

Keeping the bush in the city – 21 years of Bush Forever



Department of Biodiversity,
Conservation and Attractions



Bushland News is a quarterly newsletter of Urban Nature, a Department of Biodiversity, Conservation and Attractions Parks and Wildlife Service program to support community involvement in bushland conservation.

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This publication is available in alternative formats on request. Current and archived issues of *Bushland News* are available at pws.dbca.wa.gov.au/bushlandnews

Next issue

Winter *Bushland News*

Autumn *Bushland News* contributions should be sent to [Urban Nature](#) by **8 February 2023**. *Bushland News* seeks original contributions. If your submission has been or may be published elsewhere please let us know. Compiled and edited by Anna Wisolith and Julia Cullity.

Keeping the bush in the city – 21 years of Bush Forever

By Christine Richardson

It was a beautiful setting at the Herdsman Lake Discovery Centre where 90 people gathered in the early evening of Friday 14 October 2022, all there to celebrate the 21st birthday of Bush Forever. The [Bush Forever policy](#) was announced in State parliament in 2000 by then Planning Minister Graham Kierath and Environment Minister Cheryl Edwardes. Minister Kierath proudly highlighted that no other city in Australia had ever done anything on this scale “This strategy puts Western Australia at the forefront of world cities in conserving their biodiversity”.

Twenty-one years later, speakers re-lived the development of the Bush Forever policy and reminded us of the importance of Bush Forever in accessible terms.

Botanists **Bronwen and Greg Keighery** [OAMs](#) gave a team presentation. They have contributed to Bush Forever much of their lives and were involved from the beginning.

Bronwen used the analogy of the satin-lined, knitted baby blanket that has been passed on through generations of her family for how we ensure care of the heritage of our biodiverse, precious and unique bushlands and wetlands that are also ‘passed on’.

Cover photo:

Christine Richardson, Chair of Urban Bushland Council, addressing an attentive crowd in a natural setting at the Bush Forever 21st Celebration on 14 October at Herdsman Lake. Photo – Colma Keating.

“It seems most people can relate to the heritage value of the cradle/pram blanket made for my mother by one of my grandmothers. Both grandmothers were talented knitters, so we are not sure where it originated. However, we do know it was made by one of these women. For my grandchildren I have replaced the satin backing and repaired some holes in the knitting. This will be passed on. Bushland is very much part of the heritage I wish to leave for all future generations. Bushland needs maintenance and restoration just like my heritage blanket.”

Greg outlined a knowledge journey in five volumes from 1975 to 2019. He used five reports over that period to illustrate how knowledge of our flora has changed over his career.

“In 1979 Neville Marchant and myself made the first attempt to list threatened plants in WA, leading to the Declared Rare and Priority Flora Lists now used. The current revision of *Growing Locals* will list over 2,000 species in the Perth Metro Area, more than many northern hemisphere countries! We can now truly state that Perth is at the centre of a global biodiversity hotspot for plants, but much remains to be learnt about our unique plants and their adequate conservation.”

David Nunn, former Director of Sustainability & Environmental Planning in the Department for Planning, guided the development and delivery of the Bush Forever program. He outlined the challenges of delivering on this policy across six years, two elections, two reviews and four lead ministers.



The speakers re-lived the development of the Bush Forever policy and reminded us of the importance of Bush Forever in accessible terms. Bronwen Keighery with baby blanket draped on her shoulder (clockwise from top left), David Nunn, Jessica Stojkovski and Mary Gray (bottom left) were also joined by Greg Keighery, Traditional Owner Samuel Pilot-Kickett and MC Christine Richardson to help celebrate what is still a remarkable and vital policy achievement to keep bush in the city. Photos – Marg Owen.

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"Bush Forever stands on the shoulders of many over many years...starting with Whadjuk People pre-1829...custodians whose way of life we can only still touch in partial ways with our modern scientific notions of ecology, ecosystem services, cycles and food webs. So the first acknowledgement is of First Nations People, Culture and Country upon which Bush Forever seeks to salvage some representations of some of that. Community support and voices are vital and those doing their bit across the spectrum of work needed to protect and manage these bush areas deserve a round of applause...and they know what the bushland and social connections that go with it means for them."



A recurring theme at the Bush Forever celebration was the need to protect and conserve our natural heritage for its intrinsic value and for future generations. It was great to see families of bushcarers out in support of Perth's bushland and the love of bushland being passed down. Here is Mark and Sue Conlon with daughter Megan Judd (centre), all volunteers with the Friends of Mosman Park Bushland and members of Urban Bushland Council. Photo – Colma Keating.

Mary Gray has been deeply involved in Bush Forever and has championed it since the early 1990s. She was instrumental in forming the [Urban Bushland Council \(UBC\)](#) and her passion and dedication in striving to protect and enhance our urban bushland is well recognised. "It has been a long journey – getting our unique, precious, biodiverse bushland in the Swan Coastal Plain portion of the Perth Metropolitan Region protected in the '[CAR](#)' conservation reserve system."

Honourable **Jessica Stojkovski** MLA, Parliamentary Secretary to the Minister for Transport; Planning; Ports released the [Bush Forever Audit 2021](#) including an interactive online [story map](#).

The audit recognised "In 2000, Bush Forever identified 51,200 ha of regionally significant bushland on the Swan Coastal Plain portion of the Perth Metropolitan Region to be protected through a number of differing and alternative mechanisms. And now, 21 years later, 99 per cent of that vegetation remains intact, a significant achievement... Thus, while much of the focus of implementing Bush Forever over the last 20 years has been on acquisition and reservation of bushland, management responsibilities and funding will become more important."

It was important for the Urban Bushland Council that members of friends groups be part of the celebration. They work on the ground and in other ways in a voluntary capacity and know the importance of these sites. So, it was wonderful that UBC members, officers of government agencies, past movers and others involved in so many ways could enjoy listening to our speakers, mingling, relaxing and celebrating as the sun set beyond the Herdsman Regional Park - [Bush Forever site 281](#).

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Urban Nature Update *By Julia Cullity*

It was great to reflect on the huge achievement that is Bush Forever and celebrate it with the community of people who cherish bushland and have worked so hard to conserve and protect the bush in our city. Thanks to the Urban Bushland Council for hosting the 21st celebration and to all the inspirational speakers. The work that went into understanding the values of Perth's bushlands and selecting Bush Forever sites, the political will to enact the whole-of-government policy, the negotiations involved in implementing planning solutions and the continuing active management of our regionally significant bushlands have all contributed to its ongoing success in 'Keeping the bush in the city'. I still constantly refer to [Bush Forever Volume 2: Directory of Bush Forever Sites](#). And so to play out a theme I've hyperlinked every mention of a Bush Forever site in this issue to its site description.

There are lots of changes to announce this issue. The Urban Nature team have farewelled Anna Wisolith. I would like to thank Anna for stepping in for me while on secondment and particularly her dedicated work as the editor of *Bushland News*. I've got big shoes to step back into. Anna hasn't gone far. She has taken another role within the Department of Biodiversity,



Anna loves a good read and a high quality image so we hope she will enjoy our farewell gift to her as she moves roles within the department. Bushland News will miss her editorial style, but we will work hard to keep up to her standards. Photo – Karen Clarke.

Conservation and Attractions (DBCA) and is working on listing and recovery actions for threatened ecological communities.

We also had to say goodbye to our students Lucy and Litia, who have completed their Conservation and Wildlife Biology degrees in a work placement with the department. It was great to have their enthusiasm, energy, input and problem solving. They both demonstrated their love of bushland and I would love to see them rewarded with a career in conservation.

This issue we have decided to farewell the What's on section. As a quarterly publication we can't really do justice to the breadth of events within the bushland management community over a three month period, we either get to the party too early or too late. Websites and social media are a better place to get up-to-date information.

Here are my suggestions for some great websites to find out what's happening or to promote your own events. Have a look at [Perth Region NRM Facebook](#) or [website](#), [SERCUL Facebook](#) or [website](#), [Wildflower Society of Western Australia](#), and the Facebook pages of branches [Eastern Hills](#) and [Murdoch Branch](#) [Conservation Council of WA Facebook](#) or [website](#), [Urban Bushland Council Facebook](#) or [website](#), [WA Naturalists](#),



Litia Cameron Pearson (left) and Lucy Mackay surveying for threatened flora in the Perth Hills. We wish both women all the best and hope that the time spent as interns with us will give them a boost with their future careers. It was great spending time with you both. Photo – Kimberlee Kucera.

[Cockburn Wetlands Education Centre Facebook](#), [Naragebup Facebook](#), [Nearer to Nature](#), [Kings Park events calendar](#), [Armadale Gosnells Landcare Group](#) and [Birdlife](#).

You could also become part of [Find a Conservation Group](#), our virtual friends group community where you can promote your regular bushcare workdays. The app allows groups to create a short description of their aims and activities and add some contact details including your Facebook or website or perhaps just a phone or email. If you're not on the map, get in touch with us at [Urban Nature](#) to become more visible and let others know about your group.

Flaxleaf fleabane (*Erigeron bonariensis*) and a novel biological method for its control By Julia Cullity

Flaxleaf fleabane (*Erigeron bonariensis* previously *Conyza bonariensis*) has a [biological control agent](#) developed by CSIRO and approved for release in Australia last year. The [biological control agent is a microcyclic rust fungus](#) native to Colombia, South America, the native range of *Erigeron bonariensis*. The CSIRO is currently undertaking a pilot release study to ascertain the most effective methods for deployment of the fungus, and the conditions under which the fungus exerts the greatest impacts on its host weed under Australian growing conditions.



Target specificity

Flaxleaf fleabane is part of the [vast daisy family, Asteraceae](#). The CSIRO tested a subset of 51 weed, ornamental, and native plant species in the subfamily of Asteroideae, where *C. bonariensis* belongs, to [assess the effect of the biocontrol agent on non-target species](#). The rust fungus (*Puccinia cnici-oleracei* ex. *Conyza*) is highly specific to *E. bonariensis* and has been shown to only complete its lifecycle on this weed and, to a very limited extent, on the introduced *Eschenbachia leucantha*. The fungus is unable to complete its lifecycle on other related plant species, including native Australian species. As such, after a comprehensive risk assessment process, the Australian federal regulator granted approval for the fungus to be released into the Australian environment as a safe, sustainable, and landscape-level means of *E. bonariensis* control.

Description

Flaxleaf fleabane is a weed of all states and territories in Australia, mostly in the temperate and Mediterranean regions. It is an annual herb. Initially forming a basal rosette, this erect herb grows a flowering stem up to 1m with grey-green leaves. Fleabane doesn't have

Flaxleaf fleabane doesn't have the ray florets of many daisies. Its flowers are insignificant tubular florets, but it produces masses of cream-coloured seed-heads which disperse in the wind. Photo – Julia Cullity.



Flaxleaf fleabane prefers a disturbed habitat, hence its invasive nature in farmland cropping systems. Here it is invading bushland on the limestone ridge at Manning Park from the ruins of old stone farm buildings. Fleabanes are hard to tell apart. One of the characteristics of flaxleaf fleabane is that the stems branch below each pyramid of flowers in a candelabra shape. Photo – Julia Cullity.

the ray florets of many daisies, instead its flowers are insignificant tubular florets, but it produces masses of cream-coloured seed-heads reminiscent of a dandelion-clock. The flowers are arranged in branched clusters that form a terminal pyramid-shape. Fleabanes are hard to tell apart and you will need a [key for definitive identification](#).

Continued next page ...

However, the distinguishing features of flaxleaf fleabane are the upper leaves tend to be oblong to linear and entire and not toothed and the stems which branch below each pyramid of flowers in a candelabra shape. It can flower throughout the year but tends to be more prolific in the warmer months.

Impacts

Flaxleaf fleabane tends to be a weed of disturbed areas and rarely invades intact bushlands. It doesn't compete well in high plant density or cover. The [economic impact](#) of flaxleaf fleabane in grain growing regions is why it was selected as a candidate for biological control. It is the third most problematic weed in summer fallow and glyphosate-resistant populations have developed in NSW and QLD.

Management

As an annual weed of disturbed soils, [establishing desirable vegetation](#) will discourage further weed recruitment. [Traditional weed management techniques](#) include hand removal before they flower. They will regrow from basal leaves if the stem snaps and only the top is removed and will after-ripen to set seed if pulled and discarded once flowering has begun. Spray 1% glyphosate to actively growing plants prior to flowering, or wipe stems with 33% glyphosate. Lontrel®750 at 4g in 10L water plus 25ml wetting agent is fairly selective in bushland.

The biocontrol

The CSIRO found that the rust fungus affects both young and old leaves, stems, and sepals of flaxleaf fleabane. The fungus obtains necessary nutrients



CSIRO are trialling a release of a rust fungus that only infects flaxleaf fleabane. All non-target plant species tested were resistant to it. The biocontrol agent may help to reduce overall populations of flaxleaf fleabane when integrated with existing weed management strategies. The rust fungus affects both young and old leaves, stems and flowerheads of the weed. Photos – CSIRO.

from its host plant thereby restricting the host plant's development and reproduction while the fungus' telia, it's spore-producing bodies, destroys the plant tissue it grows on reducing the photosynthetic capacity of the plant. The CSIRO is currently trialling field releases of the fungus in cropping environments in eastern Australia, specifically the Riverain in NSW and the Darling Downs in southern Queensland. The fungus is released passively by placing an infected leaf above a healthy plant and covering the plant in a plastic sheet for 24 hours to maintain high humidity necessary for the germination of fungal spores and infection of *E. bonariensis*. The fungus cannot be

released by spraying spores suspended in water. At present, the CSIRO is welcoming [registration of participants](#) for a possible future mass-release program in 2023, but as yet the fungus is not widely available to the public.

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Ticks suck!

By Xavier Barton

Ticks carry and transmit the most diverse range of pathogens of any blood-sucking arthropod. Australia only has 3 recognised zoonotic tick-borne diseases (pathogens transmitted from animals to people via ticks), [Queensland Tick Typhus](#), [Flinders Island Spotted Fever](#), and [Q fever](#), however ticks can also cause [tick paralysis](#) and [mammalian meat allergy](#) in people. Ticks can also cause devastating diseases that affect livestock and companion animals, such as [Bovine theileriosis](#) in cattle and [Canine ehrlichiosis](#) in dogs.

Due to this, it is imperative that these dangerous arachnids (ticks are not insects!) and their pathogens are monitored to protect ourselves and our animals.

The aims of my current project to monitor ticks are three-fold.

Firstly, I will be using a novel tool 'Double Digest Restriction Associated DNA Sequencing (ddRADseq)' to analyse the genetic structure of tick populations in Western Australia (think CSI DNA fingerprinting of ticks). The results from this process will indicate where and how ticks are moving across the environment. For example, the segregation of tick populations across urban areas will be examined, as well as how widely tick populations move within national parks.

Next, I aim to determine which environmental factors are influencing how tick populations move. This will be achieved by analysing both human factors (suburbanisation, roads, agricultural lands/farms and livestock movements) and natural factors (kangaroo movements, bushland types/densities, temperature and rainfall).



Adult ornate kangaroo ticks (*Amblyomma triguttatum*) collected from Yeal Nature Reserve, Western Australia. Photo—Xavier Barton.

Finally, once the populations of ticks have been mapped out geographically and potential factors influencing population changes have been analysed, the ticks can be scanned for microbes. I will be looking for pathogens of interest, as well as any new microbes that may cause disease.

The iNaturalist project [Tick Exploration](#) has been created to aid in the collection of tick samples. iNaturalist is a website where people upload pictures/recordings of organisms around them; the community then determines what species it is, which often leads to a research grade observation. This site will allow me to identify locations where I can collect ticks for my project, as well as providing information on the species of ticks



Collecting ticks from a flag trap in Yeal Nature Reserve. The white flannel cloth is dragged over the ground. Ticks believe this cloth to be an animal host moving through the environment and try to attach to it. We can then pick them off the cloth and store them. Photo—Billi Veber

present and the seasons in which they emerge. I encourage everyone to join this project.

In addition, our group is still recruiting tick bitten people into a [study](#) to examine why some people develop long term illness, while others recover quickly. People who have been bitten by ticks in the past 72 hours should consider enrolling by calling Michelle on 1300 817 070.

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Have your say

Draft Forest Management Plan 2024-2033

[The Draft Forest Management Plan 2024-2033](#) covers 2.5 million hectares from Lancelin north of Perth, to Denmark on the south coast and sets out management activities to protect forest values and balance the many ways our south-west forests are used.

Prepared by the Conservation and Parks Commission through DBCA, the draft plan gives effect to the WA Government decision to end commercial logging of our native forests from 2024. Under the plan, at least 400,000ha of karri, jarrah and wandoo forests will become nature reserves, national parks or conservation parks, meaning nearly two million hectares of native forests will be protected into the future.

For the Noongar Traditional Owners, the development of the plan is set against the background of the South West Native Title Settlement and new legislation the *Aboriginal Cultural Heritage Act 2021* and legislative amendments to the *Conservation and Land Management Act 1984* (CALM Act), which offer improved protection for significant sites and Aboriginal cultural heritage.

As part of the South West Native Title Settlement, Noongar Traditional Owners and DBCA will enter into formal agreements to manage all CALM Act lands and waters in the Settlement Area (referred to as the South West Conservation Estate), including the south-west forests. These agreements offer recognition and support for Noongar Traditional Owners to carry out their roles and responsibilities as protectors and managers of country and culture and facilitate two-way learning to support integration of traditional knowledge with contemporary science and management practices.

[Public comment](#) is welcomed, and the submission period is open until **Sunday 18 December 2022**.



A unique artwork by Noongar artist Linda Lee Loo (Linlelu Arts) is featured in the Draft Forest Management Plan 2024–2033 representing the Noongar seasons of Western Australia's south-west. The original artwork, titled *Noongar Seasons* (acrylic on canvas 70 x 60cm © Linda Loo/Copyright Agency, 2022), was commissioned by DBCA specifically for use in the plan to honour the Noongar people as traditional owners of the south-west region and the forest management plan area. Photo – Tara Mathews.

Draft Sandalwood Biodiversity Management Programme

The [Sandalwood Biodiversity Management Programme](#) will set out how Western Australia's wild sandalwood will be conserved, protected and managed now and into the future, consistent with the requirements of the *Biodiversity Conservation Act 2016*. This will apply to the management of wild sandalwood on both Crown and private lands across Western Australia and will not apply to plantation sandalwood. The [public comment period](#) is open until **Friday 9 December 2022**.

EBPC Act nominations

The Threatened Species Scientific Committee is seeking public comments on two nominations for listing Western Australian species and ecological communities as threatened under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.

The comment periods on the eligibility of [Eucalyptus redimiculifera](#) and the assessment of and draft Conservation Advice for the [Empodisma peatlands of southwestern Australia](#) are open until **Friday 16 December**.

WORKING FOR NATURE

2021 COMMUNITY CAPACITY ASSESSMENT



natural resource
management program



By Ingrid Sieler and Raphaela Raaber

Hundreds of volunteers have contributed to the [Community Capacity Assessment 2021](#) (CCA2021) over the last year. The journey to uncover the invaluable work of environmental groups has been astonishing, and the [report](#) is out now.

The CCA2021, funded by [State NRM](#), aims to provide a holistic understanding of community groups engaging in Natural Resource Management and seeks to make the voices of environmental volunteers heard.

The assessment demonstrates the value and contribution of environmental community volunteers and has generated results that will directly benefit and inform volunteers and their partners such as non-government organisations, land managers and local government authorities.

As the findings of the CCA2021 indicate, the 216 participating volunteers contributed over 113,800 hours of volunteering labour, worth almost \$5.47 million dollars. This is a conservative estimate, considering most of these volunteers work in different groups.



216 volunteers
contribute per annum
a total of...



... **71,424 hours** of
on-ground work



... **42,468 hours** of
support activities



in total **113,892 hours**
which represents an
estimated value of...



\$5,467,954.92
(calculated at \$48.01/hr)

Participating individuals reported spending in total almost 9,000 hours on revegetation activities, some 8,500 hours on weed control and over 7,000 hours on the rehabilitation of injured native wildlife. Other significant activities included rubbish removal and community education.

Many groups would like to work more closely with the land managers to plan their activities and receive more guidance and support to learn about Aboriginal cultural heritage and consult with Traditional Owners.

Even though the report identifies issues and gaps it also provides bright spot case studies from which we can learn and get inspired. Volunteers are solution oriented.

We are delighted that this project has given rise to the Environmental Umbrella Group Collective. The group includes organisations such as [SERCUL](#), [UBC](#), [Perth](#)

[NRM](#), [AGLG](#), [EBICG](#), [JCCCF](#), [WALGA](#), [WALN](#), [DBCA](#), and [CMCN](#). These organisations decided to come together and work collectively on shared and systemic issues in the sector, and to improve the support they provide to environmental community groups by strengthening partnerships and fostering capacities.

We would like to acknowledge all the people that contributed to the Community Capacity Assessment 2021 project. For those who want to continue taking part in the discussion of how environmental volunteering in the Perth region can be shaped in the future, we invite you to join [PNRM Enviro Network](#) | [Facebook](#).

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Join the biosecurity frontline

By Jodie Gysen

Bushwalkers, cyclists, campers and nature lovers are being asked to keep their eyes turned both upward and downwards as they head out to enjoy the sunshine. This is the time of year that unwanted plant pests and diseases, weeds, and pest animals start to rear their ugly heads. Insects, pest birds and feral animals venture from their winter hideouts, tree pests and diseases attack new plant growth, and weeds start to sprout.

The Department of Primary Industries and Regional Development (DPIRD) carries out a range of surveillance programs each year to prevent the entry or spread of our biggest biosecurity threats. However, risks are growing and WA needs more 'eyes on the ground', and 'in the sky'.

The risk of foot and mouth disease entering WA has helped increase biosecurity awareness, and the risks to our primary industries. However, our environment is equally at risk. Feral pigs could not only spread disease, but also destroy plants and pollute water sources. Pests such as invasive ants have been known to destroy entire ecosystems, and diseases such as myrtle rust can destroy entire forests.



[African black sugar ant](#) was previously unknown in Australia but in 2020 was found at a number of sites in Perth. All known infestations are under eradication. Photo – Dr Wynand.

Early detection is WA's best biosecurity defence

DPIRD's annual spring/summer surveillance programs are underway. However, bushland areas are difficult to access to set and check traps. The public can support surveillance programs by looking out for anything unusual such as

patches of dead shrubs or trees, or large numbers of ants that are the same species. This means they could be an invasive and aggressive ant such as the [Argentine ant](#) or the African [black sugar ant](#).

Other pests to keep a lookout for in natural areas, including local parks, include:

[European wasp](#), [polyphagous shot hole borer](#), [myrtle rust](#), [feral pigs](#) and [Noogoora burr](#).

Even pretty birds can be a pest!

Noisy birds are not just annoying. Some birds are declared and destructive pests and are found in WA only because they escaped or have been released.

DPIRD carries out surveillance and control programs to put a lid on their spread to new areas. However, they first need to find them. Eager nature lovers are far more likely to spot a pest bird hiding amongst the leaves.

Keep a look out for:

- **[Sulphur crested cockatoos](#)** north of Perth (Muccea/Bullsbrook) and south of Perth (Pinjarra, Meelon, Lake Mealup, Bouvard/Dawesville, Dunsborough and Witchcliffe). Do not report corellas as they are established and not possible to control.
- **[Indian ring-necked parakeets](#)** in the Perth metropolitan area and south of Perth (Brunswick).
- **[Rainbow lorikeets](#)** outside but in close proximity to Perth (Gingin, Bindoon, Toodyay, Northam, York, Narrogin, Pinjarra, Bunbury). **Do not report rainbow lorikeets found in the Perth metropolitan area**, because they are established in this area and not possible to control.



Every year European wasp queens are accidentally transported into our State in freight, cargo and vehicles from Eastern Australia. They are attracted to protein baits, in this case a cube of fish. Photo – Catherine Webb.



*Left: Pokeweed (*Phytolacca americana*) was first discovered as a weed in WA in 2018. It is targeted for eradication because of its limited establishment in the state. Right: Surveillance activities for polyphagous shot hole borer are continuing throughout WA to determine its distribution. Photos – DPIRD.*

Contact

Pests and Disease Information Service

phone 9368 3080

email padis@dpird.wa.gov.au

app [MyPestGuide® Reporter](#)

Saving Our Snake-Necked Turtle. Citizen science in action!

By Catherine Baudains

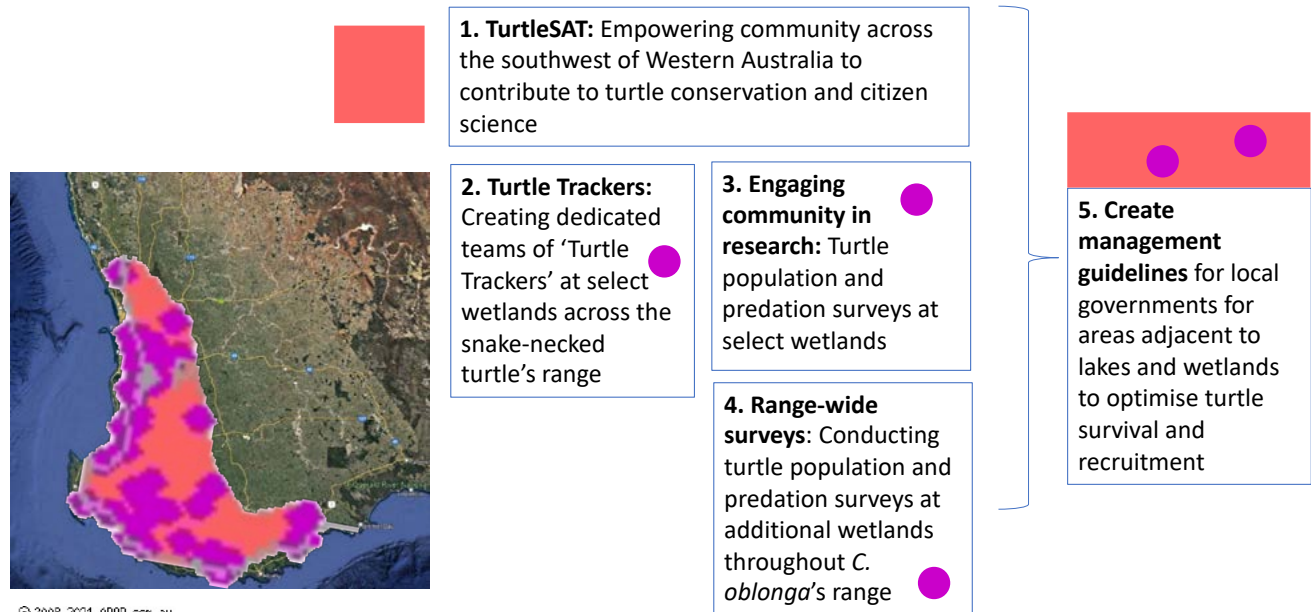
The Saving Our Snake-Necked Turtle (SOSNT) project is helping to protect our common freshwater turtle from further population decline with hundreds of people across Perth and the South West volunteering to help track and map turtle activity. The project comprises five elements that contribute to the protection and recovery of the southwestern snake-necked turtle, summarized in the figure right.

Throughout August and September, 22 information and Turtle Tracker community training sessions were held at participating councils between Joondalup and Bunbury. More than 500 community members attended the sessions presented by Murdoch University [turtle ecologist Anthony Santoro](#). The participants learnt about the biology of the south western snake-necked turtle (*Chelodina oblonga*) and threats to its survival.

Following the information sessions, over 100 community members volunteered to complete further training to become Turtle Trackers. As Turtle Trackers they have been patrolling 19 wetlands since the middle of September utilising their new skills to monitor and protect female turtles and their nests.

Since nesting began in late September more than 550 turtles have been observed, and 280 nests protected. With citizen scientists recording observations in [TurtleSAT](#), we are gaining invaluable insight into where this species is present and preferred nesting locations.

With the end of this year's nesting season rapidly approaching, the SOSNT project will soon compile our volunteers' data to share the results with our partners



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The five elements of the Saving our Snake-necked Turtle Program incorporates citizen science programs across the turtle's range (orange shading) and at specific wetlands where turtles are found (purple dots). Image – SOSNT.



Anthony Santoro teaching a group about Turtle Tracking. Photo – City of Cockburn.

and the community. The data will provide crucial insights into the way this species uses the land around our wetlands, informing much needed management strategies to facilitate the future survival of this species.

This project is only possible thanks to the funding from [LotteryWest](#) and key local government partners, alongside critical support from the South West Corridor Development Foundation Inc / [South West Metropolitan Alliance](#), [Murdoch University](#) / Harry Butler Institute, [Conservation Volunteers Australia](#), [NatureLink Perth](#), [City of Cockburn](#), [Department of Biodiversity, Conservation, and Attractions](#), and [WA Wildlife](#).

Have you seen a Turtle Tracker or a snake-necked turtle? Use [#SOSNT](#) or tag us so we can share what you have spotted throughout this nesting season. [#SOSNT](#), [#citizenscience](#), [#savingoursnake-neckedturtle](#), [#snake-neckedturtles](#).



The south western snake-necked turtle (Chelodina oblonga) is a turtle known by many names. It is also known as the oblong turtle or the long-necked tortoise and has had previous scientific names Chelodina collei and Macrodiremys oblonga. Photo – Anthony Santoro.



Turtle Trackers observing a turtle crossing the road. Photo – Anthony Santoro.

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Instagram www.instagram.com/saving_our_snake-neckedturtles

Please send us your regional report (400 words) and one or two photos by Wednesday 8 February 2023. Text may be edited in response to volume of submitted reports.

Yarkiny making Moore River their new home *By Claire Brooks*

The western swamp tortoise *Pseudemydura umbrina* (yarkiny in the Noongar language) is classified as Critically Endangered under Commonwealth and State legislation. Less than 30 years ago, the species was considered close to extinction, declining from more than 250 mature adults in the 1960's to just 15-25 mature individuals in the late 1980's in only two natural populations.

[Assisted colonisation](#) is the intentional translocation of a species [outside their indigenous range](#) to mitigate a threat, and this has been explored as an option for the swamp tortoise for almost three decades to combat threats from limited populations, habitat loss, and predation. In 2007, Moore River became the third translocation site for the species after releases in Twin Swamps and Lake Wannamal nature reserves. Ten young captive-bred individuals from the Perth Zoo, between 2–4 years old and carrying radio-transmitters were released, with a further 17 released in 2008, 30 in 2009, 11 in 2016, 24 in 2017, 78 in 2018, and 73 individuals in 2019. The wetlands at Moore River Nature Reserve have excellent water quality and undergo periodic feral animal control to mitigate predation and habitat destruction. In 2020, Tronox signed a three-year commitment to the [Western Shield program](#) to assist wildlife recovery efforts and feral animal control at Moore River.

The most recent translocation at Moore River in September 2022 saw 147 [zoo-bred](#) individuals released, the largest for the program since 1989. The young tortoises which included 2–4 month old hatchlings, 1–3 year old juveniles and a single four year old, underwent full veterinary checks at the Perth Zoo prior to release. The release was assisted by over 70 participants, including volunteers from the Friends of the Western Swamp Tortoise, local community, Perth Zoo, DBCA, and neighbours, the Roe family. Monitoring of the site over the past few years has found that the released tortoises are not only surviving and putting on body weight, but some of the young tortoises are now growing to maturity and producing hatchlings of their own.

The Moore River translocation site forms an integral part of the [recovery actions](#) for the western swamp tortoise to safeguard the species against the threat of climate change, predation, and habitat loss. The success of the release would not be possible without DBCA, the land managers of Moore River Nature Reserve, who not only maintain the integrity of the site, but facilitate land access through the Roe family property and support the volunteers on the day.

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The yarkiny released at Moore River Nature Reserve have all been bred in captivity at [Perth Zoo](#). Photo– Claire Brooks.



The wetlands at Moore River Nature Reserve have excellent water quality and undergo periodic feral animal control to mitigate predation and habitat destruction. Monitoring shows promising signs that translocated western swamp tortoise are settling in – they are putting on weight & some have produced hatchlings. Photo – Claire Brooks.

Underwood Avenue Bushland By Margaret Owen

Drive or cycle west up Underwood Avenue, Shenton Park, and on your left you'll see the very dense stands of *Banksia prionotes*. This species of banksia provides nectar and seed for the flock of Carnaby's cockatoos during their stay in the area in the [non-breeding season](#), from late summer to early winter.

This and other species of banksia are also a major element that makes the Carnaby's roost site at the corner of the bush, so attractive to cockatoos. There's water nearby, tall roosting trees, and naturally growing and nutritious food. On cold winter mornings Carnaby's cockatoos perch in the bush to warm up before continuing on for the day.

Like so many bushland sites, conflicts arise when commercial developments are proposed that would damage the bush. The community rises to support retention of the bush and in the case of Underwood, the bushland has had community support for over twenty years. There are so many wonderful things in the bush, to wander there is awesome. Not only that but it is a [Bush Forever site](#) and a major bushland link between the river and the ocean.

Conflicts between developers and bush lovers often continue over many years and this has been the case with Underwood Bushland as the University of Western Australia (UWA)

has been seeking approval for a housing development in the bushland since 1998.

In May 2022, [the Friends of Underwood Bushland](#) was invited to meet university executives and at that meeting received news of a change of plan by the university. The bushland was to be protected and managed. Internal to the university, creative ideas were being sought for use of the bushland. The Friends long asked for hand-weeding was agreed to.

Congratulations are extended to the university for this massive change of plan. The appointment of a new Vice-Chancellor, Professor Amit Chakma, in July 2020, and new people on the UWA Senate probably allowed this change.

We are hopeful that the university will act in good faith and in accordance with community wishes and protect the whole site with no compromise. This would be consistent with the position we have campaigned for over the past twenty four years.

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A Carnaby's cockatoo enjoying an acorn banksia (B. prionotes) at Underwood Avenue Bushland. You can tell this bird is male because the bare skin around the eye is pink. Underwood Avenue provides all the elements that critically endangered Carnaby's cockatoo need during their visits to feed in late summer through to early winter. There's water nearby, tall roosting trees, and naturally growing and nutritious food. Photo – Margaret Owen.

Enviros share Cockburn's natural assets with seniors *By Michele Nugent*

Flowering native plants are a striking feature of more than 80 [conservation reserves](#) maintained by the City of Cockburn, particularly during the Noongar seasons of Djilba and Kambarang between August and November each year.

The City's Environmental Services team recently shared Cockburn's abundant wildflower wonders with local members of the Cockburn Seniors Centre, some of whom were discovering hidden gems for the first time.

About 20 seniors joined the guided tour of Baler Reserve in Hammond Park and Banksia Eucalypt Woodland Reserve in Aubin Grove, [Bush Forever site 492](#) within Jandakot Regional Park.

Sustainability Officer Lisa Brideson said the tour, which included a bingo quiz, was a fun way to connect local seniors with their community and help them learn more about the City's bushland and conservation areas.

"The event was really well received by the seniors centre members who are genuinely interested in their local environment and keen to build on the knowledge they already have," Ms Brideson said. "A few of the attendees said they'd learned a great deal about their local bushland, including species diversity and the local beauty of areas they never knew existed. This is really great feedback and we hope to hold more of these tours next spring, encouraging our residents to appreciate what's in their backyard and see the work that goes into looking after it firsthand."

Bushland Maintenance Leading Hand Daniel Millea said the Bush Management Team maintained the 89 [nature](#)



City of Cockburn's Environment Services Team led a guided walk for members of the Cockburn Seniors Centre for the first time this year. It was a great way to connect the community to Country and showcase the value of managing bushlands. Following on from this success, the tours will continue next spring.

[reserves in the City](#) throughout the year. "We get to know those great spots for seeing some really special habitats and their flora and fauna. It's great to be able to share this with others in the community who have a passion for our natural areas."

Bushland Maintenance Officer Michael Davies said the tour was a great way to connect the community to Country. "We definitely will do more of these tours,

showcasing our valued bushland areas, that we work so hard to manage, is an important part of our role in protecting the environment," he said.

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Art and wildflowers in Kwinana *By Angela Jakob*

Wildflower Reserve, part of [BushForever site 272](#) in the City of Kwinana, is awash with the vibrant colours of wildflowers in spring and is a draw card for wildflower enthusiasts both locally and throughout metropolitan Perth. In more recent years, it has seen the development of a synergy between art and nature, with the City supporting artists to re-interpret the environment and draw more interest from the community, and most importantly to encourage artistic inspiration from nature.

Over the years, numerous artists, mostly local, have contributed their talents to this program. It has seen woven sculptures by Scott Daly nestled amongst the tree boughs or drawing the eye to larger than life cocoon forms hanging dramatically from previously live jarrah trees. Vanessa Liebenberg working in situ on acrylic wildflowers and painted birds, Janine Mcaullay's woven fun and childlike inspired sculptures, appearing like the flies and lizards seeming at home in their new natural environments. More recently, workshops have been conducted on site with the community learning weaving with Aunty Leah Taylor and painting message sticks with Nolene Mantellato.

Over the last four years, the City has been inspired by local Kwinana artist Jane Li, who worked originally in traditional Chinese watercolour painting, but has adapted this to our native wildflowers with beautiful effect. She has been instrumental in promoting our [Biodiversity Month](#) activities over the last three years with her exquisitely created native plant series

commissioned by the City for promotional material and most importantly the [self-guided wildflower walk](#) at Wildflower Reserve. The self-guided signage with associated audio provided by the guides from the [Murdoch Branch of the Wildflower Society](#), is accessed readily by downloading a QR code printed on the first sign. Commencing at the beginning of COVID, using QR codes became second nature to most, and local natural areas took on another level of importance during this time, with residents able to access and enjoy the wildflowers at any time during the wildflower season. Jane has also been an active volunteer, regularly attending Wildflower Weeding Warriors weeding mornings at Wildflower Reserve to remove invasive weeds.



Take yourself on a self-guided walk at Wildflower Reserve in Orelia that includes both signage and audio to download to your smart phone. The walk begins at the entrance on Thomas Road, 200m east of Sandringham Park, Nottingham Parkway, on the dual use path. The best place to park is at parking bays either side of Sandringham Park, Nottingham Parkway, Orelia. Photo – City of Kwinana.



If you happen to visit Wildflower Reserve in Orelia during Biodiversity Month, otherwise known as September, keep an eye out for delightful and talented artistic re-interpretations of the local bush, you might have to look up as well as down at the flowers. Photos – City of Kwinana.

For those who have missed out on seeing the wildflowers this season, be sure to keep it in mind for 2023 or [take a stroll](#) to discover some of the wonders occurring right throughout the year. If art is your thing, you can always expect something surprising at Wildflower Reserve during wildflower season.

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Local Kwinana artist Jane Li's beautiful paintings form the artwork used in the self-guided walk at Wildflower Reserve. Jane is really familiar with this patch of bush, not only has she been commissioned by the City of Kwinana to create original artworks on its natural beauty, she regularly attends weeding mornings as a Wildflower Weeding Warrior volunteer. Photo – City of Kwinana.

Margaret River community connect with nature and culture

The rain and wind couldn't dampen spirits at the Wooditjup Bilya Community Connections festival hosted by Nature Conservation Margaret River Region at Rotary Park on 30 October 2022.

So many locals and visitors came to connect with the natural and cultural values of Wooditjup Bilya (Margaret River), taking in info stalls, entertainment, community art, face painting for kids, guided wildflower and birdwatching walks, workshops, a touching welcome to country ceremony, interactive art, local food and drink, and live music from Tilly Kay and Sam Liddon, Tanya Ransom and the Nomadics' Bec Schofield.

Nature Conservation officer and festival organiser Mandy Edwards said "I had a ball, and it looks like everyone else did too. The vibe amongst the crowd was awesome and I so admire the tenaciousness of the community in coming out in the squalls to attend the event. I feel super grateful to work with an awesome team, and it is heartening to experience how well regarded Nature Conservation Margaret River Region is amongst locals. Thanks so much to everyone who came and to all the hardworking folks who helped out to make this great event possible!"



Nature Conservation Margaret River Region festival organiser Mandy Edwards (left) and staff member Jodie Passmore at the conservation group's Wooditjup Bilya (Margaret River) Community Connections festival. Photo – Trevor Paddenburg.

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Sharing knowledge on feral pig control

By Gary Edwards and Julia Cullity

Expert guests from across Australia joined staff from DBCA and Department of Primary Industry and Regional Development (DPIRD), Landcare and biosecurity groups at a three day staff workshop and community open day to discuss improved methods of feral pig control. The forum, held in Chittering this November, included a mix of field and classroom components and included sessions detailing new techniques and tools for control, pig behaviour around control techniques, reproduction rates, home range and habitual nature. This led to discussions about changing current practices, what we can influence and how can we make new techniques work for us!

Disease vectors

Ian Moore from DBCA provided an insightful session on the major role pigs have in contributing to the spread of [Phytophthora dieback](#) (*Phytophthora cinnamomi*). Pigs



Pig Brig is a light-weight one-way, mesh trap with no gate and continuous entry. Photo – DBCA.



PigBaitta out on location at Moondyne, adjacent to the Avon River. The hopper itself limits access to non-target species as it requires pigs to lift a lid on the hopper with their snout to gain access to the grain. Photo – DBCA.

can accelerate the rate of spread by potentially many hundreds of years compared to 'natural' upslope rate of spread via root to root contact. Pigs spread dieback after wallowing in mud and the constant upslope spread via pigs from creeks further limits the reliability of dieback mapping as a tool for managing planned soil disturbance activities. Due to pigs, unmappable infant infestations are more likely to be present, resulting in the planned soil disturbance operations that follow dieback mapping, spreading these infant infestations into other areas.

Abbey Potter from the Department of Health made a request for any opportunities for staff to provide feral pig samples to assist with monitoring and surveillance of [Japanese encephalitis](#) and provided test kits and demonstrated methods.

Pig behaviour

Peter Adams DPIRD presented the results from monitoring programs over the years in terms of population structure and distribution and movement through the landscape, significantly that pigs often returned to sites previously visited – leading to a discussion of where to focus control efforts and target pigs where they are most susceptible.

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Darren Marshall, from NRM group Southern Queensland Landscapes provided via video link a presentation largely around 'dispelling the myths' of pigs backed up with the [use of collars](#) to provide evidence of pig home ranges and movement throughout the year.

Daniel Lewer from Hunter Land Management in NSW, and the [National Feral Pig Action Plan](#) Implementation Officer discussed pig behaviour at traps sites and what may spook or deter pigs from interacting with grain or traps.

Pig Baitta

Barry Kelly is a pig specialist who designed and engineered [Pig Baitta](#) a feral pig specific bait delivery device. DBCA has purchased three units from the South Australian company to trial for the first time in WA and engaged Barry for a four week period in the lead up to the workshop to assist DBCA staff in their operation.

The hopper limits access to non-target species as it requires pigs to lift a lid on the hopper with their snout to gain access to the grain. It can also limit access to valuable 'free-feed' grain, to entice pigs to become 'dependant' on the hopper for food and thus help to modify pig behaviour to assist with control. Once the pigs have worked out how to get a meal from the hopper, at a suitable time the grain is mixed with the toxin 1080 or, if appropriate, Hoggone for lethal control.

Barry provided valuable insights to staff on how to improve methods and encouraged them to consider different and more efficient options. The days of box cage traps and targeting one or two pigs at a time are long gone! Patience was the name of the game, with plenty of time spent on 'free feed'. On the field trip, Barry went through the signs of pig activity, what to look out for and consider for site selection.



Bait boxes used to dispense Hoggone bait in-situ at a private property in Moore River. This set up was successful in removing 14 pigs. Photo – DBCA.

Hoggone

[Hoggone](#) is manufactured bait that is fast acting and highly toxic to pigs using sodium nitrite as its active ingredient. It must be deployed in a bait box.

Daniel Lewer has had plenty of experience with the use of Hoggone and led the second field day. Daniel was able to add some tips to his site set-up and selection when considering Hoggone as a suitable tool. This site on private property at Moore River was successful in removing 14 pigs in four weeks.

Having two different operators from two different parts of the country enhanced the discussion around the uses and risks associated with the use of Hoggone.

Pig Brig

Under Daniel's guidance, DBCA staff set up another tool, the [Pig Brig](#) trap. This is a light-weight one-way, mesh trap with no gate and continuous entry. Currently, staff in the Midwest have a trap deployed. There were plenty of questions raised by staff on the traps' application and suitability in varying settings.

DBCA's Paul Dyre ran through a procedure on the humane use of firearms with the Pig Brig as it is a net trap system and different to cage/box traps. We also took the opportunity that evening to view thermal scopes for use on firearms. Thermal scopes are an increasingly valuable tool notably used by contractors for feral pig and cat control.

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Matlock trap

Andy Lockey provided a demo of his trap system the [Matlock trap with an integrated 4G camera system](#). The Matlock 2.0 is an Australian made streaming camera trap trigger. When movement inside the trap is detected, the system will call you allowing you to view live how many targets are in your trap. The trap can be triggered remotely by any mobile phone network via an app. Two wireless trigger receivers are connected via a cable to the trap release. You can also trigger the bait feeder with the app, to assist in encouraging stragglers into the trap.

Where to from here?

Is the enormity of the task larger than our capabilities? Due to high rates of reproduction in pigs and early commencement of sexual maturity (from 4 months) pig numbers are quick to get out of hand. A 70–80% knockdown is required to see a downward trend in population.

To have any chance of success, land managers can't operate alone. There needs to be a continued focus on interagency and community joint management, harnessing multiple tools without being reliant on one. We need to combine techniques like aerial shooting with trapping and baiting. There are also opportunities for sharing resources i.e. Hog Hoppers, Pig Brig traps, Pig Baitta, Matlock traps, Hoggone, and 1080 grain mixing barrels and hoppers. This will expand the ability of the pig control community to explore 'new' tools, share results and increase the reward versus effort.

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WA Feral Cat Symposium 2

First held in 2018, the [inaugural WA Feral Cat Symposium](#) brought together nearly 200 people from across Australia to tackle the complex issue of protecting WA's native animals through effective, humane feral cat control.

Following the success of this event, the WA Feral Cat Working Group is holding a [second symposium 13–16 February 2023](#) at UWA Club Hackett Drive, Crawley with a field trip to Dryandra Woodland National Park. It will bring together conservation managers, Traditional



Feral cats are hard to trap and don't easily take baits. At [WA Feral Cat Symposium 2](#) leading practitioners will increase participants' knowledge of management options for feral cats, celebrate successes so that more stakeholders can be empowered to take action, and share the latest research of what is successful and upcoming techniques for feral cat control. Photo – Rosie Hohnen.

Owners, researchers, landholders, industry and all levels of government to learn about and share knowledge on frameworks, legislative context, biodiversity impacts and control options for the management of feral cats in the state.

Hear talks from some of the nation's leading researchers, conservation groups and government on the innovative future of feral cat control and local successes in tackling a major cause of decline for many of Australia's endangered species.

Guest speakers for 2023

- A/Prof Guy Ballard – Managing predator impacts for a resilient landscape
- Prof Sarah Legge – NESP Threatened Species Recovery Hub
- Dr Dave Algar – 30 years of feral cat management in WA
- Dr John Read – New technology in the toolbox of feral cat management
- Prof Paul Thomas – Gene technology & its potential for pest control
- Dr Katherine Moseby – Improving the outlook for Australia's native species
- Adin Lang – The journey of a WA local council in changing cat ownership laws
- Prof Trish Fleming – Artificial Intelligence and automation for cat monitoring with additional talks, speed talks and posters.

Ticket price is yet to be announced. [Register your interest](#) to receive updates.

Activate Tree Planting is a landcare organisation with a difference *By Mike Cormack*

Activate is a volunteer-led group that holds annual tree-planting festivals to restore the environment. Its vision is to empower and inspire new and younger eco-warriors and change-makers through ecologically impactful events with a focus on community, music, art, fun and enjoyment.

Through connection, collaboration and hands-on tree planting, participants reconnect with nature and restore the environment while making new friends and enjoying a weekend packed with live music and DJs, interactive workshops, Indigenous cultural experiences, nourishing communal meals and camping under the star-filled Wheatbelt skies.

Millionth tree will be planted in 2023

Activate's history stretches back more than 22 years; a small group of young enviro-champions came together at [Perth City Farm](#) with a vision to spend a day making a positive environmental impact while also squeezing in as much fun and dancing as possible.

While their vision has not changed much over those two decades, the reach and impact of [Activate Tree Planting](#) certainly has. The scale of their tree planting festivals has almost doubled every year for the last four years, in terms of both the number of seedlings planted, and volunteers engaged in the planting events.

During the 2023 tree planting season, the organisation will celebrate planting its one-millionth seedling on the back of its biggest planting season to date, with almost 250,000 seedlings being hand-planted over their three 2022 festivals.

Nomans Lake

The Activate team revisited this site after a bushfire devastated the area earlier in the year. About 200 volunteers planted 56,000 seedlings over the long weekend on a private farm to help create unbroken bushland corridors. These corridors provide a safe route for native fauna to travel from one natural area to another.

Nembudding

Over 250 volunteers planted 126,000 seedlings at Activate's biggest and most biodiverse planting event with over 50 different species of native seedlings being planted, including many species important to the local indigenous cultures. The site has a small patch of remnant bushland on it, with a rare trapdoor spider discovered there in 2011.

Wandering

For the first time, to encourage the growing number of younger participants eager for more involvement, Activate mentored a new youth crew, self-proclaimed



Younger participants love getting their hands dirty while learning about the natural environment. [Photo – Amber Bateup.](#)



Although there is often much to be done, the focus is always on fun. [Photo – Amber Bateup.](#)

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The Saplings. All under 30, The Saplings crew managed and ran all aspects of the event themselves. About 80 youth volunteers planted 50,000 seedlings on an animal sanctuary. The success of this event was so inspiring, Activate plans to hold more youth-run events each year.

Get involved

Activate's unique weekend-long event style have proven so popular with the community, they sell out almost as soon as they are announced, with long waitlists forming for each event.

While events continue to grow, the team are also intentional in how they protect and grow the aspects that make their events so special. We are always blown away by the strong sense of community that is present at each of our events, it's quite moving. What we manage to achieve at each of our events still amazes us. And it only happens because of the incredible spirit and contribution from our community of volunteers.

The Activate team aim for every volunteer to feel their individual presence and contribution is valued and important. To see so many kids really getting into it is a big deal. They leave the event with a new understanding and appreciation for nature and, hopefully, a feeling that they can make a difference too.

Activate also hosts non-enviro events between plantings such as live concerts, art exhibitions, movie screenings, bake sales and casual catchups to help their community grow and stay connected.

If you are excited to help Activate's mission, you can [register to volunteer](#) or make a once-off or ongoing [donation](#).

Contact

Activate

Facebook www.facebook.com/ActivateTreePlanting

Community Facebook group www.facebook.com/groups/activatetreeplanting

Instagram www.instagram.com/activatetreeplanting



Art and expression are celebrated and encouraged at Activate's events. [Bertie Louise](#) stands alongside the artwork she created live in the planting field. Photo – Amber Bateup.



Taking the time to dive into the details helps volunteers gain a deeper understanding of the seedling species, the planting site conditions and project goals and empowers them to make their own educated decisions over the weekend. Photo – Amber Bateup.



Tree planting volunteers down tools for a moment of energetic dance and celebration. The field DJs can really lift the mood. Photo – Amber Bateup.

The Foundation for National Parks and Wildlife

Community Conservation Grants offer funding of up to \$10,000 to assist in the protection of our native species, habitats, landscapes and cultural heritage. Grants are available for both field projects and education programs. [Applications open 6 December](#).

Seedling Bank supplying native seedlings to schools and community groups around Australia. [Applications open 28 November](#).

Wheatbelt NRM's **Where the Wild Things Are** grants provide funding of up to \$15,000 to support protection of the eucalypt woodlands of the Western Australian Wheatbelt. [Applications close 31 December](#).

Peel Harvey Catchment Council's **Fencing and Revegetation of Foreshore Areas** [funds](#) landholders in the [Healthy Estuaries WA footprint](#) to fence streamlines on their properties to exclude stock with revegetation. **Open grant round**.

NACC Growing Great Ground incentives up to \$1,000/ha for establishment of ground cover and biodiverse native vegetation in the Northern Agricultural Region to address wind erosion on agricultural land. [Expressions of interest open year round](#).

NACC Biodiversity Community Grants up to \$5,000 for projects that conserve malleefowl and black-flanked rock-wallaby in the Northern Agricultural Region. [Applications](#) assessed on a **first in first served basis from 1 July**. Contact [Jarna Kendle](#) on 0477 177 164.

FAME funding on-ground conservation projects for Australian's most rare and endangered flora and fauna. [Applications open February 2023](#).

National Science Week \$2,000–20,000 to hold science engagement activities in National Science Week (12–20 August 2023). [Applications](#) close 15 December.

Synergy Community Partnerships up to \$50,000 for multi-year partnerships around four key themes: environment for the future, inclusivity and empowerment, committed to community, and energy leadership in the south west of WA. [Expressions of interest open year round](#).

Wettenhall Environmental Trust small environmental grants scheme funds research and education projects on fauna and flora conservation. [Applications open 1 December](#).

National Taxonomy Research Grant Program 2023–24 commits more than \$2 million in seven research streams to improve knowledge of Australian biota, enhance co-funding opportunities and build taxonomic capacity by supporting tertiary research training and early career researchers. [Applications close 18 January 2023](#).

Purves Environmental Fund up to \$50,000 for projects addressing the focus areas of habitat destruction, capacity building of key NGOs and climate change adaption. [Applications open year round](#).

Mary Bremner Bequest Strategic Grants Program of the Wildflower Society of WA for projects focused on WA flora. [Applications open year round](#).

The Cola-Cola Foundation gives back 1% of its operating income to enhance the sustainability of local communities worldwide. Empowering women, enhancing communities, protecting the environment and educating scholars are priority areas. [Applications open year round](#).

IGA Community Chest raises funds to support local communities, charities and other worthwhile causes. [Applications open year round](#).

Connecting to Country up to \$25,000 for Aboriginal people and organisations to undertake on Country activities with intergenerational transfer of knowledge, culture and strengthening communities. [Applications close 8 December 2023](#).

The Indigenous Land and Sea Corporation's Our Country Our Future [program](#) funds land acquisition or management projects that deliver benefits to Indigenous Australians. This includes on-ground activities to maintain or improve the condition of Country (land, water, biodiversity, and cultural heritage). **Open on an ongoing basis**.

Lotterywest Grassroots Community-Led Grants are available for proposals big or small that work towards sustainable ecosystems including restoration, care for natural heritage, protection of endangered species, and reduction of the community's impact on the environment. [Applications open year round](#).

Local government and place-based community grants These local governments provide small grants to their communities which fund environmental groups' management and restoration projects. Eligibility varies. [Armadale Habitat Links open year round](#) for rural residents, [Belmont opens 15 February](#), [Broome open year round](#), [Busselton closes 1 February](#), [Cambridge opens February](#), [Canning open until budget is expended](#), [Derby/West Kimberley closes 31 December](#), [Geraldton closes 22 February](#), [Gosnells open year round](#), [Harvey Water open year round](#), [Melville open February](#), [Serpentine Jarrahdale open in February](#), [South Perth open year round](#), [Wanneroo open year round](#), [Waroon closes 15 February](#).

New publications

Bilya Maadjit Murray River Action Plan 2022 informs and prioritises on-ground actions for the largest river in the Peel-Harvey Catchment. [The plan](#) includes detailed assessments of the vegetation, geomorphology, aquatic habitat and water quality as a basis to plan rehabilitation works.

Biodiversity Knowledge Priorities: Emerging themes from stakeholder consultation is a new Western Australian Biodiversity Science Institute [report](#) which identifies the top priorities for biodiversity science for the next decade.

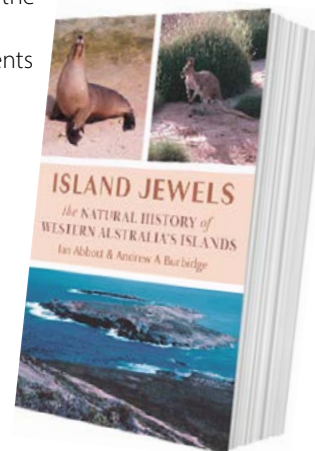
Draft National Strategy for Volunteering prepared by Volunteering Australia in a co-designed process with the volunteering community and informed by the Volunteering in Australia research and Volunteering Research Papers. The last national strategy was published in 2011 with a new National Strategy for Volunteering will be launched in February 2023 creating a roadmap for volunteering across Australia for the next 10 years. The [draft](#) brings a preview of the strategy to come.

Kep Katitjin – Gabi Kaadadjan – Waterwise Perth Action Plan 2: Growing waterwise communities in Boorloo (Perth) and Bindjareb (Peel) to address climate change. This [two-year plan](#) further supports the State Government's ongoing commitment to tackling the impacts of climate change on our precious water resources, through water-saving initiatives and the creation of climate-resilient, liveable urban spaces. The 41 actions in this plan will be delivered by 11 agencies to help us to conserve our water resources and, at the same time, support urban greening, biodiversity, the tree canopy and urban cooling to create climate-resilient communities.



Island Jewels: The natural history of Western Australia's islands Abbott, Ian and Burbidge, Andrew A. *Leschenault Press*, 2022. Australia has over 3,500 islands, the largest number of any Australian state or territory. All remain in public ownership. Almost all south of the Kimberley are managed by a single government agency, whilst almost all Kimberley islands are native title, a situation unique in the world. This book, written by two

experienced wildlife scientists, documents the islands' plants and animals, and discusses the islands' history, impacts of invasive species, and management actions. It is arranged geographically, taking the reader on a journey from the Kimberley south along the west coast to Cape Leeuwin, and then east to the Archipelago of the Recherche. Throughout, you will be introduced to the Island Jewels of Western Australia in all their magnificence. Available [online](#)



Living Planet Report 2022 building a nature-positive society every two years WWF published a review of the state of the global environment. This [report](#) highlights the interconnectedness of biodiversity loss and climate

change, documents the speed and scale of change and outlines a path forward to build a nature-positive society. The Living Planet Index records trends in abundance of mammals, birds, fish, reptiles and amphibians and shows an average 69% decrease in monitored wildlife populations over the last 50 years. The report calls for transformational change to reverse this.



Plants of Rottnest Island *WA Naturally*, 2021. \$6.95. Discover more about the remarkable plants that inhabit Rottnest Island with a copy of *Plants of Rottnest Island* in your back pocket. You will learn how to identify different species and uncover fascinating facts. This [BushBook](#) presents 37 the islands most noticeable plants, many of which would be encountered during a day's visit. All but three are native species.



The **Threatened Species**

Action Plan 2022-2032 maps a pathway to protect, manage and restore Australia's threatened species and important natural places. [The plan](#) works to deliver four main objectives in a ten year period

- The risk of extinction is reduced for all priority species
- The condition is improved for all priority places
- New extinctions of plants and animals are prevented
- At least 30 per cent of Australia's land mass is protected and conserved.

Apps

BioCollect app allows you to collect ecological field data. It provides form-based data collection for ad-hoc or systematic structured surveys and natural resource management projects such as revegetation, seed collection, weed and pest management. Available free from the [App Store](#) or [Google Play](#).



Perup/Boyup Brook Flora Fauna app helps you identify flora and fauna found at Perup: Nature's Guesthouse and in the Shire of Boyup Brook. The app currently contains photos and information for 174 flora and 48 fauna species. Available for free from the [App Store](#) or [Google Play](#).

Recent Research

[Global Ecology and Biogeography](#) 2022 Special Issue: Increasing threat of wildfires: the year 2020 in perspective 31 (10), 1895–2157

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Bamford M and Calver M (2012) Cat Predation and Suburban Lizards: A 22 Year Study at a Suburban Australian Property [The Open Conservation Biology Journal](#) 6, 25–29.

Bouma A, Kuchling G, Zhai SY, Mitchell N (2020) Assisted colonisation trials for the western swamp turtle show that juveniles can grow in cooler and wetter climates [Endangered Species Research](#) 43, 75–88.

Dunlop JN, Greenwell CN (2022) A long term view: distribution of small terns (*Sterna*) in Western Australia and implications for their conservation [Pacific Conservation Biology](#), online early.

Elliott CP, Commander LE, Williams MR, Golos PJ (2021) Seed movement in small-scale vegetation restoration [Ecological Management and Restoration](#) 22, 274–279.

Soanes K, Threlfall CG, Ramalho CE, Bekessy S, Fuller RA, Garrard GE, Ikin K, Kendal D, Lee KE, Mumaw L, Rowe R, Shanahan DF, Valentine LE, Williams NSG, Parris KM, Lentini PE (2020) Conservation opportunities for threatened species in urban environments [Clean Air and Urban Landscapes Hub and Threatened Species Recovery Hub](#).

Zander KK, Burton M, Pandit R, Gunawardena A, Pannell D, Garnett ST (2022) How public values for threatened species are affected by conservation strategies [Journal of Environmental Management](#) 319, 115659

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Website watch

Threatened Species Bake Off 2022 check out the [weird and wonderful entries](#) on the Threatened Species Commissioner's [Facebook page](#)



Rockpool is a [resource hub](#) for Western Australia's coastal and marine community by the WA Coastal and Marine Community Network.

18th Annual Wetland Conference 2022 [Proceedings](#) now available online. Just in time to get you inspired to attend the 19th annual conference on 1–3 February 2023 [Cultural Wisdom, Scientific Innovation and Arts for our Wetlands](#).

Am I not pretty enough? The Conversation's [series of opinion pieces](#) that introduce you to Australia's unloved animals that need our help.

Black Cockatoo Crisis looks at the plight of our special cockatoos and what we can do to stop these threatened species from disappearing forever. The three species of black cockatoo in Western Australia's southwest are under threat. Habitat loss through land clearing is a major cause of the threat. There are less than 40,000 Carnaby's Cockatoo left, just 10,000 Baudins and around 10,000 red tailed forest black cockatoos. But time is running out. View this [crowd funded documentary](#) by Jane Hammond at Luna Leederville until 7 December. It will then be rolled out to schools and screened in town hall meetings and via cinema on demand and streaming services.

Nature Passports by Nature Play help support families in getting outside and active in your community. [Passports](#) are available for both regional and metro areas containing activities to connect kids with nature.

Plant Trees Australia is a [platform](#) that empowers community tree planting groups across Australia to connect with helpers and funders to regenerate landscapes and take practical climate action. Community Groups can attract and manage volunteers, access funding, organise events, and maintain planting records. They can store information, including site locations, plant species and budgets. Volunteer helpers can find local planting groups whilst connecting with their local community and the environment.

Reimagining Perth's Lost Wetlands [a visual tour](#) through the past, present and future of Perth's wetlands by Tracy de Vetter for NatureLink Perth.

Asparagopsis

By John Huisman

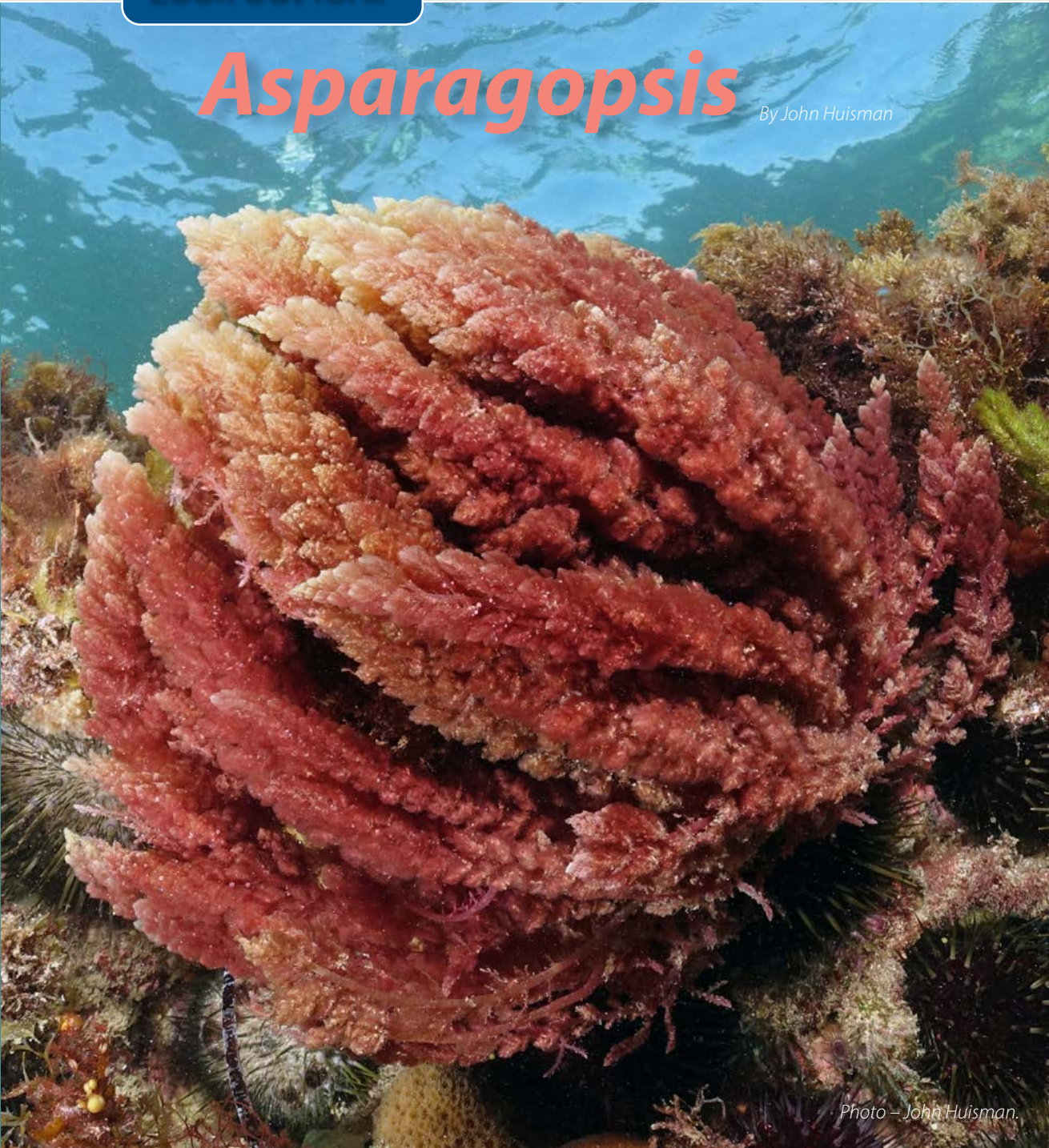


Photo – John Huisman.

Asparagopsis is one of the more unusual seaweeds. Looking very much like a mass of light pink fluffy foxtails, it grows prolifically on rock (in the case of *Asparagopsis taxiformis*) or attached to other seaweeds (*Asparagopsis armata*). The genus is currently of great interest as it has been discovered that adding even a small amount of *Asparagopsis* to ruminant stock feed drastically reduces their methane output, a major greenhouse gas. Researchers are now looking at the best way to farm this seaweed, as wild harvesting the required quantities would not be sustainable. *Asparagopsis taxiformis* is also the 'limu kohu' (the 'supreme seaweed') in the Hawaiian Islands, which as the name suggests is the most favoured limu of most Hawaiians. The popularity has meant that its collection in Hawaii is regulated, and it is illegal to collect the creeping base, which allows the plants to regenerate. In ancient times limu kohu was so esteemed that it was forbidden to all but the ali'i (nobility) and was cultivated in limu gardens. After collecting, the plants are cleaned, soaked overnight to reduce the bitter iodine flavour, drained, lightly salted and rolled into balls about the size of a walnut. It is added to stews and only a small portion is used as the peppery flavour is intense.

Asparagopsis taxiformis is widespread along the WA coast, from the tropics south to at least the Capes region, generally growing in shallow water. It is often seasonal in colder waters, overwintering as the inconspicuous alternate stage of the life cycle, with the conspicuous plants appearing commonly in spring and summer. This photograph was taken while snorkelling at Cape Peron.

A word of caution for those thinking of embarking on a culinary experiment: *Asparagopsis* includes a vast array of volatile compounds in addition to the bromoform that is active in ruminant digestion, the presence of which might suggest that it is poisonous to eat. As there has never been a reported case of illness resulting from its consumption, it is likely that the overnight soaking and overpowering flavour are natural constraints that limit the quantities ingested. Nevertheless, excessive consumption is not advised!