasslands have also been progressively cleared across the country, highlighting the importance of this habitat for those species inhabiting southeast Queensland.

Citizen science and community engagement is a central factor in the continued biodiversity at the park, with Hugh attributing the abundance of birdlife to *"4,000 bird lists made by citizen scientists"* over the years.

In addition to the tireless work of birdwatchers who collect data on the birds of the Commons, volunteers have been weeding, planting native flora and educating at the Commons for decades.

The 'Tuesday Common Carers' meet at the park weekly, getting their hands dirty weeding and planting. A number of experienced birdwatchers, ornithologists and other scientists also host regular birdwatching tours and information sessions on the local biodiversity.

Oxley Creek Commons continues to face challenges around land management, with investment needed to further improve the landscape. Urban development and unsustainable use of the area remain threats to the Commons and the flora and fauna within. The ongoing work of the team at OCCA, in collaboration with the hardworking volunteer groups and the local community, will ensure that restoration work continues at the Commons to increase biodiversity and support local wildlife. The seedlings planted on National Tree Day this year are an important part of efforts to protect this unique urban biodiversity hotspot into the future.

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Mangrove lined waterway at Oxley Creek Commons



Kaleen Primary School

THE SCHOOL CREATING A 'CARBON FOREST' IN THE BUSH CAPITAL

Kaleen Primary School sits on Ngunnawal land in the northern suburbs of Canberra, a city with so much green space it is known as “the bush capital” of Australia.

The suburb's name means water in Wiradjuri, the language of the Traditional Owners whose lands sit to the west of the ACT, with small creeks flowing into Kaleen from the nearby Lake Ginninderra.

Two dedicated teachers at Kaleen Primary, Kelly Reeves and Joanne Keens, are leading an environmental movement at the school, educating students on numerous sustainability topics. Their current project is fighting to protect the local environment by planting a 'carbon forest' on school grounds.

“We cover water, energy, biodiversity, Indigenous perspectives, composting, recycling, waste reduction, carbon offsetting, energy efficient housing and of course tree planting,” Kelly explains.

Kelly and Joanne recently facilitated the first stages of the carbon forest project, which aims to offset the carbon their school produces and create habitat for local wildlife. So far, the teachers and students at Kaleen Primary have planted trees, shrubs and grasses and built a frog pond to provide a home for the nine species of frog commonly found in the ACT¹.

“What began as a carbon forest to harvest carbon for a healthy atmosphere has now grown into a biodiverse micro-forest that is building natural habitats for Australian animals, birds and insects,” Kelly says.

Trees are such an important weapon in the fight against climate change because of their ability to remove carbon dioxide from the atmosphere. Trees and other plants do this through photosynthesis, the process of turning sunlight into plant food, where carbon is absorbed by leaves, branches, stems, bark and roots. Approximately half the dry weight of a tree's biomass is carbon and because of this ability to sequester and store carbon, investing in both reforestation and conservation of forested areas is of critical importance².

Carbon forest planting site at Kaleen Primary School, featuring newly created frog pond



The restoration of forested landscapes remains among the most effective strategies for climate change mitigation. A 2019 study published in *Science* mapped global potential tree coverage and found that there is room for an extra 0.9 billion hectares of canopy cover on earth. According to the research, areas that would naturally support woodlands and forests could store 205 gigatonnes of carbon³.

The 2018 Intergovernmental Panel on Climate Change (IPCC) also highlighted tree planting through agroforestry, afforestation, reforestation and urban greening as an important climate change mitigation tactic due to trees ability to remove carbon from the atmosphere.

The second stage of planting in the carbon forest has been funded by a grant from The Seedling Bank. On Schools Tree Day, the students and teachers at Kaleen Primary School are planting 130 trees, shrubs and grasses on the school grounds as well as creating nature-based art. This hands-on experience will help to enhance students' understanding of their local environment and allow them to see the physical difference they have made in reducing their carbon footprint.

*“After watching and reading *The Lorax* by Dr Seuss over the past few years we have been discussing what life would be like without trees. Every year we celebrate National Tree Day by capturing in art the beauty of trees to inspire our convictions and passion to care for nature and particularly living things,”* Kelly says.

In addition to the ecosystem services trees, shrubs and grasses will provide through carbon sequestration and habitat creation, the carbon forest will also provide an outdoor education space for the students at Kaleen Primary School. Indigenous studies and cultural integrity are two classes expected to be taught in the carbon forest, with the natural environment giving students the opportunity to connect to Country.

“We want to take better care of our national parks and forests by learning how Aboriginal Australians have taken care of Country for thousands upon thousands of years,” Kelly explains.

While planting trees is an effective means of capturing and sequestering carbon, it's no silver bullet in the fight against climate change. To limit the increase in the earth's temperature, significant shifts in technology, industry and resource use will be needed worldwide, including the transition to a circular economy and renewable energy sources.

Kaleen Primary School has taken a holistic approach to reducing its carbon footprint by implementing a range of programs, from waste reduction and recycling systems to sustainable water use, tree planting and other gardening projects. The school's approach to sustainability proves small everyday actions can lead to big change.

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Brush-tailed phascogale, photos supplied by William Terry

Tooborac Primary School

BUILDING HOMES FOR VULNERABLE PHASCOGALES IN VICTORIA'S OLD GROWTH FORESTS

Nestled among misty green forests and granite boulder studded hills is the small town of Tooborac in regional Victoria. This picturesque town lies 90 kilometres north of Melbourne in the Heathcote area and is home to just 300 people and the oldest pub in country Victoria.

Dotted among the area's farmland are patches of old growth forest that provide critical habitat for a range of native wildlife, including the elusive phascogale.

There are three species of phascogale: brush-tailed phascogales (also called tuans in Victoria and wambengers in Western Australia), red-tailed phascogales and northern brush-tailed phascogales. They are small marsupials, with brush-tailed females weighing only 150 grams and males 230 grams.

The brush-tailed phascogale (*Phascogale tapoatafa*) is distributed widely across Victoria, however in small and fragmented populations. It is listed as vulnerable by the Victorian Government and in 2018 Tooborac Primary School was recognised as an area that could provide habitat for these threatened mammals¹. The presence of phascogales was since confirmed, with students locating two dead male individuals. All male phascogales live short lives of approximately 11.5 months and die after their first mating season whereas females can live for two or three years.

Experts determined that the trees, shrubs and grasses on the school grounds, and in surrounding areas, were important feeding and nesting habitat for phascogales and other gliders.

Unfortunately, experts also noticed the bush surrounding Tooborac Primary School currently lacks nesting hollows for phascogales and other gliders. Now, students and teachers are building homes to provide habitat for these critters and protect the old growth forests that they occupy. Over the last three years, students and teachers from Tooborac have taken action to support them by building nest boxes to install in trees around the school grounds and on surrounding properties.

Biolinks Alliance, an environmental organisation based in regional Victoria with a focus on large-scale landscape restoration and conservation, hosted an information session with Tooborac Primary School students after the school was declared phascogale habitat. This helped students identify important phascogale habitat trees in the box-ironbark forest surrounding their school.

"These sessions are so important for young children in the Heathcote community, who already have such a brilliant knowledge of local native animals, to really engage with the environment around them and understand the impact and importance of trees in the landscape," Natalie Will from Biolinks explains.

Dr Diana Fisher has spent over 20 years studying all three species of phascogale. She is an Associate Professor at the University of Queensland and the Vice President of the Australian Mammal Society and her research projects focus on the evolution and conservation of Australian mammals.

"They all have a black brush of stiff hairs on their tail shaped like a bottlebrush and they raise these hairs when alarmed or excited and rattle their tail. They also tap on branches with their fingers to communicate an alarm signal,"

Diana says of one of her favourite research subjects, the phascogale.

Phascogales are primarily tree dwelling and can jump between branches, run head-first down tree trunks and even run completely upside down. These active animals rely on the large trees in old growth forests in the Heathcote area for nesting habitat, as do yellow-tailed black cockatoos, barking owls and other gliders. They are also important for the critically endangered swift parrot, who depend on the box-ironbark forests of the Heathcote region during their winter migration. The preservation of these old growth trees that phascogales rely on so heavily is crucial to their future survival in the area.

Although phascogales are mostly arboreal creatures, their carnivorous diet also brings them to the ground, where they forage for insects and occasionally small reptiles². They require herbaceous ground cover, where they hunt in leaf litter.

With funding from The Seedling Bank, Tooborac Primary School are planting foraging habitat for these vulnerable marsupials on Schools Tree Day. A mix of shrubs and grasses will provide

the habitat for their prey, in addition to providing shelter from predators that they can move through while hunting. *"Maintaining understorey helps to keep soil and litter moist in dry periods, to keep abundance of litter invertebrates high,"* Diana says, highlighting the importance of planting shrubs and grasses in phascogale habitat.

Diana lists the loss of habitat, forest fragmentation, predation by cats and foxes and increased fire intensity due to climate change as the primary threats to the brush-tailed phascogale. This wide range of significant threats requires a holistic approach to their conservation. The planting project at Tooborac Primary is a small but significant step in ensuring the phascogales of the Heathcote region have enough prey available.

The seedlings planted at Tooborac Primary School on National Tree Day, in addition to the new nest boxes and preservation of large old trees, will be part of the uphill battle to secure a future for these mammals and many other vulnerable species in the region. The commitment of the staff and students at the school, in collaboration with local environmental organisations and landholders, to both conserve existing and create new habitat for the brush-tailed phascogale will create a haven for these bushy acrobats among the eucalypts of central Victoria.

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Acknowledgements

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Partnership: Toyota Australia

After 22 years of partnership between Toyota Australia and Planet Ark, we have seen thousands of environmental projects completed and over 26 million trees planted across the country as part of National Tree Day. After listening to the community and identifying a need for funding to support schools and community groups in their tree planting efforts, Toyota Australia assisted Planet Ark in launching The Seedling Bank in 2019. Two years later we are proud to share the stories of some of the beneficiaries of these grants, highlighting the important work of community-led environmental projects across Australia.

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