

GREETINGS LANDCARERS

Merry Christmas! We know many groups have some downtime over the hot summer months and we hope you have an enjoyable break.

For a bit of fun, here's a quiz from Saving Our Species - Which festive threatened species are you? Take the Quiz: <https://quiz.tryinteract.com/#/5fc447b64684b0001677117d>

BVL usually take a break in January but we'll be back next year with more events, workshops and some new programs for you.

From the BVL team



Full of colours for our festive season, this picture by photographer, Jun Matsui, illustrates very well the need for trees appropriate to the ecosystems we live in to provide food (ie. life) for our native animals.

This photo by Jun Matsui was a 'staff pick' in the recent BirdLife Australia Photography awards, shot in Bentley Park, Qld.

BVL NEWS

Thanks to all who came to our AGM and Christmas Party

We held our Brunswick Valley Landcare Annual General Meeting (AGM) and Christmas party for 2023 on Sunday 10th December. Members went away inspired following a promising year. Much groundwork was done this year in preparation for an even better 2024!



Members were inspired by Ray Moynihan and his son Louis talking about their junior landcare workshops in schools.



A Very Weedy Site

We held a workshop on Weed Identification on Saturday 18th November and those that attended learnt a lot. We plan to run more of these in 2024.

Bob Smeuninx (aka Belgian Bob) talked to people about how when you start caring for a piece of land, you become the custodian of that land. It's important to not just tackle weeds once, but to commit to following up to help the area naturally regenerate.

Bob identified several weeds at the Mullumbimby Cemetery site including ground covers, vines, small shrubs, large shrubs and trees. He showed people techniques for managing several of the weeds on the site.



Vicki wrote after the workshop: *"This event was fantastic and oh so valuable. I have a much greater respect for landcare volunteers and bush regen crews now. The afternoon was packed with so much information that was really well presented. I could easily attend another workshop with Bob, whose many years of experience is gratefully received."*



BVL NEWS

That's a Wrap on our film fundraisers

We've had great feedback about our film fundraisers. It was a great way to network with other like-minded people and learn something new. We'd like to be able to continue to offer these events to inspire people and spread the word about land and habitat restoration.

Both The Message of the Lyrebird and Black Cockatoo Crisis had a full house!

We showed three films at Brunswick Picture House and also The Giants at Byron Theatre and raised over \$9,000 in total.



Full house! Far left: Harry Hackett and Deja Ryan - our social media gun!

Linda's Generous Contribution

In early November a group of Mullum Creeker's banded together to plant, mulch and water 115 rainforest plants on Linda's property at the end of Left Bank Road. Linda's home was sadly lost in the 2022 floods but here she stands stronger than ever on the foundation of her former home committed to replanting the property to its former glory. Days like these show us how lucky we are to be surrounded by such an incredible community. A special thank you to Linda for having us, we feel privileged to be a part of this special project "It's going to be a magical place for all to visit. Thank you for your time and generosity in making an idea become a reality" - Linda



Landslips Workshop Provides Expert Information

On Saturday 25th November, people affected by, or likely to be affected by landslips were invited to a workshop held at Mullumbimby Civic Hall. The day provided information on some local case studies, how to deal with landslips and most importantly, how to try and prevent them. Included were presentations, a panel of experts and a delicious, nurturing lunch (see pics below).

Workshop participants were provided with information such as:

- landholder case study presentations
- Seed / species lists relevant to planting on landslips
- Our own Brunswick Valley Landcare 'Climate Resilient Landscapes' booklet (it has a good species list for planting for consolidating slopes on page 29)

Soils experts outlined that some soil landscapes will be more prone to landslips than others. eSpade, an online soil profile and soil map database, has lots of soil mapping information including the soil landscapes [eSPADE v2.2 \(nsw.gov.au\)](https://www.nsw.gov.au/eSpade). To find your soil's landscape turn on soil landscape layer, find your location, and click on the soil landscape polygon. A box will appear with landscape information. Click on View Report for information. Another helpful layer is the Land and Soil Capability Layer – Mass Movement Hazard.

Thank you to those that attended. If anyone would like further information please contact jmcmurtry@brunswickvalleylandcare.org.au to be forwarded the resources circulated after the workshop.



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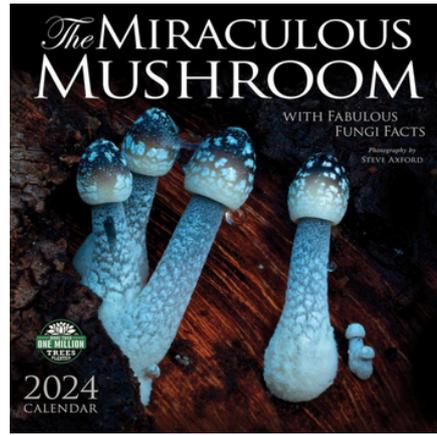
Managing Camphor Laurel for Growing Rainforest and Food

BVL recently assisted Byron Shire Council with a workshop looking at ways to bring diversity and production into ecosystems by applying methods of chemical free Camphor management.

Nadia (Organic Landcare Inc.) and Pierre (Rainbow Regen) are both local Bush Regenerators who have had great success. They showcased their different approaches to 25 participants which included the use of fungi, which not only improves soil health, but also provides food. The workshop demonstrated some systematic regenerative approaches to Camphor management within the context of improving soil, building biodiversity and food production on farm, without introducing chemicals. One of the fungi is edible with others being researched for their medicinal properties. Further workshops are planned for 2024.



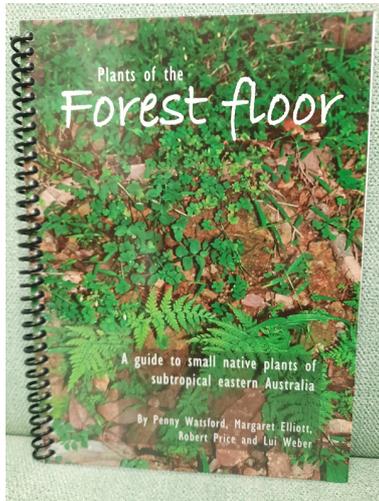
2024 Calendars



BVL have obtained some of the free No Space for Weed calendars produced by Rous County Council. We gave some out at our AGM but if you'd like one, contact jmcmurtry@brunswickvalleylandcare.org.au

Also, our friends from Planet Fungi have produced [Planet Fungi calendars](#) for 2024 which are available now. We love sharing our fungi photographs with you in this way where every month there is a new fab image with some cool facts about the species.

Plants of the Forest Floor - revised edition



This booklet provides a guide to small native plants of subtropical eastern Australia.

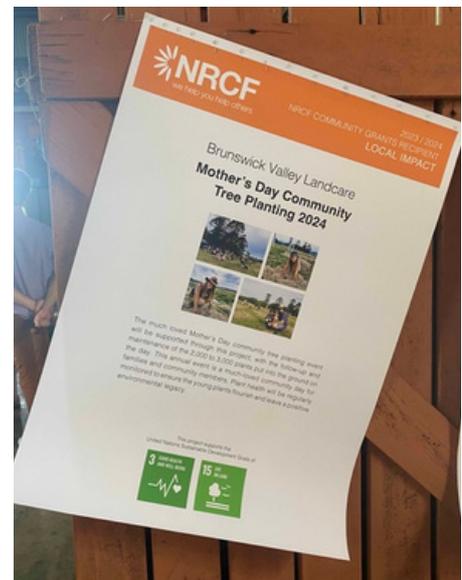
Recently updated in 2023 by local authors Penny Watsford, Margaret Elliott, Robert Price and Lui Weber.

There is nothing quite like this book bringing together in one place an easy reference guide for small plants on the floor of the forest.

Available from Brunswick Valley Landcare for \$20 each.

Funding for Mother's Day 2024 community planting

BVL has been successful in winning a NRCF Community grant for our 2024 Mother's Day Community Planting. We're working to finalise the details so watch this space for more information early next year.



Biocontrol Workshop



Joanne, Harry and Sue attended a Biocontrol Workshop in Coffs Harbour recently, hosted by Department of Primary Industries. Also attending were other Landcare network representatives including Bridget Kent from North Coast Regional Landcare Network (pictured below).

The workshop covered what state and federal government science agencies have done, and are currently doing with biocontrol agents. The process for considering biocontrol agents to tackle pests and weeds was outlined and some interesting stories of successes were told. We had the opportunity of viewing some biocontrol agents at work including weevils on Salvinia and Water Lettuce.



To read more about Biological Control <https://www.dpi.nsw.gov.au/biosecurity/weeds/weed-control/biological-control/about-weed-biological-control>

To download or order a copy of the Biological Control of Weeds Manual, see <https://www.dpi.nsw.gov.au/biosecurity/weeds/weed-control/biological-control/biological-control-of-weeds-manual>



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Analysis of oysters growing naturally in the Richmond River estuary found 21 different pesticides

Researchers from Southern Cross University have released findings from a study that looked at the presence of pesticides in oysters in the Richmond River. Each oyster had detectable amounts of nine different pesticides, on average. One substance was the fungicide benomyl, which has been illegal in Australia since 2006. To be clear: the risk is largely in taking oysters from the wild. Commercially farmed oysters are likely to be safer, as they are regulated by Australia's [shellfish quality assurance program](https://www.dpi.nsw.gov.au/biosecurity/weeds/weed-control/biological-control/biological-control-of-weeds-manual) and can only be harvested when water quality is good. Further reading <https://theconversation.com/pesticide-residue-from-farms-and-towns-is-ending-up-in-fresh-oysters>

Volunteer Weeding on Lord Howe Island

The Friends of Lord Howe Island (TFLHI) was set up in 2001 following concerns about weeds on the island that had resulted from a lack of resources from the Lord Howe Island Board to tackle the issue. The group consists of holiday makers with a difference, who pay to holiday on Lord Howe Island whilst removing weeds and exploring the islands biodiversity. The group is led by Ian Hutton, a naturalist, who has lived on Lord Howe Island for over 40 years.

Diana Hughes, from our Heritage Park locality group, recently participated in Ian Hutton's most recent weeding week. There are two a year, interspersed by birding or scientific study. Ian is the David Attenborough of the UNESCO -listed island.

We weeded each morning and were taken on bush walks in the afternoon. There was time for ocean swimming and snorkeling as the lagoon had a coral reef which attracts colourful fish.

Previous weeding events have nearly removed all the spurge so we had an added task - removing seedling Norfolk Island Pines which are not indigenous to the island. They were planted by early settlers as are other garden varieties that have escaped into a world heritage site! We watched Government employees treating a patch of Madeira vine. Mature pines will remain as they have been adopted as nesting sites by Black Noddies, a species of sea bird, of which there are many.

It's easy to weed on the island, in company with fellow land carers from all over Australia, and all ages . We rescued small trees from vines in clearings where trees had fallen exposing them to the sun. There are no snakes, ticks or nasties and few flies and always a pleasant sea breeze.



BYRON SHIRE COUNCIL NEWS

Flying-fox education project winds up with terrific success

Byron Shire Council's flying-fox education project, No Bat No Me, has ended with feedback from more than 300 primary school students indicating it succeeded in its aim to improve their understanding about the mammals.

The project, which was funded by WIRES, ran for 10 months and during this time Council staff spoke to children in years four to six from nine schools and a home-schooling group, providing information about flying-foxes and their crucial role in the natural environment.

"The feedback from the students was terrific and they seemed to really enjoy learning some of the lesser-known facts about flying-foxes," Claudia Caliarì, Biodiversity Projects Officer said.

"They loved hearing that some have a wingspan of more than one metre, and they can travel up to 100km in one night and a simple survey showed 99 percent of students learnt some key things about flying-foxes as a result of our presentations," Ms Caliarì said.

The school program was part of a broader community education campaign. "We implemented an extensive print and social media campaign highlighting the role flying-foxes play in pollinating our bush, as well as addressing the issue of habitat clearing which is forcing the mammals into urban areas," Ms Caliarì said.

"The reality is, our forests won't survive without them, and we need to learn to coexist, and this is why No Bat No Me has been strongly focussed on educating the younger members of our community.

"We also attended public events such as Splendour in the Grass and farmers markets to talk to people about how unique these flying mammals are and how vitally important it is that we protect and value them and their role in the ecosystem," Ms Caliarì said.

The results of the No Bat No Me project will be used to develop educational projects and the data will be shared with researchers from Griffith University as well as being used in the Flying-Fox Camp Management Plan review which is currently underway.

It will also be shared with WIRES and environmental groups.

Note: image courtesy of Judy Leitch.



FIRE ANTS NEWS

Red imported fire ants in South Murwillumbah update

Following the eradication of the five red imported fire ants nests at South Murwillumbah recently, the NSW Government has been further implementing its fire ant plan by focusing on tracing, surveillance and educating local businesses and the community.

Detection dogs have been on location inspecting local high-risk premises that are linked to materials that red imported fire ants like to nest and travel in such as soil, mulch, quarry products, potted plants and baled materials.

The on-ground teams from the NSW Department of Primary Industries (DPI) have also been in communication with those businesses within the 5 kilometre biosecurity control zone advising them of their biosecurity obligations under the emergency order.

The NSW Government is working closely with the Tweed Shire Council and the National Program that is led by Queensland, to ensure we're keeping the community and key stakeholders updated and applying all available resources to the area.

A community information bus is located outside Tweed Shire Council Chambers (10-14 Tumbulgum Road, Murwillumbah) for locals to obtain more information about what they can do to help stop the spread of these invasive pests.

Everyone in the local area is urged to check their premises, yards and paddocks for the red imported fire ants and then reporting any suspected sighting immediately. Residents and businesses can report any suspicious ant activity to 1800 680 244 or by visiting www.dpi.nsw.gov.au/biosecurity/forms/report-exotic-ants

BACKGROUND

Fire ants are dark reddish-brown with a darker black-brown abdomen and range in size from two to six millimetres long. Although they can look similar to other ants, their ant nests are distinctive with mounds of loose, crumbly or fluffy looking soil with a honeycomb appearance, up to 40 centimetres high, with no obvious entrance holes.

Red imported fire ants can damage electrical and agricultural equipment, sting people causing allergic reactions, sting pets and livestock, kill native plants and animals, and also damage ecosystems beyond repair.

For further information <https://www.dpi.nsw.gov.au/biosecurity/insect-pests/fire-ants>



FIRE ANTS - BIOSECURITY DUTY

If you are purchasing materials, you need to be aware of your *Biosecurity duty*. Fire ants are listed as a prohibited matter throughout NSW under the Biosecurity Act 2015 (NSW). This means that **any** person who “deals” with fire ants or fire ant carriers is guilty of an offence under that act if risk mitigation measures are not in place.

Anyone who moves equipment or goods that could carry fire ants, from or through the fire ant-infested areas in SE Queensland, must have a Queensland Government plant/material health certificate before moving the items.

In relation to the South Murwillumbah infestation, residents and businesses wanting to move these materials out of the 5-km Control Area must meet the requirements under NSW's Emergency Order (see link below).

Fire ant carrier materials are:

1. organic mulch, includes manure, bark, wood chips, hay, straw, silage and sugarcane bagasse but does not include baled material,
2. soil and anything with soil on it,
3. baled material, includes baled hay, baled straw, baled sugarcane and baled silage,
4. potted plants, includes a plant in a container that was grown or re-potted in potting media, and includes the container, the plant, and the potting media. It does not include tissue culture, or seedlings in plugs or cells used to grow or transport plants, with a volume of 0.1 litres or less,
5. turf,
6. agriculture or earth moving machinery, and
7. mining and quarrying materials, includes material that is a product or by-product of mining or quarrying, including chitters, coal fires, coal stone, decomposed granite, sand, gravel, and overburden.

Fines are up to \$2,200,000, plus \$275,000 for each day the offence continues.

For more information on permits or how to identify fire and nests, plus a map of SE Queensland fire ant-infested zone, go to DPI website : [Red imported fire ants \(nsw.gov.au\)](https://www.dpi.nsw.gov.au/red-imported-fire-ants)

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Weed control after floods

Following the 2022 NSW flood events, the NSW and Australian governments committed \$13 million to support primary producers in the most flood-impacted regions and industries of NSW in their recovery.

A major component of the two-year program has been establishing landscape scale weed control across the North Coast.

Overall, almost 1,000 ha of weed control has been carried out in the North Coast, ranging from the Tweed Heads to Port Macquarie, with 620 ha of weed control undertaken in the Bellingen area alone already.

Find out more about weed control works in the North Coast as part of the [Early Needs Recovery Program](#) on the Local Land Service's website.



Exciting Conference Coming to Ballina June 2024

The Department of Planning and Environment, Biodiversity and Conservation Division, are hosting this conference in Ballina 4 - 7 June 2024.

Rainforest Connections 2024 is the first conference in over two decades that is dedicated to the restoration, rehabilitation, and management of Australia's unique rainforest habitats. This event will connect more than 200 delegates from a wide range of backgrounds including scientists, program managers, on-ground practitioners, community members and specialists implementing projects in the field.

The diverse range of presentations will feature case studies of on-ground action, species recovery programs, and cutting-edge environmental research as well as specific tools, techniques, challenges and strategies for managing rainforest habitats. The important connection between nature and culture will be highlighted and include presentations.

Attendance is encouraged for professionals and students that want to be at the forefront of rainforest conservation management and innovation.

The call for abstracts is open now until 28 February. Early bird rates are available until 12th April, but there is a lot of interest, so get in early!

Further details on the website. <https://rainforestconnections.com.au/>

Surface Water Science - local testing

Water testing is launching at 20 new sites in the Northern Rivers, including Byron, using advanced technology to uncover the lives of fish and wildlife.

Experts from the NSW Department of Planning and Environment are examining 250 coastal creeks and rivers for Environmental DNA (eDNA), revealing species presence without disturbing wildlife. The data aims to understand river-dwelling creatures, especially threatened species. Results will inform evidence-based water management decisions by the NSW Government, supporting environmental and aquatic life.

The ongoing program has already sampled 140 sites statewide and plans to test over 250 sites by 2024. Detected species will be published to aid water management, research, and conservation efforts.

For more information, visit the Department's website <https://water.dpie.nsw.gov.au/science-data-and-modelling/surface-water>

CARING FOR OUR WILDLIFE THIS SUMMER

(Source: Wildlife Preservation Society of Qld)

In a recent interview Wildlife Queensland Projects Manager, Matt Cecil, and Wildlife Queensland Bayside Branch President, Steve Homewood, provided valuable guidance on caring for our wildlife during the heat. Read their key insights below.

Threats to wildlife during the heat

Summer is approaching, holidaymakers are gearing up for long trips, and wildlife is stirring. Wildlife Queensland warns that hot summers and increased traffic threaten wildlife, so extra vigilance is in order. "Dehydration is a major summertime problem for many wild animals," says Matt Cecil.

"In dry periods, any night-time moisture tends to drain off to the side of roads, encouraging green growth, which in turn entices animals like wallabies to feed, so it's a good idea to be super-alert behind the wheel, especially at dawn and dusk.

"Animals like koalas and greater gliders get most of their water from leaves; when leaves dry out, the animals suffer. Putting bowls of water around the property can help all thirsty wildlife, but wherever you place them, you need to make sure that animals coming to drink are safe from cats and dogs – managing our pets is a major consideration."

Creating wildlife havens

That consideration is echoed by Steve Homewood, who asserts that creating shaded, moist environments will attract insects and birds, especially if native trees and shrubs are encouraged. "Ideally, wherever possible, we should create a haven in our yards, somewhere safe from predators, supplied with shade and water. Shallow dishes close to the ground will serve lizards and the like, and standing birdbaths are ideal for this purpose. Just be sure that water containers don't pose a risk to the family and keep an eye out for mozzies," says Steve.

Road incidents involving wildlife

Any increase in road traffic brings with it an elevated risk of injuries to wildlife, especially during the summer months when many wildlife species, including koalas, reptiles, and kangaroos, are more active and on the move in search of water or moist environments. Dealing with road incidents calls for a combination of compassion and common sense. "If a marsupial has been killed, there's always the chance, if it's a female, that there may be a joey in the pouch," says Steve.

"If the animal is alive but injured, attending to it could entail risks, from the animal and from traffic – so it's best to ring one of the animal welfare groups in the area and follow their advice." Join us in safeguarding our wildlife this summer — your care makes a world of difference.

In the Northern Rivers, call WIRES 1300 094 737 or Northern Rivers Wildlife Carers on 6628 1866.

For more information including blog articles for valuable insights and information on creating safe havens for wildlife like how to build a frog pond, a frog hotel, bringing the bush to urban backyards, etc see https://wildlife.org.au/caring-for-our-wildlife-this-summer/?mc_cid=56427afec0&mc_eid=620612f8fb

COASTCARE WEEK LAST WEEK

We'd like to thank all our dunecare and coastcare groups belatedly as part of CoastCare Week, which was 4 - 10 December. We have a few dunecare groups from South Golden Beach down to the Suffolk Park area. You can see an updated list of our volunteer groups across the Brunswick Valley [here](#).



Coastcare Week is an annual campaign celebrated during the first week of December that acknowledges the Australians who are actively restoring, enhancing and protecting the coastline, waterways, habitat and biodiversity in their community.

Here's 7 Coastcare tips you can do all year round.

1. At the beach, keep on the walking tracks. This protects the vegetation that provides habitat for local native birds and other animals and prevents erosion.
2. Woof woof! Ensure your dogs are kept on a lead in areas where dune vegetation is vulnerable. Landcare and Coastcare groups work on these sites to enhance the habitat for native animals to protect them.
3. Take a bag with you to the beach to collect rubbish on your next walk.
4. Every piece of plastic removed from the marine environment can save an animal's life and reduce the amount of microplastic created. Pick up rubbish and recycle.
5. Take the slow lane, walk instead of driving
6. on beaches (4WD on beaches can rip up plants, destroy sea bird nests and eggs, destroy the sediment profile and more).
7. Use reef safe sunblock to protect marine life from harmful chemicals.
8. Volunteer with your local group and support their community events or donate to help them buy materials for their activities.



Managing open grassy forests

Did you know that native Grassy Forest ecosystems are among some of the most threatened vegetation types on the North Coast of NSW with between 10-60% remaining since 1750?

North Coast LLS and Border Ranges Richmond Valley Landcare Network are excited to promote these [Grassy Forest information resources](#) for the wider community to understand grassy groundcover focused management to address ongoing threats posed by weed encroachment, overshadowing of canopy and wildfire fire.



Wild Horse Rehoming Program

Wild horses exist on both public and private land and threaten conservation areas.

They present a major public safety risk in the region. In the Clarence and Coffs Harbour regions wild horses are in areas that can access the M1 and other local roads, presenting an extreme safety risk to drivers.

Local Land Services are working with brumby rescue organisations to safely trap and rehome wild horses in the Clarence and Coffs Harbour regions. To date 94 wild horses have been successfully rehomed.

If you are interested in rehoming one of the wild horses from the program visit their website for more information or call the Invasive Pests team on 1300 795 299. Find out more about LLS's [work with wild horses](#).

For another story on how Brumbies are showing great potential, see

<https://www.abc.net.au/news/2023-11-13/horse-show-just-for-brumbies-displays-potential>

Researcher predicts Australia faces feral bee die-off as varroa mite found in swarms

Varroa mite has forced the euthanasia of hundreds of millions of European honeybees by authorities since it was detected at the Port of Newcastle in June last year.

While a transition from eradication of the deadly parasitic mite to management will enable beekeepers to treat infested hives, feral bees in Australia are expected to vanish, possibly within three years.

Feral bees or wild bees are European honeybees that have their hives in tree trunks and are not the same as the native Australian bee. The varroa mite has little impact on native bees.

An infestation of 9,000 varroa mites has been detected in a Central Coast feral bee swarm. Swarms are being caught to help amateur beekeepers restock

Read more <https://www.abc.net.au/news/rural/2023-11-09/deadly-parasite-varroa-mite-behind-predicted-feral-bee-die-off>

How a supercell thunderstorm can produce violent winds, large hail and tornadoes

Eastern Australia has been rolling in storms recently with the potential for widespread flooding and dangerous weather events known as supercell thunderstorms.

Supercells are the biggest and baddest kind of severe thunderstorms, capable of producing violent winds in excess of 125 kilometres per hour, large hail more than 5 centimetres in diameter, and heavy rainfall.

There are three types of thunderstorms: the single-cell, which is almost never severe, the multicell, which is the most common, and the supercell, which is the least common and most severe.

To read all about supercell storms see <https://www.abc.net.au/news/2023-11-29/supercell-thunderstorm-produce-strong-winds-large-hail-tornadoes>

Where are all the Christmas Beetles?

Christmas beetles are an iconic feature of the Australian summer and many Australians have fond memories of finding these big beautiful beetles in large numbers. In the last ten years or so there have been many anecdotal accounts of people seeing fewer Christmas beetles and media articles asking, "[Where are all the Christmas Beetles?](#)"

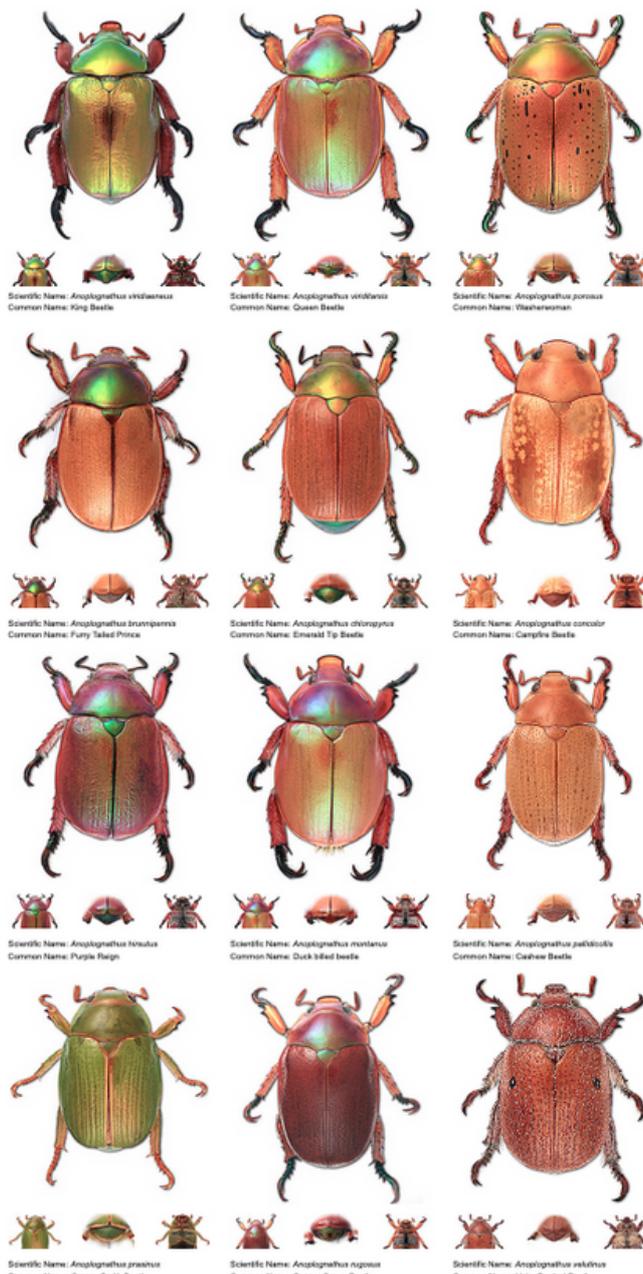
Invertebrates Australia want to know the answer to this question too! That's why they've teamed up with [Dr Chris Reid from the Australian Museum](#) as a Scientific Advisor and set up a project to figure out what's going on.

They have started a Community Science Project to gather observations of Christmas Beetles.

Gathering data on the whereabouts of Christmas Beetles is the first and most critical part of the study. We need as many people as possible to tell us when they spot a Christmas Beetle! Contribute your photos of Christmas Beetles to our [iNaturalist Christmas Beetles Project](#) ... and beware of imposters!

For further information on the project and links see

<https://invertebratesaustralia.org/christmasbeetles>



NEW GUIDE IS AUSTRALIA'S RECIPE FOR GREEN ROOF SUCCESS (Source: Green Spaces Better Places)

The [Burnley Green Roof Plant Guide](#) by the University of Melbourne is a game-changer for Australian homeowners and landscape architects. Crafted for urban gardeners, this free guide simplifies rooftop garden creation while addressing climate change challenges with drought-tolerant plants. Lead author Associate Professor John Rayner champions the guide's role in selecting the right plants for optimal green roof benefits.

The guide provides proven plant palettes for flourishing Australian green roofs. Based on over 15-years' of research and plant trials at the University of Melbourne's Burnley campus, the guide outlines plant combinations that can be used on a range of different green roof types to maximise the benefits of urban greening. Funded by Hort Innovation through the Hort Frontiers Green Cities Fund - part of the Hort Frontiers strategic partnership initiative.

Download the free guide [here](#)

Denial is over. Climate change is happening. But why do we still act like it's not?

(Source: The Conversation)

Climate-fuelled disaster is now front-page news, as record-breaking floods, fires, droughts and storms keep arriving.

The damage done by climate change is systemic and pervasive, resonating through our communities, economies and environments. It manifests in many ways, from empty spaces in supermarket shelves to houses left unlivable after floods, anxious communities, collapsing ecosystems and emergency services stretched to capacity.

Climate researchers initially assumed that if you gave people the right information, we would act on it. Burning fossil fuels comes with severe consequences – so let's phase out fossil fuels. But they found out very quickly this was not the case.

For many people, it triggered cognitive dissonance, where they knew climate change was happening but acted like it wasn't. After all, many people still smoke, even though they know it is bad for their health. And many of us still fly to Italy – even though we know how many extra tonnes of carbon dioxide we put into the atmosphere.

But why is it so easy to understand but not act?

Change seems hard, doing nothing is easy

It's because of public and private narratives we have grown up with. Our expectations of life are geared towards wanting comfort and stability.

This means not everyone has developed the ways of thinking needed to deal with the impacts (such as natural hazards) we are now facing. Sudden changes caused by these – such as the loss of a home – are almost invariably shocking and can create a sense of disbelief. How could this be? When do we get back to normal? Surely it won't happen again?

Read about the research undertaken by Victoria University around why it's so hard for people to embrace climate change adaptation <https://theconversation.com/denial-is-over-climate-change-is-happening-but-why-do-we-still-act-like-its-not?>

You'll find in the article a link to a relevant paper on Problem Solution Framework from the Victoria University, Melbourne <https://vuir.vu.edu.au/32103/1/19-Young-2014-Problem-Solution-Framework.pdf>

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12 wins for conservation in 2023

It is not quite the 12 days of Christmas, but these 12 threatened species success stories from Saving Our Species are truly a gift that keeps on giving.

While there's been a whole lot more than just 12 wins this year, here are just a few to look back on to put a smile on your dial.

<https://www.environment.nsw.gov.au/news/12-wins-for-conservation-in-2023>



REGENERATIVE FARMING

About Landcare Farming

The Landcare Farming Program is a joint partnership between Landcare Australia and the National Landcare Network, as funded by the Australian Government's National Landcare Program. Its aim is to strengthen the connection between landcare and Australian agriculture and build agricultural community resilience.

The Landcare Farming Program provides easy access and support for farmers to connect with leading university and industry-led research programs, partnership opportunities, tools and resources. By working together with like-minded stakeholders, we have developed a range of projects focussed on encouraging environmental stewardship, engaging in innovative land management practices and validating new research to improve farm productivity.

To read more, including about the projects underway, a discussion paper, and for contact details see <https://landcareaustralia.org.au/landcarefarming/about-landcare-farming/>



Landcare Australia Farming Webinars

Join Landcare Farming for 3 Landcare Farming webinars this December!

Tues 5 Dec, 2:00pm – 4:00pm (AEDT):

2023 Update: Maximising Ecosystem Opportunities to Fit Your Business: Carbon

The latest thinking and a discussion of happenings in the soil carbon world in the past 12 months with a panel of 5 experts in their field.

Book here: <https://bit.ly/3ZYz4nN>

Tues 5 Dec, 11:00 – 12:30pm (AEDT).

Australia's Soil Carbon Account with FarmLab

Get ready for a deep dive into technology and environmental science.

Book here: <https://bit.ly/46yB9cl>

12th December 2023.

Understanding the Australian Feedbase Monitor. Alastair Rayner from Cibo Labs will demonstrate how the Australian Feedbase Monitor can be used by land managers to support their land management & grazing decisions.

Two sessions are available to book:

Session 1: 10:00am – 11:30am (AEDT) – Book here <https://bit.ly/3MBJTqp>

Session 2: 6:00pm – 7:30pm (AEDT) – Book here <https://bit.ly/40Nac37>

[Sign up to the Landcare Farming List](#) to attend all upcoming Webinars.

Soil Health Card

A great tool/resource created by soil experts here in the Northern Rivers and internationally recognised is the Soil Health Card. The card explains some very simple DIY observations to help us understand our soil better and make better land management decisions.

A great quick video on soil monitoring here [The Soil Health Card Soil Tests on Vimeo](#)
Download the Northern Rivers Soil Health card for free here: [Soil Health Card - SoilCare Incorporated](#)



Grazing Clinics/ Workshops

Two upcoming workshops that might interest farmers:

Tenterfield Grazing Clinic

Dates: 6-8 February 2024

An introduction to Regenerative Agriculture through a practical, hands-on workshop. Maximise pasture and livestock production with this practical workshop that equips producers with the data driven tools of time-controlled grazing, including matching stocking rates to carrying capacity, calculating and assessing graze and rest periods, and using grazing charts to monitor and plan, as well as fencing and water design, improving soil health, increasing ground cover and water retention, and adapting to seasonal variability. Learn more about [RCS Grazing Clinic](#)
Investment: \$1,350pp Early Bird (Standard rate \$1,650pp)

Tamworth Farming & Grazing for Profit

Dates: 6-12 March 2024

With over 8000 graduates so far, this comprehensive 7-day professional development course is designed to equip producers, and those in related roles, with proven management principles that are the backbone of agricultural business success. Participants will graduate with the knowledge and practical skills to transform their business, make informed decisions, increase profitability, improve soil and plant health, maximise productivity, develop drought resilience, and optimise livestock nutrition and reproduction for highest performance. Learn more about [Farming & Grazing for Profit](#)

Investment: \$5,000pp Early Bird (Standard rate \$5,500pp)

Further discounts for couples, groups, students and repeats



Coffee beans with a distinct taste of place an opportunity for Australian growers

Coffee lovers may tell you that Australian coffee tastes different, and they would be right.

Research by Agrifutures Australia and Southern Cross University has discovered that Australian-grown coffee beans have their own distinct taste of place, or "terroir".

The research tested more than 100 single-origin green beans grown from 28 different farms across Australia, comparing them to 50 single-origin international beans. Read more <https://www.abc.net.au/news/rural/2023-11-25/australian-coffee-research-taste-of-place>

SNIPPETS

3000 years of carbon monoxide records show positive impact of global intervention in the 1980s

An international team of scientists has reconstructed a historic record of the atmospheric trace gas carbon monoxide by measuring air in polar ice and air collected at an Antarctic research station.

The team, led by the French National Centre for Scientific Research (CNRS) and Australia's national science agency, CSIRO, assembled the first complete record of carbon monoxide concentrations in the southern hemisphere, based on measurements of air. The record spans the last three millennia.

CSIRO atmospheric scientist Dr David Etheridge said that the record provides a rare positive story in the context of climate change. "Atmospheric carbon monoxide started climbing from its natural background level around the time of the industrial revolution, accelerating in the mid-1900s and peaking in the early-mid 1980s," Dr Etheridge said.

"The good news is that levels of the trace gas are now stable or even trending down and have been since the late 1980s – coinciding with the introduction of catalytic converters in cars."

Further reading <https://www.csiro.au/news/All/News/2023/November/3000-years-of-carbon-monoxide-records-show-positive-impact-of-global-intervention>

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Food and Fuel: Algae Can Do Both

While you might recognise algae growing in your fish tank or floating on a lake, it can be transformed into a human food source that can also power your car, and it doesn't compete for space with crops.

It's the biofuel option that you and your car can use, and scientists hope it could soon be coming to a bowser near you. While eating algae is becoming more popular, such as nori seaweed or algal oil in dietary supplements, Dr Harrison has no doubt algae will also feature at the fuel bowser.

Further reading <https://www.abc.net.au/news/2023-11-13/sugar-mill-using-wastewater-to-grow-algae-for-biofuel-bundaberg>

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Circular economy centre planned for Bega amid push for sustainability

A plan to build a centre focused on the development of circular economies has been announced for Bega, New South Wales. The state government has committed \$14 million to the \$19m National Circularity Centre (NCC) project and the Bega Group will contribute the remaining \$5m and the land for the Cox Architecture-designed building.

The centre will be a hub for the research and development of economic models based on sustainability, but the Bega Group says will also offer food, information for visitors and events. Read more <https://www.abc.net.au/news/rural/2023-11-09/circular-economy-centre-planned>

Rapid decarbonisation can steer Australia to net zero before 2050

A new report by CSIRO, Australia's national science agency, shows existing technologies will enable Australia to halve emissions by 2030 from 2020 levels, under a rapid decarbonisation scenario led by a renewable electricity sector.

The report, *Pathways to Net Zero Emissions – An Australian Perspective on Rapid Decarbonisation*, emphasises that an accelerated transition is needed across the economy if we are to meet the goal of net zero before 2050 and limit global warming to 1.5°C.

CSIRO's Rapid Decarbonisation scenario projects key milestones in 10-year timesteps that would set Australia on a path to net zero by 2050.

To download the report, and industry fact sheets, see

<https://www.csiro.au/news/All/News/2023/December/RAPID-DECARBONISATION-CAN-STEER-AUSTRALIA-TO-NET-ZERO-BEFORE-2050>

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New CSIRO-Pacific partnership to tackle region's environmental challenges

A new scientific cooperation agreement for the Pacific will boost climate change risk and adaptation management, environmental protection and sustainable development for current and future generations across the region.

The five-year Memorandum of Understanding (MoU) was signed at COP28 in Dubai by the Secretariat of the Pacific Regional Environment Program (SPREP) and CSIRO, Australia's national science agency. The agreement builds on a partnership, established in 2016, which has yielded programs like the [Vanuatu Climate Futures Portal](#), recently launched in Port Vila. The Portal is providing climate information, projections and decision-support tools in easy-to-understand formats to help adaptation and decision-making across agricultural, infrastructure, fisheries, tourism and water sectors.

The jointly designed and delivered programs will support evidence-based science for risk management and broader decision-making for Pacific countries across environmental science domains, including:

- Climate change science and services;
- Integrated climate impact, vulnerability and risk assessments;
- fisheries and marine coastal resources and ecosystems; and
- Ocean scale physical systems monitoring, modelling and assessment.

The MOU also encompasses:

- Food systems modelling, analysis and assessment planning;
- Plastics and other waste modelling, assessment and management;
- Water security assessments and modelling; and
- Energy transition modelling, assessment and planning.

Further information <https://www.csiro.au/news/All/News/2023/December/New-CSIRO-Pacific-partnership-to-tackle-regions-environmental-challenges>

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Further reading <https://www.csiro.au/en/news/All/News/2023/November/3000-years-of-carbon-monoxide-records-show-positive-impact-of-global-intervention>



State-of-the-art renewable hydrogen refuelling station launched

Australia's national science agency, CSIRO, and Swinburne University of Technology's Victorian Hydrogen Hub (VH2) have today launched a state-of-the-art clean hydrogen refuelling station, purpose-built for enabling hydrogen research.

The \$2.5 million refuelling station uses green hydrogen produced with electricity from renewable sources that allows hydrogen cars to travel over 600km emissions-free on a full tank.

Located at CSIRO's Clayton site in Victoria, the station showcases the real-world application of hydrogen and will be used to demonstrate hydrogen's utility for transport.

It will also be used to test emerging hydrogen technology and train the next generation on the use of hydrogen stations to ensure Australia remains internationally competitive.

Hydrogen refuelling facts

- There are two makes of hydrogen car available in Australia at the moment: the Toyota Mirai and the Hyundai Nexu.
- There are 12 hydrogen refuelling stations either operating or under construction in Australia.
- Hydrogen cars take about 6 minutes to fill up from empty.

Further reading <https://www.csiro.au/news/All/News/2023/November/CSIRO-and-Swinburne-University-of-Technology-launch-renewable-hydrogen-refuelling-station>

FUNDING

The Urban Rivers and Catchments Program

This program is part of the government's Nature Positive agenda and will fund projects to conserve native and threatened species and improve the ecological health of urban waterways. There is \$200 million in funding to restore urban rivers and catchments over the next three years with two streams available:

- Small to medium sized projects to the sum of \$150,000 - \$2 million for community-led projects
- Large-scale projects between \$2 million and \$10 million for projects that include co-investment

The lower Tweed, Byron Bay, Lismore, Ballina Shire & Grafton all represent significant urban areas for the purpose of this grant program.

You can find our more information about these grants, which close in February 2024 here <https://www.dcceew.gov.au/environment/biodiversity/conservation/urban-rivers-catchments-program>



WEED OF THE MONTH

Giant Devil's Fig (*Solanum chrysotrichum*)

(From NSW WeedWise)

We have been hearing about the explosion of Giant Devil's Fig in lots of workshops and forums recently, as it appears to be prevalent following the floods. Giant devil's fig is a shrub or small tree up to 4 m tall. It has prickly stems and leaves, which are very hairy when young. Small, white flowers grow in clusters from autumn to spring. It has shallow roots.

Giant devil's fig is an environmental and agricultural weed that forms dense thickets. It outcompetes native plants, competes with pasture grasses reducing productivity, contains toxins and has sharp prickles that can injure people and animals. It is able to grow in many soil types and conditions.

Giant devil's fig looks similar to:

- Devil's fig (*Solanum torvum*), which has smaller leaves and flowers. Hairs on new growth are whitish or yellowish rather than red.
- Tropical soda apple (*Solanum viarum*) which does not grow as tall and has larger fruit that are mottled when immature. The flowers are in clusters of up to 6 rather than up to 50 and the prickles are usually longer (12 mm).

Giant devil's fig is spread by seed. Birds, flying foxes and other animals eat the fruit and spread the seed. Seeds spread by water and contaminated soil.

Control

Giant devil's fig can be controlled by physical removal and herbicides. Gloves and protective clothing should be worn to prevent prickle injuries.

Physical removal - Seedlings and small plants can be dug out with a mattock. Larger plants can be cut down and the roots dug up.

Chemical control

- Spot spraying - Plants can be spot sprayed with herbicides. Spraying will not kill the seeds in fruit so it is important to collect the fruit and dispose of it. Dispose of the fruit in your red bin.
- Cut stump - Cut the stump and then quickly apply the herbicide gel. Apply a 3–5 mm layer of gel for stems less than 20 mm. Apply a 5 mm layer on stems above 20 mm.

For more detail on control, including herbicide details, see

<https://weeds.dpi.nsw.gov.au/Weeds/GiantDevilsFig>



Photos courtesy DPI Weed Wise website.

WORKING BEES

Why not get out and get involved in one of our local groups?

For all Landcare Working Bees please wear protective clothing - long pants, long-sleeved shirt, closed-in shoes, hat, gloves and bring water, sunscreen, and insect repellent. Please always contact the group co-ordinators before attending a working bee as plans do change!

Bangalow Land and Rivercare, Bangalow

WHEN: every Saturday 8:30am

WHERE: find out from

CONTACT: Noelene Plummer bangalowlandcare@gmail.com 0431 20 0638 6687 4470

Frends of Lilli Pilli (Byron Bay)

WHEN: 1st Saturday of the month 3:30pm - 5:00pm

WHERE: At entrance to Lilli Pilli (contact Deb).

CONTACT: Deb Jorgensen deborah.jorgensen60@gmail.com 0434 254 802

Green and Clean Awareness Team, Byron Bay

WHEN: 3rd Sunday of the month 9:00am

WHERE: Meet Main Beach, Byron Bay

CONTACT: Peter Farmakis peter.farmakis@gmail.com 0488 715 565

Heritage Park Landcare, Mullumbimby

WHEN: Saturdays 9:00am – 11:00 am

WHERE: Heritage Park, Mullumbimby

CONTACT: Diana Hughes bromspot@gmail.com

Jinangong Landcare, Ocean Shores

WHEN: 1st Sunday of the month

WHERE: The Tunnel Road, Ocean Shores

CONTACT: Ian Parer ianparer@hotmail.com

Mullum Town Landcare, Mullumbimby

WHEN: Morning of last Sunday of the month

WHERE: find out from John Tann

CONTACT: John Tann johntann99@gmail.com

Ocean Shores Landcare, Ocean Shores

WHEN: each Thursday at 8.30 – 11.00 am (8.00am DST)

WHERE: corner of Yallakool Drive and Warrambool Road, Ocean Shores

CONTACT: David Kemp dnkemp77@gmail.com 0427 650 861

Suffolk Park Dunecare

WHEN: 8.30 - 10.30 every fourth Sunday of the month

WHERE: find out from:

CONTACT: Rebekah O'Flaherty rebekahoflaherty@gmail.com 0428 942 903

Tallowood Ridge Locality Landcare, Tallowood Ridge Mullumbimby

WHEN: Second Saturday of the month from 3pm (winter), 4pm (summer).

WHERE: Gathering Tree Pocket Park, Cockatoo Cres Tallowood Ridge Estate

CONTACT: Joanne McMurtry jmcmurtry@bigpond.com

Tyagarah Landcare

WHEN: Each Thursday 9:00am – 11:00am

WHERE: 23 Prestons Lane, Tyagarah

CONTACT: Bela Allen bela_allen@yahoo.com 6684 7113

Can't find a group near you? We have many other groups who meet on an ad hoc basis (contact us

LINKS

- Arakwal <http://arakwal.com.au/>
- Australian Association of Bush Regenerators <http://aabr.org.au>
- Border Rangers Alliance http://www.greasternranges.org.au/border_ranges/overview/overview
- Bangalow Koalas <http://www.bangalowkoalas.com.au/>
- Bangalow River and Landcare <http://www.bangalowlandcare.org.au/>
- Big Scrub Landcare <https://www.bigscrubrainforest.org.au/>
- Brunswick Valley Landcare <http://www.brunswickvalleylandcare.org.au/>
- Byron Bird Buddies <http://www.byronbirdbuddies.com.au/>
- Byron Community College <http://www.byroncollege.org.au/>
- Byron Shire Council <http://www.byron.nsw.gov.au/>
- EnviTE www.envite.org.au
- Environmental Trust <http://www.environment.nsw.gov.au/grants/envtrust.htm>
- Friends of the Koala www.friendsofthekoala.org
- Federal Landcare Inc federalandcare@gmail.com
- Local Land Services www.northcoast.ils.nsw.gov.au
- North Coast Local Land Services <http://northcoast.ils.nsw.gov.au/>
- Border Ranges Richmond Valley Landcare www.brrvl.nsw.gov.au
- Mullumbimby Community Gardens <http://mullumcommunitygarden.wordpress.com/>
- North Coast Nature <http://www.northcoastnature.org.au/>
- Richmond Landcare Inc. <http://www.richmondlandcare.org/>
- Rous County Council (formerly Far North Coast Weeds) <http://rous.nsw.gov.au/>
- Soilcare <http://www.soilcare.org>
- Tweed Landcare Inc. <http://www.tweedlandcare.org.au/>
- Wilson's Creek Huonbrook Landcare <http://www.wilsonscreeklandcare.mullum.com.au/>

**For information about Landcare or other natural resource issues in Byron shire please contact
Landcare Coordinator, Alison Ratcliffe 0421 244 640**

info@brunswickvalleylandcare.org.au

Community Liaison Officer, Joanne McMurtry 0409 925 330

jmcmurtry@brunswickvalleylandcare.org.au

www.brunswickvalleylandcare.org.au

