Queensland Science Network

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Periodical Newsletter

This Newsletter has been compiled on behalf of member groups of the Queensland Science Network (QSN), partly to showcase their work; and partly to bring new initiatives in science and natural history to public attention. Participating groups include:

Editor: Col Lynam

Newsletter Subscription: https://scienceqld.org/ . You can also get in touch via our Facebook site (https://www.facebook.com/QLDScienceNetwork/) or by email to the Editor. newsletter@scienceqld.org.au.

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Acknowledgement of Country

The Queensland Science Network (QSN) acknowledges and pays respects to the Yuggera people, the Traditional Owners of the lands on which the Editorial Office is located.

The QSN also acknowledges and pays respects to the Traditional Owners and the Elders past, present and emerging of all the lands on which the QSN operates, and its members live and work. They hold the memories, traditions, cultures and hopes of Aboriginal and Torres Strait Islander peoples of Australia.

Editorial

Dear QSN Newsletter readers,
This “Express Edition” comes brimming with more HOT NEWS about coming events than I’ve seen since before Covid-19 lockdowns began. I hope you get to attend the volunteer events throughout Queensland.

I have highlighted some articles on soil science and agricultural science to remind us about the practical side of the scientific climate emergency endeavours that will sustains us into the future.

Dear Network Secretaries, please forward this Newsletter on to your members. Please send me YOUR SOCIETY’S information that will interest our wider science community.

The Queensland Science Network (QSN) was officially launched by His Excellency the Governor of Queensland at a reception on Thursday 13 June 2019. The Queensland Science Network fosters collaboration between organisations involved in science and natural history. ‘Science’ is the application of scientific method to observations about the biophysical world.
Colin Lynam, Editor, Queensland Science Network Newsletter (newsletter@scienceqld.org.au)

Quote of the day

“There’s a body of knowledge you develop as a community that cannot be replicated by Western science.”

Anthropologist Julie Raymond-Yacoubian lauds an example of a successful collaboration that gave oceanographers access to the wide-ranging knowledge of Indigenous Alaskan people. (Science | 7 min read)

HOT NEWS AND EVENTS

Dear QSN Members, as QSN Newsletter Editor, I sight a lot of information and these 6 reports I feel will be of especial interest for you to seek out and read…. EDITOR

The Peaks to Points Festival, *proudly supported by the Brisbane City Council, is a biennial event that aims to provide a forum for community groups and businesses on the south side of the Brisbane River (including Ipswich, Redlands and Logan City Council areas) to collaborate in engaging with the community, hosting events and activities focusing on important environmental & sustainability issues in the area.*

The highlight of the fortnight celebrations is the FREE Family Day at the Oxley Creek Common. The day features live entertainment, children's activities, interactive and informative stalls, along with food and beverage vendors.

Previously known as the Oxley Creek Water Festival, which focused on the Oxley Creek catchment between Tennyson/Graceville and Mount Perry on the north eastern side of Flinders Peak, the Peaks to Points Festival was held for the first time in 2008. The festival now encompasses the areas on the southern side of the Brisbane River from Ipswich to Redlands, an area of approximately 750 square kilometres.

Other events held throughout the two weeks will include bird-watching, canoeing, bus tours, bird watching, platypus watch, tree-plantings and bush walking. To be in the loop with all the latest news, the festival program announcement and more, follow on Facebook.

World Science Festival Queensland

The festival will once again hit the road!
World Science Festival Queensland is returning to Regional Queensland throughout the year to Townsville, Chinchilla, Gladstone, Toowoomba and Ipswich.

Townsville - 7 – 8 May, 2021, **School Holiday Program**: 18 September – 4 October, 2021
Chinchilla - 6 – 7 June, 2021
Gladstone - 29 – 30 August, 2021
Toowoomba - 10 – 11 October, 2021, **School Holiday Program**: 26 June – 11 July, 2021
Ipswich - 7 – 8 November, 2021, **School Holiday Program:** 18 September – 4 October, 2021

CitSciOz21: Celebrate, Communicate, Co-Create

ACSA is excited to bring you the 4th Conference of the Australian Citizen Science Association, a virtual event which will be held from 27–29 October, 2021. Centred around the themes of Celebrate, Communicate, and Co-Create, the virtual experience will ensure a highly interactive and engaging event, with the capacity to network with fellow attendees, speakers, and sponsors as well as providing the learning outcomes and benefits one would come to expect from an in-person event.

The Call for Abstracts is open so jump onto ACSA's website for all the info, including theme descriptions, presentation types and the link to the Abstract Portal.

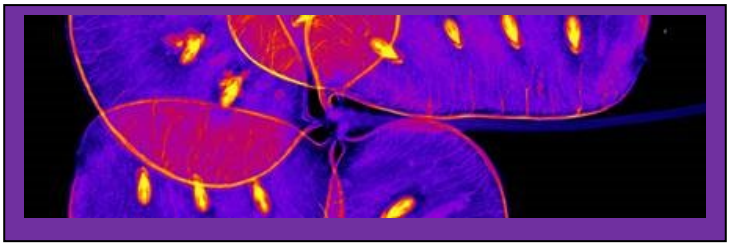
Keen to sponsor this event or donate a prize? If so, ACSA would like to hear from you! Please view its Sponsorship Prospectus or contact Amy via coordinator@citizenscience.org.au .

Social Sciences Week 6-12 September

Social Sciences Week 2021 is coming soon. "Get involved by registering an event now". For the 2021 program, ASSA is welcoming virtual, in-person and hybrid events. More information on its website https://socialsciences.org.au/

Plants and People: The Art of Living Together -------Wed 14 Jul 6:30–7:30pm Free event

State Library of Queensland



The stories of plants and people are connected in countless ways. Humans have always needed and loved plants, but we have also caused untold destruction on environments around the globe.

In this fourth event in the series presented by State Library of Queensland and The Conversation, leading experts from around Au only in a couple of the articles. Stralia will inform and inspire audiences in a thought-provoking online discussion. Watch the livestream and register to receive your calendar reminder.

Panel

Join Eddie Game (The Nature Conservancy), Tanja Beer (Queensland College of Art), Prudence Gibson (UNSW) and Laura Skates (UWA) for a passionate discussion about

- people's interactions with plants across social, emotional, scientific and creative endeavours.
- what is the relationship between plant studies and the arts?
- what innovative methods can we turn to when cities need greening, environments need preserving, and humans find themselves unable to connect with nature?
- what role can technologies play in understanding plants and working towards sustainable futures?

This discussion is linked to *Entwined: plants and people*, an exhibition at State Library that celebrates and explores the complexity and beauty of plants.

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The Secret to Caring for the Outback

By Hannah Schuch, 6 Apr, 2021
(Environment, Environment & Science)
https://westender.com.au/the-secret-to-caring-for-the-outback/

***Dr Pippa Kern** is a freshwater and wetlands ecologist working with conservation not-for-profit Bush Heritage Australia on the Great Artesian Basin springs at Edgbaston Reserve in central Queensland. She shared what she believes might just be the secret to managing the bush for future generations.*

Pippa Kern has been fascinated about animal behaviour since childhood.

“I was drawn to working outdoors with animals since I was a kid,” she explains. “I always saw myself in a role where I was contributing to the environment. It gets tough working outdoors in the 43-degree heat but I definitely have the best office in the world. I get to work in some really beautiful places, all right here in western Queensland.”

Alongside other ecologists and land managers, Pippa works to keep the ecosystems found on Bush Heritage’s Edgbaston Reserve healthy.

Pippa Kern and Edgbaston Reserve Manager Rowan Hinchley watch a thunderstorm unfold (Photo by Peter Wallis)

For Pippa, working in Western Queensland is not only about getting down in the dirt with cute critters, it's about harnessing the strength of the community. "I love sitting down over a cuppa for a good honest chat about how we're going to work together."

Pippa works with Edgbaston's neighbours, local sheep and cattle graziers, and with the Traditional Owners of Edgbaston. She says the secret to managing the land for future generations comes down to Queenslanders working together.

If we don't look after what we have, Pippa says, we will not only negatively impact the bush but our livelihoods and the country that we share. "Everyone has a role to play. Floods and fires have human consequences so we all have to do our bit. In the end we're all stewarding our patches of the bush."

Pippa says the secret to ensuring the bush is kept healthy for future generations is breaking down the barriers between landholders who are managing the land for conservation purposes and those who are running businesses. At the end of the day, everyone is after healthy country and pasture. "Dialogue is key."

Edgbaston Reserve is a nature refuge, or protected area on private land. This means it is protected through a covenant and an agreed management plan with the Queensland Government. Edgbaston is owned and managed by Bush Heritage Australia, with acknowledgement to the Traditional Owners of the area. 140 kilometres north west of Longreach, Edgbaston spans more than 8000 hectares incorporating the Mitchell Grass Plains and Desert Uplands. It protects 27 regional ecosystems, including two ecosystems listed as 'endangered' and six as 'of concern' and is home to a number of artesian springs.

The critically endangered Red-finned Blue-eye fish (image by Peter Wallis)

These springs, fed by water travelling hundreds of kilometres beneath, host a rich variety of plants and animals, some of which are not found anywhere else on Earth. One species is the Red-finned Blue Eye, a tiny freshwater fish about the size of a matchstick.

"Without our work to protect them, this species would be lost."

Over the past three years, Pippa has led a captive breeding program on Edgbaston to boost numbers of the Red-finned Blue-eye population which was on a "knife edge" when Bush Heritage purchased the property in 2008. Her hard work has paid off. She recently translocated some captive bred fish to wild springs for the first time.

"The population had declined significantly due to the invasive fish species Gambusia which basically pushed Red-finned Blue-eye to extinction in some springs. We had one wild population remaining so we had to implement some urgent conservation measures to make sure we didn't lose the species."

Pippa sees the Red-finned Blue Eye as a key piece to the puzzle in keeping the property healthy and resilient into the future. Healthy populations of the fish on Edgbaston means good overall landscape management.

"Losing numerous species would negatively impact the resilience of the bush and these incredible ecosystems. An environment that is not resilient has consequences for everyone from farmers to consumers, coast to desert."

*(Pippa no longer works for Bush Heritage Australia. This article was supplied by **Our Living Outback**, which is advocating for better funding for protected areas on private land, national parks and land management jobs.)*

Materials engineer named CSIRO's new chief scientist

By Jonathan Bradley, 1 July, 2021

Almost 30 years after beginning her career at the CSIRO as a research assistant, Dr Bronwyn Fox is returning to Australia's national science agency.

This time, though, she is doing so as the organisation's chief scientist. Dr Fox, a materials engineer who was most recently Deputy Vice-Chancellor (Research and Enterprise) at Swinburne University of Technology, credits the CSIRO for first stoking her interest in engineering.

"I was working at CSIRO after my [chemistry] degree, and I could see that the engineers were making things and testing them, whereas I was doing chemical experiments that weren't necessarily always working," she said.

"I just wanted to make things and break them, then collect data. That was what really got me interested in engineering."

Returning to study, Dr Fox enrolled at the Australian National University (ANU) to complete a PhD specialising in carbon fibre composites. "They're a combination of chemistry and engineering, and it just happened to be a really good fit for my interests," she explained. "There was some new composite activity that had just started at ANU…" Carbon fibre composites are a class of extremely strong yet lightweight fibre-reinforced plastics that are used in anything from passenger aircraft to Formula One motor racing.

"These materials have transformed the way we look at transportation and have applications in automotive and aerospace," Dr Fox said.

Dr Fox has driven many improvements in advanced materials throughout her career, helping to make the carbon fibre composites easier, faster, and cheaper to produce, as well as collaborating with major companies including Boeing, Siemens, Ford and Daimler. She was also founding research director of Carbon Nexus, a Deakin University facility that develops new technologies, processes and products using carbon fibre.

Following that, she joined Swinburne as Director of the Factory of the Future, a dedicated space for research and teaching in manufacturing and design-led innovation. She then became founding Director of Swinburne's Manufacturing Futures Research Institute, which focuses on Industry 4.0 — a revolutionary approach that applies digitalisation to the manufacturing sector.

Although she finished her role as research assistant at the CSIRO in 1996, Dr Fox has worked with the organisation over the years. “It is wonderful to return to CSIRO as Chief Scientist after starting as a 22-year-old research assistant, and to be able to champion science research and capability, working with industry and fostering STEM careers,” she said.

As well as her position at Swinburne University, Dr Fox is also Chair of the Australian Academy of Technology and Engineering (Victorian Division), a Fellow of the Academy of Technological Sciences and Engineering (ATSE), a Fellow of the Royal Australian Chemical Institute (RACI) and a Graduate of the Australian Institute of Company Directors (GAICD). In 2018, her achievements were recognised by the Global Congress on Manufacturing and Management, which bestowed on her its Research Leadership Award.

The climate crisis is a crime that should be prosecuted - excerpt

By Mark Hertsgaard 30 Jun 2021 https://www.theguardian.com/environment/2021/jun/30/climate-crisis-crime-fossil-fuels-environment (Courtesy of Guardian News & Media Ltd)

The Guardian is sharing stories in its Climate crimes series with Covering Climate Now, a global news collaboration of more than 400 news outlets

Fossil fuel companies lied for decades about climate change, and humanity is paying the price. Shouldn’t those lies be central to the public narrative?

Every person on Earth today is living in a crime scene. This crime has been going on for decades. We see its effects in the horrific heat and wildfires unfolding this summer in the American west; in the mega-storms that were so numerous in 2020 that scientists ran out of names for them; in the global projections that sea levels are set to rise by at least 20ft. Our only hope is to slow this inexorable ascent so our children may figure out some way to cope.

This crime has displaced or killed untold numbers of people around the world, caused countless billions of dollars in economic damage and ravaged vital ecosystems and wildlife. It has disproportionately affected already marginalised communities around the world, from farmers in coastal Bangladesh, where the fast-rising seas are salting the soil and slashing rice yields, to low-income residents of Houston, Chicago and other cities, whose neighbourhoods suffer higher temperatures than prosperous areas across town.

This crime threatens today’s young people most of all and calls into question the very survival of civilisation. And yet, the criminals responsible for this devastation are still at large. Indeed, they continue to perpetrate their crime, and even make money from it, not least because their crime remains unknown to most of the public.

It’s enough to make your blood boil, especially if you’re a parent. My daughter just turned 16, and I’ve been thinking about the safest place she can spend her adult life since she was a baby and I first started writing about adapting to climate change. The orange skies blanketing her home town of San Francisco after last summer’s record wildfires were a heartbreaking, infuriating sign that California will not be that safe haven.

The crime in question is the fossil fuel industry’s 40 years of lying about climate change. Arguably the most consequential corporate deception in history, the industry’s lies have had the effect of blunting public awareness and governmental action against what scientists say is now a full-fledged climate emergency. As a candidate in 2020, Joe Biden said he would support efforts to prosecute the oil giants for their lies. It remains to be seen whether he will keep that promise.

Journalists have dedicated years to documenting the crime scene evidence. Then in 2015, the Los Angeles Times, Inside Climate News and the Columbia Journalism School blew the case open by tracing the crime link to ExxonMobil, then the world's largest oil company.

Internal records showed that by the late 1970s, Exxon's own scientists were briefing its top executives that manmade global warming was real, potentially catastrophic and caused mainly by burning fossil fuels. Climate activists seized on the revelations, launching the hashtag #ExxonKnew.
Further investigations found that Chevron, Shell, BP and other oil giants likewise knew that their products threatened to render the Earth's climate uninhabitable. In short, it wasn't just that Exxon knew. They all knew. And they all chose to lie about it.

It's long past time to right these wrongs. To date, the oil companies, the executives in charge of them, the propagandists they've employed and the politicians they've funded have largely escaped blame, much less had to pay – whether through financial penalties or prison time – for the immense damage they have done. News outlets also owe the public an apology for mishandling this story, along with a commitment to doing much sharper coverage in the future.

Humanity cannot get back the 40 years lost to big oil's climate lies. It is now beyond urgent that rich and poor countries alike quit fossil fuels in favour of renewable energy and other climate-smart practices. Equally crucial, we must fortify our communities against the fearsome climate impacts that, because of our decades of delay, can no longer be avoided.

All this will cost money – lots of it. The world's governments will be arguing from now through the make-or-break UN climate summit in November about who pays how much. Restoring big oil's lies to their rightful place at the heart of the climate story would offer an answer to that riddle, one that Joe Biden should be pressed on: big oil knew – shouldn't big oil pay?

Members Awards, Newsletters and Media

Happenings at The Royal Society of Queensland

Extended manuscript deadline for *Proceedings* 129
Royal Society of Queensland's Honorary Editor **A/Prof Julien Louys** has extended the deadline for manuscripts for the 2021 edition of the annual Proceedings for a month **until 31 July**. He has advised that he does not yet have enough submissions to make up a full volume.

The Call for Papers is available online and members are urged to distribute that flyer amongst their colleagues and science networks as widely as possible. Authors are required to adhere to the *Guide to Authors* which outlines the style for formatting and referencing.

Origins science
Aeronautical engineer **Phil Andrews** has supplied a revised version of his paper arguing that science cannot adequately delve into the origins of the universe because its standard method based on repeatable experimentation cannot be applied. The paper is available on the Society's website (updated version 23 June). See also Phil's own website https://originsscience.com/ on which he has posted a survey form that QSN members are invited to fill out.

Phil has offered to lead an online discussion with others interested in philosophy, the nature of science, evolution and palaeontology. Would anyone who might be willing to participate in a zoom hook up on this subject later in July please contact Phil to register their interest.

Happenings at Australian Citizen Science Association

By Janine Bedros, ACSA-Qld Chapter Chair

Dear ACSA-Qld Chapter Members and Supporters
As events make a comeback around the state (well, most of the time!), ACSA-Qld's representatives have been enjoying meeting some of the people doing amazing things in Citizen Science.

We hope you enjoy reading the accounts of various events we have attended in this quarter's newsletter. We have found stall hosting to be a very rewarding experience, allowing us to interact with members of the public as well as researchers behind Citizen Science projects. We have met children with passionate interests, families actively engaged in their community, teachers wanting to stretch their students, aspiring scientists, and quietly curious adults.

If you enjoy meeting and speaking with people and are interested in helping at a future ACSA stall, or sharing a stall with us at an event, please contact us. We want to hear from you anywhere in the state, but particularly encourage our members beyond South East Queensland to get in touch with us. There are upcoming opportunities at World Science Festival Queensland events and the Peaks to Points Festival - details are in the newsletter below.

We also wanted to let you know that we have a new email address acsa.qld@citizenscience.org.au is branded with ACSA's website domain, and gives people greater confidence that they are corresponding with ACSA Queensland's official representatives. Our old gmail address still works, but you will start seeing our new address more as we gradually transition.

Happenings at the Queensland Frog Society

President's Report - Ashley Keune

As we are now heading into the cooler months many species of our amphibian friends will not be as active, but thankfully we can still find some frogs at this time of year. If you do hear or see frogs while out and about, don't forget that you can record your findings using the FrogID app. Take a look at the article below to learn more about this citizen science project and how easy it is to get involved.

One of our major events of the year was a display at the Queensland Garden Expo in Nambour from 9–11 July. This followed a successful presentation recently delivered in partnership with the Sunshine Coast Regional Council at the Mary Cairncross Scenic Reserve as part of the 'Meet the Cool Neighbours' exhibition, which focuses on amphibians and reptiles. You can still catch the rest of the exhibition as it's running until September.

We have requests coming in from all over the state for QFS to be involved in events and festivals, which are some of the best ways for us to disseminate valuable information about frogs and the environment to the general public. It would be great to be able to take advantage of all of these requests, but there are areas that we cannot currently service because the members that are usually involved in delivering these activities simply live too far away.

If you are interested in getting involved by giving presentations or manning displays for QFS at events or festivals, please get in touch with myself or Jono, our Events and Initiatives Coordinator.

Green Tree Frogs get trapped - Ray & Wendy Benfer

We'd like to raise our concerns regarding some first flush diverter systems used in the collection of rainwater. Problem units utilise a plastic ball, which acts as a valve to separate the first few litres of dirty roof and gutter runoff water (i.e., the 'first flush') from the later, cleaner water passing into the tank. To our knowledge, only Green Tree Frogs (*Litoria caerulea*) are affected. They become trapped beneath the plastic ball and subsequently drown in the stormwater pipe that collects the first flush water. It appears that removing the plastic ball can solve this problem, and this does not seem to compromise the quality of the collected rainwater. If you have this issue and don't want to remove the ball, you could fit a flap valve with a vent screen onto the end of the stormwater pipe where it discharges into the tank sieve (making sure no frogs are trapped inside). This latter system would need to be used in conjunction with a rainhead to prevent frogs from entering the system. This concern has not yet been brought to the attention of the main company manufacturing rainwater harvesting systems.

Happenings at Wildlife Queensland

Qld Budget 2021-22: Funding for Environment Welcomed But More Needed 25 June 2021

Wildlife Queensland welcomed funding for the environment in the recently released Queensland Budget 2021-22 but expressed frustration at the Queensland Government's stalled investment in the better management and expansion of national parks and private protected areas across the state.

During last year's election campaign, the Palaszczuk Government released a strategy to grow Queensland's protected areas to a "world-class" network and committed a "down payment" of $36 million over four years for new national parks and private protected areas.

Great Sandy Straight, Poona, Qld -image Berry from Getty images

Wildlife Queensland spokesperson, Des Boyland, said that while the 2021-22 Budget is an improvement over funding for the environment provided in the 2020-21 Budget, it is well short of what is required to arrest the decline in biodiversity, let alone reverse the trend.

"Wildlife Queensland was hopeful that funding would be made available to buy back licences from commercial fishers in state marine parks, the Great Sandy Marine Park in particular, as well as additional funding allocated for national parks and protected areas on private land."

“However, whilst we would have liked to see more funding allocated to these key areas, we commend the Hon. Meaghan Scanlon Queensland Minister for the Environment and the Great Barrier Reef, Minister for Science and Youth for her efforts with the Budget.” Mr Boyland stated.

2021-22 BUDGET HIGHLIGHTS

The Budget delivered significant funding addressing climate change strategy across various portfolios.

- An additional **$1.5 billion** boost to the $500 million Renewable Energy Fund with $35 million for a Natural Capital Fund to facilitate co-investment to achieve environmental outcomes and $25 million for the Land Restoration Fund Round 2.
- One allocation that sounded alarm bells for Wildlife Queensland was **$22 million** for a business case for the proposed Borumba pumped hydro scheme located on Yabba Creek in the Sunshine Coast Hinterland. Should this scheme proceed additional pressures and threats to our wildlife and habitat will be a by-product.
- Significant funding was made available for renewables.

Funding allocated to the Department of Environment and Science:

- The Great Barrier Reef was a big winner with **$527 million**s in addition to existing funding for enhancing water quality.
- The Queensland Waste Management and Resource Recovery Strategy has been boosted with an additional **$24.2 million** annually.
- **$5.6 million** towards the delivery of the buildings and park infrastructure to support visitor recreation, management and access of parks and recreation areas jointly managed by traditional owners and departments.
- At least **$4.3 million** will be invested in high priority land acquisitions for the expansion of the protected area estate. It is rumoured three properties will be acquired, one in Cape York and two in western Queensland. This should be publicly confirmed by October 2021.
- **$3.8 million** has been allocated towards the replacement of major vessels for marine parks management.

More Funding for our Protected Area Estate

Send an email to your local MP and the Hon. Meaghan Scanlon MP, Minister for the Environment and the Great Barrier Reef and Minister for Science and Youth Affairs to say **we need more funding allocated to our Protected Area Estate, particularly our national parks, to help arrest the decline in biodiversity.**

Allied Communities activity

Sustainability and Science Showcase, Queensland Museum 13 June 2021

By Caitlin Syme, Office of the Queensland Chief Scientist

The Sustainability and Science Showcase was a community outreach day held in South Bank on Sunday 13 June, to celebrate the inaugural global Sustainability Research and Innovation Congress 2021 (SRI2021), 12-15 June, to foster sustainability knowledge and practice around the world. The community were able to meet some of Queensland's leading organisations, researchers and businesses at the forefront of sustainability research and community education, with talks on creating a healthy environment for local flora and fauna to thrive, how to reduce waste in the home, and Australia's progress on the UN Sustainable Development Goals including climate action.

The ACSA Qld Chapter held a stall to talk to the community about citizen science in the sustainability space.

It was great to see so many citizen science groups with their own stalls at the event:

- Birdlife Southern Queensland: Powerful Owl Project and more
- Brisbane Catchments Network Inc: Brisbane's Big Butterfly Count
- Bulimba Creek Catchment Coordinating Committee: Nest box monitoring program and more
- Conservation Volunteers Australia: Marine debris and beach litter collection
- CQUniversity: Seaflowers seagrass restoration project
- Metro South Health: Zika Mozzie Seeker and QUT Mozzie AR app
- Queensland Trust for Nature: C4RE (Citizens for Refuge Ecology) Camps and more
- Questagame: QuestaGame Eco-Hunt
- QUT: Virtual Reef Diver
- SCF Australia: Recreational Fishing Citizen Science program
- University of Queensland: Soils for Science, and Study Fresh

In total, there were over 20 sustainability-themed activity providers and stall holders, including Geckos Wildlife, Scribbly Nature and Art Workshop, and even Belgian Gardens State School who flew down all the way from Townsville to share their marine debris collection project and sustainable clown fish breeding program.

Congratulations to everyone involved, and thank you to Janine Bedros, Michelle Neil and Luise Manning for helping in running the stall on the day!

Mozzie AR Toolkit & Zika Mozzie Seeker

By Jenn Seevinck

science communication *active* – to engage, educate and motivate primary school kids and community in environmental health and sustainable behaviours.

The toolkit comprises an Augmented Reality app for mobiles and creative STEAM paper-based workshops.

On Sunday, primary school kids, families, citizen scientists and community could view real mozzies through the microscope, find out about egg collection and get involved as citizen scientists. They could interact with the Mozzie AR app on IPad, role-playing 'junior scientists' to move around the Whale Mall and 'detect' virtual mosquitoes and breeding habitats and remove them virtually – by tipping out virtual stagnant water!

Younger children enjoyed the mozzie life-cycle sticker worksheet and people created *Rainbow Fish* origami toys – to catch and eat the larvae! The Mozzie AR toolkit meets grade 4 and 5 science and technology curriculum requirements and was funded through an Advance Queensland Science Engagement grant, QUT Design Lab, and in-kind partner contributions. You can find out more about the Mozzie AR toolkit on the project website site and the app video. You can learn more about the ZMS citizen science project on their website.

Academy of the Social Sciences in Australia turns 50

The Academy was formally incorporated on 7 July 1971 by members of the Social Science Research Council (SSRC). The SSRC in turn was founded in 1942.

As Academy Fellow and Past President Professor Stuart Macintyre explains in *The Poor Relation: A History of Social Sciences in Australia*, the Academy was established to pursue a new vision of the social sciences; 'sharing a common purpose and method [and] marking out a distinctive domain of knowledge... [which] met important needs and augmented national capacity' (2010: 51). The Academy's legacy of recognising excellence in social science research and developing sound evidence-based advice stands strong today.

Annual Symposium

The Academy's 50th Anniversary Symposium will be held in Canberra on 22-23 November, 2021. The Symposium will explore the future of Australian society with experts from academia, government, business, policy, and civil society tackling the big questions shaping our lives.

Can Australia overcome the social upheaval of COVID-19 to create a more just and healthy country? Can we achieve meaningful reconciliation with First Nations peoples? Can we ensure a productive and innovative society in the face of the changing nature of work? Can Australia be a world leader in addressing climate change?

Our speakers will consider these and other questions, with a mind to coming up with evidence-informed policy solutions. Taking lead from findings in the *State of the Social Sciences* report, the Social Future of Australia will illuminate the role of the social sciences in addressing these important questions and meeting these emerging social challenges head-on.

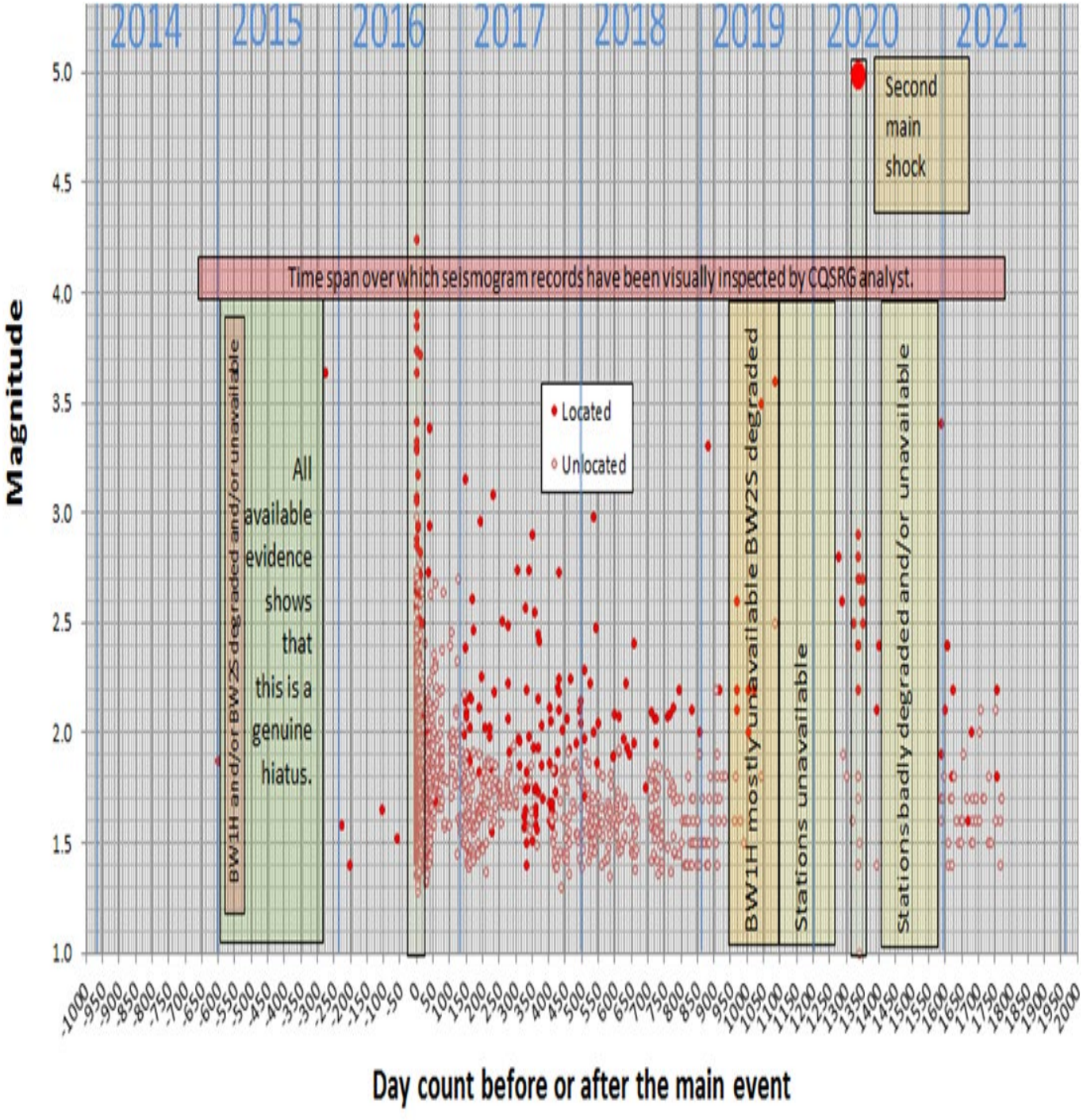
Community Data Collection Projects and Digital Apps

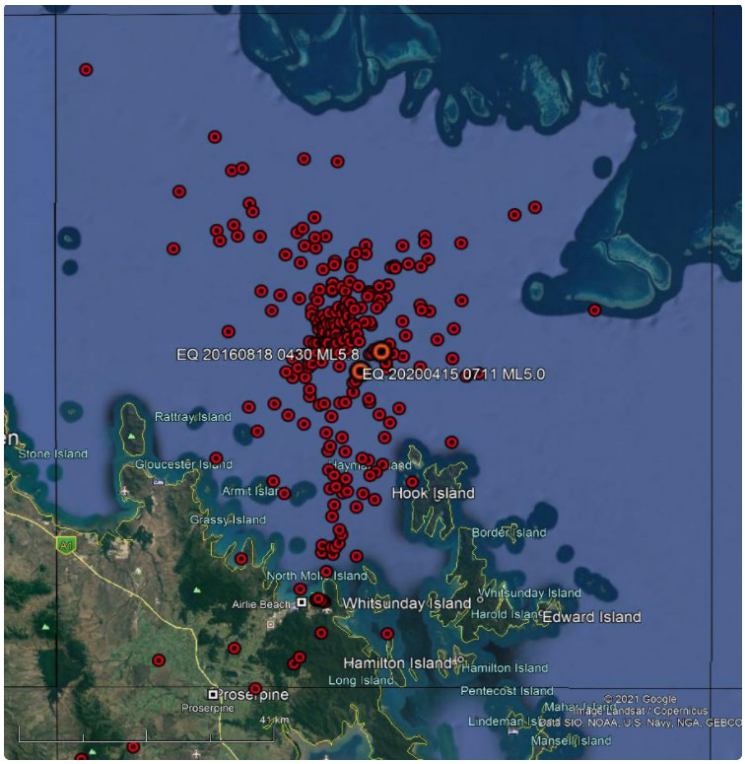
The most recent plot of Whitsunday Passage earthquake reactivation series (June 2021).

By Mike Turnbull, Central Queensland Seismology Research Group (CQSRG), 2/7/2021

CQSRG (pronounced CQ Surge) monitors for aftershocks of the Whitsunday Passage 2016 ML5.7 earthquake. The following graph is updated regularly to show the progress of the aftershock sequence over time.

The main earthquake occurred on Thursday 2016-08-18T04:30:08.43(UTC), Thursday 18 August 2016 at 2:30 p.m. local time. The graph shows the magnitudes of the aftershock earthquakes, and the number of days they occurred after the main shock.





The most recent event to have been catalogued by Geoscience Australia in the aftershock area prior to the main earthquake was an ML 3.6 on 18 November 2015. However, CQSRG is currently scanning the records in the months prior to the main event; and, as precursor events are detected and located, they will be added to the graph.

There is a map of the earthquake aftershocks that have been located down under the graph.

Last updated 1 July 2021 by Mike Turnbull

Mike is a "Citizen Seismologist" and Member of the Royal Society of Queensland and Seismological Association of Australia

Tapping local knowledge to save a Papua New Guinea forest

Chris Woolston *Nature* 594, 466 (14 June 2021) (https://www.nature.com/articles/d41586-021-01587-7

WHERE I WORK; Villagers who know the land help Jason Paliau to survey the region's insects.

Jason Paliau and local assistant Sammy collect ant specimens in a rainforest in PNG (Un-REDO Programme)

Jason Paliau is a lecturer at the Papua New Guinea University of Resources and Environment in Rabaul.

"It takes collaboration to get the full picture of a forest. Here, I'm teaming up with Sammy, a local senior-school student, to count and identify ants in a dense fragment of lowland rainforest. It's November 2019, when I was then a research technician with the New Guinea Binatang Research Centre in Madang, and we're near the village of Boredoa on the southern coast of Papua New Guinea.

"I'm impressed by the locals' knowledge of the forest and its inhabitants. It's important to get more villagers involved in forest surveys and other conservation efforts so that they can work to protect them."

"Papua New Guinea — a country that makes up the eastern half of the island of New Guinea — is home to one of the world's largest and most biodiverse rainforests, but mining and timber companies are taking a terrible toll. The areas beyond these trees have been heavily logged, and we're checking to see how life in this remaining forest is faring, from the ants to the trees."

“I grew up in the northern city of Lae, a place very different from this forest. I have formal training in forestry and entomology, but, unlike Sammy and other villagers, I don’t have the experiences and insights that come from a lifetime of living on the land.”

“Our ant survey was part of the National Forest Inventory, a project of the United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation. There are many places still waiting to be studied.”

“This forest is a hot, wet, challenging place to work. Villagers helped us to find relatively dry places to set up our tents. We had to wait for a break in the rain to set out our ant traps of tuna and fruit-flavoured drinks. In this particular sample, we identified six species, all native to the area. Introduced species such as fire ants and army ants have been taking over elsewhere in Papua New Guinea, but the local ants here have managed to hold on to their territory. For now.”

Empowering older people could be key to positive change

Lucien Wilkinson (25 June, 2021)
(https://news.curtin.edu.au/media-releases/empowering-older-people-could-be-key-to-positive-change/?utm_source=miragenews&utm_medium=miragenews&utm_campaign=news

A research team led by Curtin University has demonstrated the potential of older people to play a direct role in tackling community issues affecting them such as food security.

Published in *Health Promotion International*, **the research put study participants aged 51-87 in the role of citizen scientists as they attended subsidised community market days aimed at improving food security** and reported on the ways they thought the initiative could be changed to serve them better.

Lead researcher, Associate Professor Anthony Tuckett from the Curtin School of Nursing, said being able to afford and access food was an increasing problem for older people who were living longer and having to stretch their financial resources further.

“Initiatives such as subsidised community market days are increasingly important to bolster food security among older citizens yet there have been few attempts to understand these initiatives from the perspective of the community members, which is where our research came in,” Associate Professor Tuckett said.

“In the role of citizen scientists, study participants attended the market days, took photos and made voice recordings and written notes documenting the experience and recommending ways to improve the initiative, such as through changes to the process for sourcing and storing food and altering the market layout for better access.

“Together the participants discussed, collated and brought their findings to a public meeting with relevant decision-makers, including the market operators, a local councillor and a Foodbank representative, which resulted in several improvements to the market day being made.”

Associate Professor Tuckett said giving older people a voice on issues pertinent to them was important and having them in the role of citizen scientist was an impactful way of achieving this.

“Citizen science is a useful and feasible approach to engage older people in capturing data and advocating for change to ensure local initiatives meet the demands of the community they serve,” he said.

“Our research demonstrated their ability to bring about real change to the places they frequent and facilities they use, such as theatre and shopping precincts, streets, parklands, bikeways, care settings and in this case, a community market day.

“There is potential to implement similar projects that give older people a chance to bring meaningful change to their built environments, thereby tackling issues of concern improving their quality of life.”

The full paper, ‘Using citizen science to empower older adults to improve a food security initiative in Australia’ can be found online here.

DNA, citizen scientists used to track platypus through rivers, creeks in outback Queensland

Protecting the Platypus
Presenter: Tamielle Brunt
PlatypusWatch Network Project Officer,
Wildlife Queensland and PhD candidate, Uni of Queensland
Download the presentation [PDF 1.2MB]

The Wildlife Queensland’s **PlatypusWatch** Network and Upper Dawson Branch ran two workshops in the Taroom region on 26 June 2021 for community members who wanted to learn about platypuses and how they can get involved in an exciting citizen science project to document platypus populations and distribution in local waterways.

The free, two-hour workshops provided a fascinating insight into our iconic platypus, as well as information about Wildlife Queensland’s **PlatypusWatch** eDNA in the Dawson River project which aims to connect with the local community to educate and harness their knowledge and people power to help implement an ongoing program that will protect platypuses in the region.

The PlatypusWatch eDNA in the Dawson River Project is proudly supported by the Queensland Government’s Queensland Citizen Science Grant. Platypus ecologist **Tamielle Brunt** encourages residents to learn more about this unique mammal and its cryptic lifestyle while also learning science-based skills to observe and monitor platypuses in the wild.

“This project aims to determine platypus distribution in the Upper Dawson River from Baroondah through to Theodore. We are using the environmental DNA (eDNA) method which samples the water to detect platypus DNA to verify their presence or absence at sites along the river and its tributaries. This method has revolutionised the way we can monitor this elusive species to better protect it into the future, “says Brunt.

For more information, visit Wildlife Queensland’s PlatypusWatch Network web page at https://wildlife.org.au/platypuswatch/ or Facebook page https://www.facebook.com/PlatypusConservationNetwork.
Proudly supported by the Queensland Government – Queensland Citizen Science Grants.
Contact: Tamielle Brunt, PlatypusWatch Network Assistant Project Officer, Wildlife Queensland
Email: platypus@wildlife.org.au or Phone: 07 3844 0129

National Archives win $67m in urgent funding.

Troy Bramston**, 1 July, 2021** https://www.theaustralian.com.au/nation/politics/national-archives-win-67m-in-urgent-funding/news-story/b8c29d32904f448d9a84b99b0d3de9c8

The National Archives of Australia will receive a significant immediate funding boost to ensure documents, photos, maps, audio and film recordings that tell the story of Australia will be preserved for future generations and digitised to make them more easily accessible.

On Wednesday the Morrison government's Expenditure Review Committee approved $67.7m in new funding for urgent digitisation and preservation, additional staffing to speed-up access to records, and enhanced cybersecurity and digital record custody measures.

Attorney-General Michaelia Cash said the urgent funding recommended by the Independent Functional and Efficiency Review by former senior public servant David Tune would be provided over four years rather than the recommended seven years to ensure at-risk records are safeguarded without delay.

"This funding will be critical to preserving our history, the national treasures that define it, and increasing the public's access to it," Senator Cash told *The Australian*. Josh Frydenberg strongly advocated for the additional funding. The Treasurer's mother, Erika Strausz, fled Hungary's communist regime and was granted a certificate of exemption from the Immigration Act and declared "stateless" when she arrived in Sydney in 1950. The Archives holds the original of this certificate.

Mr Frydenberg read the Tune Review and met with the Director-General of the National Archives, David Fricker, for a briefing about records that are in danger of deterioration and permanent loss, and the funding required to preserve them, boost access and digitise the high value items.

An open letter to Scott Morrison, signed by more than 150 leading writers and researchers, also played a critical role in persuading the government to reverse a decade of underfunding. The letter was organised by Monash University's Graeme Davison and prominent writer and author Gideon Haigh. It was prompted by there being no funding increase to the archives in the May budget despite other collecting institutions receiving additional funding.

The National Archives is the custodian of Australia's official records. The collection comprises cabinet and departmental papers, military service records, immigration records and census data.

The Tune Review identified 11 million photographic negatives, prints and films along with 400,000 audio-visual items that were at risk of being lost because of deterioration and also because of ageing playback equipment. Magnetic audiotapes, photos and moving pictures on nitrate and acetate film are especially susceptible to deterioration. The Tune Review recommended an additional $167.4m to establish this initiative.

These include recordings of indigenous languages and ceremonies, native title legal proceedings, scientific research material, and ASIO surveillance footage. The new funding will allow these records to be digitised and better stored, cyber-secured, preserved and catalogued.

The funding boost approved on Wednesday will also allow for the development of the National Archives' 5th Generation Digital Archive that will provide for the transfer of records into their custody and ongoing preservation and digital access.

The Editor's excerpts from exceptional articles

Angus, the dingo protector (excerpt only)

Michael Slezak and Penny Timms **Photography:** Brendan Esposito **Digital production:** Leonie Thorne **ABC News Story Lab**

At the crack of dawn, cattle grazier Angus Emmott is preparing for work. A band of all-terrain vehicles and motorbikes assembles outside his homestead as two choppers land in a field. It's time to muster.

Fuelling up ahead of cattle muster Photo Brendan Esposito ABC News

The choppers and bikes will try to round up the cattle scattered across his 52,000-hectare property. He estimates there will be a few thousand head of cattle, but won't know for sure until the muster is complete in a few days. It's hard work over sometimes rough terrain, but the team doing it seems thrilled by the challenge.

Angus's family has worked the same land for more than a century. But he's not your typical cowboy. He and wife Karen host a constant stream of scientists who study ecology around his property, as well as tourists, politicians and activists, who he hopes will help protect it.

At night he likes to retire to his shed, where he keeps more than 5,000 natural history books and a significant collection of animal remains. It's his personal museum.

He's also a serious photographer and helps his wife run a small tourism business and wildlife sanctuary. But perhaps the most controversial aspect of his life is something he doesn't do. He doesn't shoot dingoes.

Friends and family have come along to help Photo Brendan Esposito ABC News

I've always been very interested in biology — arid zone flora and fauna — what makes the world tick in this part of the world," he says. "So, I'd been reading up on the science and looking at the whole theory of how to have a healthy landscape, you needed apex predators." The idea is relatively simple: apex predators — things like lions, sharks, wolves and dingoes — suppress the number of some larger herbivores.

That has all sorts of flow-on effects, such as boosting the numbers of plants and the smaller animals that depend on

There are more than 5000 natural history books in Angus Emmott's personal museum Photo Brendon Esposito ABC News

them. Crucially for Angus, the dingo's herbivore of choice is primarily the kangaroo — the very pest responsible for eating the pastures his cattle rely on

"So, I said, 'Let's have a look at dingoes, let's have a look at what happens when we totally leave them alone'," he says. "And it's been a big success."

Angus says letting dingoes thrive has given him better pastures and, in turn, more control over how he stocks his land. "When it's getting dry, we can just sell our cattle and let the land rest until it rains," he says. "So, roos don't eat all the groundcover and we end up with healthy landscapes. With our beef enterprise, dingoes make us a lot of money. We actually have a property that's in better condition: we have no roos; we've got full control of our stocking rates and we've got more grass." He said.

He'll still kill a dingo if it attacks his cattle, but he says that happens less frequently once an established dingo pack forms. But how Angus manages the ecosystem on his property isn't entirely up to him. He's expected to play his part in pest eradication, and that includes working to control dingoes for all landholders.

It's a requirement under Queensland's Biosecurity Act (2014), though many landholders agree it is not a heavily enforced requirement. There is also a similar law in New South Wales. In the Northern Territory, dingoes are a protected species. Landholders can still kill problematic ones, though they do need a permit.

A similar rule applies in Victoria.

Angus Emmott agrees that freely allowing dingoes on a sheep station is not an option and targeted strategies are needed in those settings. But he believes Australia's largely one-size-fits-all approach to dingo management is ineffective and flawed.

He doesn't want to ban graziers from killing dingoes, but he does want the current approach of killing them at a landscape level changed. And Angus himself has authored a peer-reviewed paper about the benefits to his own property. In the early 1990s, dingoes were practically eradicated from his property. But his paper suggests that since allowing for a stable dingo population, the number of kangaroos, goats, and wild pigs has reduced and his pasture cover has improved, no matter the season.

A common sight in central west Queensland, "dingo trees" are used to communicate that there are dogs in the area. *Supplied: Angus Emmott*

So, he's started a new group called Landholders for Dingoes. He wants to use it to push for a new approach, and highlight the benefits of coexisting with the apex predator. "We've been baiting for 50 to 60 years and the problem is getting worse," he says. "We need to actually look at the science, look at hard data and look at a much more nuanced approach to how we manage dingoes across the Australian landscape."

Grant opportunities & Advertisements

The Royal Society of Queensland Research Fund – Round 4 Applications

Round 4 of The Royal Society of Queensland Research Fund is now open to receive applications, closing on 31 August 2021.

The fund is available for small scale projects and seed projects with a total value of up to $5000. The Trustees envisage one, two or three grants this year.

Guidelines have been refreshed this year to appeal to both citizen scientists who can gain the support of a recognised research institution, and postgraduate students. For further information, contact the Chairman of the Steering Committee, **Col Lynam**.

The policy guidelines as well as banking details for those who would like to contribute to the progress of science in this way are available in the Society's website https://www.royalsocietyqld.org/research/ .

2021 Advance Queensland Industry Research Fellowships

Applications are now open for the 2021 Advance Queensland Industry Research Fellowships as part of the Queensland's Government's vision of creating jobs and business opportunities in the future economy. The fellowships are open to Queensland-based PhD qualified researchers.

An important component of the program is that researchers must secure an industry partner. This is to ensure the research generated has real-life application, producing new technologies and innovations that have the potential to create jobs, attract investment to the state and position Queensland as a global innovation hot spot.

To apply for an Advance Queensland Industry Research Fellowship, visit Industry Research Fellowships. Applications close at 1pm on Monday 19 July.

Senior Ecologist vacancy

Advertisement

Royal Society of Queensland Member **Dr Anne-Marie Smit** has relocated to Port Macquarie as Environmental Business Manager & Principal Scientist for:

Biodiversity AUSTRALIA

Anne-Marie has a vacancy for a Senior Ecologist in her team. The position has been advertised on **Seek**, Job Advert https://www.seek.com.au/job/52581270 . The link is for the Port Macquarie location but Anne-Marie advises that there is some flexibility to negotiate location.

Please contact her on 04 2216 1594 for further information.

Contact: QSN Newsletter

Colleagues and QSN Newsletter readers,

This “Express” sixth edition, is witnessing more outdoor natural science activity. Virtual meetings haven’t vanished though – maybe committees will treat them as the norm?

Feel free to make contact, and signify your support by sending advices of diary-daters, photos, field project reports, student’s resources and citizen projects, **with links,** to me as “Editor - Queensland Science Network Newsletter”.

Do look up the other QSN RESOURCES information links and the FORTHCOMING EVENTS and appreciate the diversity of our projects. It is amazing! I hope you participated in some of the projects posted in today’s Newsletter, or, resolve to send me some info on your own personal field work discoveries.

Find out more about other CitiSci activities and societies by looking at their websites, located on QSN at Member Groups.

Any commentary on new topics to cover or graphics that enhance the comprehension of this great “co-operative” of scientific bodies, would be warmly received.

Contact Col Lynam (lynam@uq.edu.au) or (newsletter@scienceqld.org.au) or through “**RECEIVE OUR NEWSLETTERS**” on https://scienceqld.org/ or by Facebook “MESSAGE” https://www.facebook.com/QLDScienceNetwork/

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