

protected

Magazine of National Parks Association of Queensland

A PILOT: CONSERVATION AND TOURISM IN THE QUEENSLAND GRANITE BELT

PLUS

**WHY WE CARE: PERSPECTIVES ON
COASTAL WETLANDS**

ALSO FEATURED

Green Space and Mental Health
Remembering Thomas Lovejoy
Bowling Green Bay National Park
Greater Glider
Ranger spotlight



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Editor Samantha Smith

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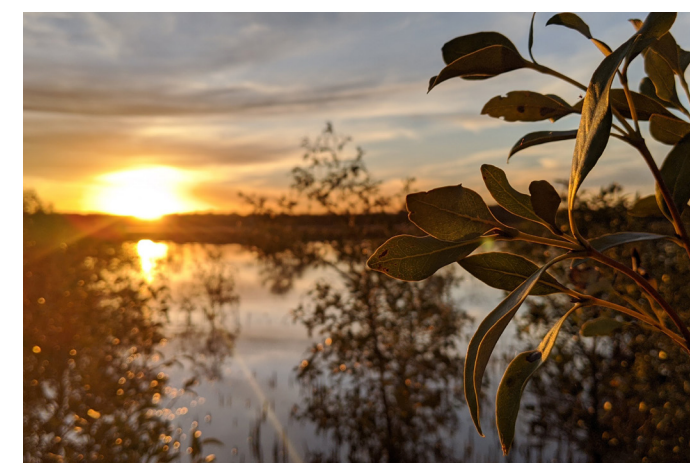
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Photo: Adelaide Burstow (supplied)



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FROM THE PRESIDENT



Susanne Cooper

Hello – and an interesting development to start off the year.

Should we place a financial value on nature – and assess the \$ contribution it makes to our economy? Yes on both counts, according to a new initiative on the New York Stock Exchange, which has established a new class of publicly traded assets called Natural Asset Companies (NAC's). These focus on protecting, restoring and expanding natural terrestrial and marine ecosystems, including forests, grasslands, wetlands and coral reefs.

They hold the rights to the ecosystem services such as pollination of crops, water quality, carbon sequestration and soil productivity produced by lands in a natural, working or restorative condition. Globally, these ecosystem services are valued around \$125 trillion annually, which highlights the financial potential of this asset class that is solely based on biodiversity and environmental condition. There has been considerable work to develop an accounting framework to measure ecological condition and performance.

Some of the investors or partnering organisations include the WWF, BirdLife International, New York Stock Exchange, Inter-America Development Bank, Conservation International and The Rockefeller Foundation. Quite a varied list.

Some of us may have

reservations about nature and biodiversity being given a monetary value and traded on the stock exchange. However, this initiative is of interest as it could be transformational - by showing that natural ecosystems are not simply a cost to manage, but instead are an essential and productive asset that invites investment which generates financial capital and a source of wealth for governments and their citizens.

It is relevant to NPAQ as too often State and Federal governments see investing in national parks and other protected areas as a cost to the budget, rather than securing and protecting an essential asset that will pay multiple dividends into the future. It is interesting that the financial and investment sectors have recognised the value and potential for returns on investment well before most governments.

This could trigger a substantive shift in how our natural environment is valued. It also

highlights that the health of our natural ecosystems is the very foundation of our economies, livelihoods and quality of life worldwide. In addition, it will help to forge a global focus and attention on the importance of biodiversity to not just our health and quality of life, but to our continued existence.

This also demonstrates how our thinking, priorities and what we value are changing internationally. It won't solve the global decline in our biodiversity (ecosystems have estimated to have declined globally in size and condition by 47% compared to estimated baselines), but it may generate further investment and commitment to protect and restore nature.

Perhaps this is an optimistic assessment, though we will watch its progress with interest.

I hope you are faring well during the unpredictable and extreme weather we've been having over the past month.



Photos Banner : *Tetragonula carbonaria* (Australian stingless bee) - Samantha Smith
Photos Inline : *Grevillea* ('Wattlebird Yellow') - Samantha Smith

SHARE YOUR PHOTOS

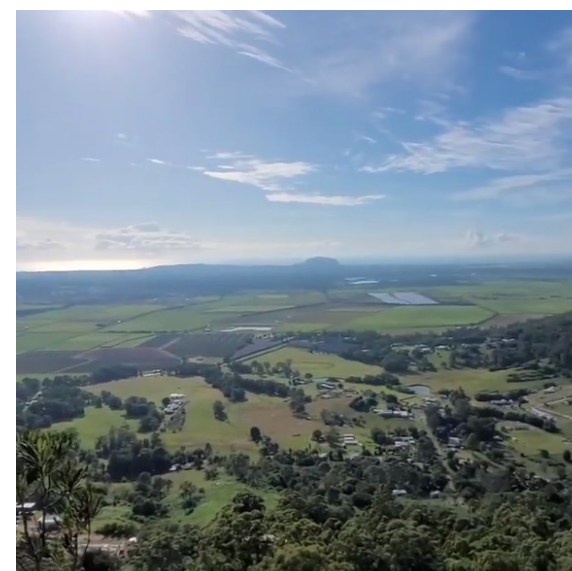
Do you have photos from a visit to a national park or protected area? Send them to admin@npa.org.au or connect with us on Instagram [@nationalparksassocqld](https://www.instagram.com/nationalparksassocqld) for your chance to feature in the next edition of NPAQ's PROTECTED Magazine! The best photos will also be featured on NPAQ social media channels and go in the draw to win some awesome NPAQ prizes*.



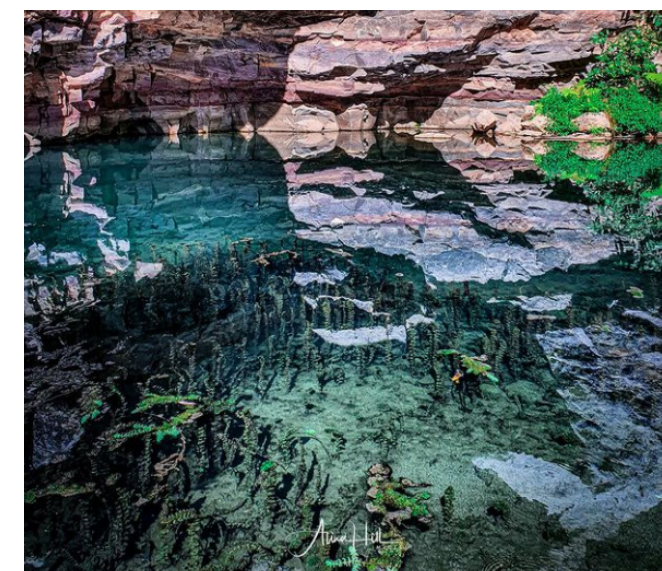
Mictyris longicarpus (Soldier Crab)
Samantha Smith



Alisterus scapularis (Australian King Parrot)
Mitchell Prior (@mitchellprior - Instagram)



Mt Ninderry
(@ the_rewarding_burn - Instagram)



Carnavon Gorge National Park
Ally Hill (@ally_hill_hikes - Instagram)

CONSERVATION AND TOURISM IN THE QUEENSLAND GRANITE BELT

- Adelaide Burstow

Introduction

Queensland's national parks are a valuable resource, intrinsically giving space for other species with which we share the planet, benefiting the physical and mental health of visitors, providing opportunities for Traditional Owners to participate in stewardship and boosting the local economy by attracting tourists and supporting business.

These benefits were recognised by the State government when a goal to ensure 17% of Queensland's land area would be protected. This is reinforced in the objectives in the Queensland Protected Area Strategy released in October 2021, which is in place until 2029. Recently the government announced the addition of 'The Lakes' (some 35,000ha of high value land/wetlands) is being added to the Protected Area Estate. Obtaining Wyss foundation support for the purchase of 'The Lakes' is an innovative approach given the contest for land across the state and the cost of achieving 17% well managed protected lands. While this addition is highly valuable, Queensland's current protected land area percentage sits around 9%. As such, there is still some way to go.

NPAQ has been partnering with the Granite Belt Sustainable Action Network and the Protect the Bush Alliance in proposing an expansion of the Protected Area Estate in the Granite Belt which will contribute to the 17% target, and, increase economic returns for the region through nature-

based tourism. Increasingly it is being recognised that natural areas appeal to the modern tourist and long term management of natural values can support a long term nature-based tourism industry. Nature-based tourism is central to the Queensland tourism industry going forward with a new focus on "travel for good", (Tourism and Events Queensland, 2021). As such, long-term sustainable tourism requires well-managed/well-presented national parks. This proposal is seen as a pilot that could be replicated in other parts of the state.

A Resource document and Business Case have been drafted and shared with local government, state government, DES and the tourism industry, and they have given positive feedback. Below is a summary of the values of the Granite Belt, the opportunity to enhance its protected areas, and the potential tourism benefits to the region.

Values of the Granite Belt

The region has significant conservation value and its proximity to Brisbane and other regional centres makes the Granite Belt a popular location for nature-based tourism. Girraween, Main Range and to a lesser extent Sundown



National Parks are major tourism draw cards. Further, nature-based tourism is a rapidly growing industry, and the Southeast Queensland population is seeking new, authentic experiences and activities.

Values of the Granite Belt Region are summarised below:

- 80% of the region's land is considered to have state biodiversity significance.
- It has a high level of nature connectivity value with 2 corridors of state significance and several of regional significance.
- It supports 4 endangered regional ecosystems.
- 240 bird species have been recorded.
- It provides habitat for several endemic species with limited distribution e.g. the Spotted-tailed Quoll (*Dasyurus maculatus*) and Cunningham's Skink (*Egernia cunninghami*). As well as several threatened plants including *Boronia granitica*, *Boronia repanda*, *Grevillea scortechinii* subsp *scortechinii* and the Dalveen blue box (*Eucalyptus dalveenica*).
- It supports at least 66 species considered Critically Endangered, Endangered, Vulnerable and Near Threatened and under the Queensland Nature Conservation Act 1992 or the Commonwealth Environmental Protection and Biodiversity Act 1999.
- It has the ability to provide climate change refugia and provides

ecosystem services.

- The granite and traprock characteristic of the region provide an appealing setting with spectacular outcrops, cliff and erosion resistant boulders.
- The region can provide a diverse range of nature-based activities.

Nature-based Tourism ADD SDRC Strategic Plan reference

In addition to visiting vineyards and enjoying the scenery visitors to the Granite Belt enjoy bushwalking, camping, birding, bouldering, orienteering, cycling and photography. The existing national parks in and near the Granite Belt are at times at capacity, especially during spring and school holiday periods, and the reduction in visitors to Girraween following the 2019 fires demonstrates how the presentation of Parks can affect visitation. As such, the connection between well-presented and managed protected areas and a strong long-term tourism industry must be made. These goals are in line with the objectives of the 2017 Southern Downs Regional Tourism Strategy which aims to increase tourism visitation by 25% by 2027 (984,000 visitor p.a. By 2027). % targets were set to achieve this one of which is to develop quality product, event and experiences.

This region is an ideal location to pilot a collaborative approach to strengthen nature-based tourism and enhance the resilience and security of protected areas.

The Proposal (anticipated timeframe 2027-2029)

The proposed actions to be taken for this proposal include:

- Ensuring long term connection of Girraween and Sundown National Parks by protecting the Roberts Range area.
- Transitioning Broadwater and areas of Passchendaele State Forests to conservation and recreational tenures.
- Rehabilitating logged areas in Passchendaele State Forests with native vegetation and operation of an associated carbon credits scheme.
- Establishing three new ranger positions to ensure quality of protected areas is maintained.
- Rescinding the Resource Reserve in Sundown and include it within the national park.
- Planning an optimisation of future nature conservation and tourism potential, with traditional owners and the local community.
- Establishing a border walking trail along the easement of the NSW-QLD border.



Photo Banner & Inline: Granite Belt (Provided) - Adelaide Burstow

The Economics

Our research suggests that a capital investment for this proposal of around \$6.6 million and an additional operating budget of \$792,000 per year would deliver at a minimum an additional tourist spend of around \$1.7-2.6 million per year in the region and may attract similar capital co-investments. In addition, the overall concept of this proposal is supported by the Granite Belt Sustainability Action Network, Southern Downs Regional Council and Granite Belt Wine and Tourism.

Conclusion

The proposed increase in the Protected Area estate will not only increase biodiversity protection in the area but also economic income. Implementing such a pilot would support the Southern Down's Regional Council Strategic Plan which places an emphasis on increasing tourism and strengthening the conservation estate of the region. It would also provide learnings for other Queensland regions.

WHY WE CARE: PERSPECTIVES ON COASTAL WETLANDS

- Tallis Martin-Baker

Tallis Martin-Baker grew up in Redland City, outside Brisbane, and discovered her love for mangroves in her first year of university while studying marine science. In 2020 she completed her Honours on the socioeconomic factors that contribute to coastal wetland conservation and restoration. She now works as a research assistant for the University of Queensland.

There is something about a mangrove forest: something about the dampened quiet, the calm, beneath which water gurgles, birds call, and mosquitoes buzz. Something about the smell – yes, the rotten-egg smell of anoxic sediments, something about the golden orb spiders strung between trees and the squelch of mud underfoot. Something within me quiets as I step into a mangrove forest.

I realise many people don't feel the same. Mangroves are the enemy: they stink and breed mosquitoes and ruin ocean views. Mangroves – and other types of coastal wetlands – have suffered from the perception that they are useless ecosystems, worthless, ugly, there to be removed, to make way for high-rise developments or sea walls. In the scientific community, this idea has since been dispelled – coastal wetlands are high value ecosystems, able to sequester many times the amount of carbon as a terrestrial forest, protecting coastlines from erosion, filtering the water that flows through a river, providing vital homes for juvenile fish.

And yet coastal wetlands are still in trouble.

For those who don't know, the term 'coastal wetlands' primarily includes mangroves, saltmarsh, and melaleuca ecosystems. Any ecosystem that exists with regular saltwater or brackish inundation can be classified as such. They are globally known to be important for biodiversity and ecosystem services. But that doesn't prevent them being cleared for development and other land uses.

Now, governing bodies are generally accepted to have responsibility for protecting these natural environments. And this is true. But governing bodies do not exist in a vacuum. Governments are voted in by a community, (theoretically) according to what the community wants. And, going in the opposite direction, a government's policy or decisions are made easier or harder by whether or not they align with the broader community's wishes.

This is evident in the developing world. Social scientists have been studying the influence of socioeconomics on community perceptions of the environment in developing countries, where management, monitoring, and compliance of environmental regulations is often less effective.

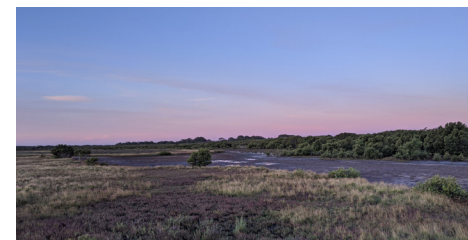
These studies, focussing on factors such as income and education and how they relate to community attitudes and behaviours, are intended to make the job of environmental governance easier for governments and NGOs in these countries. But when I started to wonder if the same principles

worked in countries like Australia, I realised that scientific literature on this topic was few and far between.

We can't simply pluck results from Tiwoho, North Sulawesi, and apply them to South-East Queensland. Or to Florida, or to Auckland. We do not understand how much we need coastal wetlands, in Australia, not in the same way a person in Cambodia might. We do not use them for firewood, we do not build our houses from them, we do not hunt the animals that live in them. Most of us do not watch the tropical monsoon waves throw themselves against our coastlines, only to dissipate on the mangroves, and know that without those mangroves we would be homeless, without the personal or national resources to rebuild our homes. Communities in developing countries exploit their coastal wetlands because they may have no other option but to starve or freeze. They may have no source of income but that which comes from selling the timber.

What do we do? We cut them down because we do not care. We cut them down because we would rather have luxury apartments or an ocean view. Ideas of community behaviour and attitudes that apply in developing countries cannot be applied worldwide.

Last year, I decided to investigate exactly how these ideas are different in our developed world. I thought that perhaps this could form a baseline for how we approach community attitudes and behaviours towards coastal



wetlands in developed countries. I approached it in a practical way – wondering which, if any, socioeconomic and community factors might actually influence coastal wetland conservation and restoration in South-East Queensland. These factors were: income, education, proportion of people identifying as Indigenous, proportion of people who spoke a language other than English in their household, number and size of protected areas and national parks, land use, nature connectedness, and number of Bushcare groups.

The results were quite interesting. I found that, over the past two decades, a higher proportion of people in a suburb identifying as Indigenous was associated with less coastal wetland loss. Given that Indigenous peoples can bring varying perspectives to land management, and traditional methods of land management are often more effective long-term, this was not a surprise. It suggests that people identifying as Indigenous may indeed bring important cultural approaches and perspectives into the broader community.

I also found that in areas where people had completed (on average) higher levels of education, we saw less saltmarsh loss, in particular. Saltmarsh is usually found on the landward edge of mangroves, at

least in Australia, and therefore can be more susceptible to development. My findings suggest that higher levels of education may reduce development – either because the community is more informed about the environmental impacts of development and fight development approvals, or because the elected members are more informed about the environmental impacts of development and don't approve it. This was, again, not a surprising result, but an interesting one.

A greater connection to nature also seemed to be associated with wetland conservation, specifically mangroves. While this may be expected, in reality the cause and effect are not so clear-cut. Higher nature connectedness is important for many conservation and restoration activities; however, previous studies show that nature connectedness will only have a direct positive effect if it translates into environmental action. And indeed, nature connectedness and number of Bushcare groups appeared to be correlated. Bushcare groups were associated with more coastal wetland restoration; however, whether Bushcare groups increased restoration effort, or government investment in restoration resulted in more Bushcare groups (which are often run by local councils) is something I couldn't determine from my results.

Someone asked me recently, why wetlands? Why mangroves? I struggled, briefly, to articulate it, having lived and breathed this subject for several years now. What I say to people, when

they ask, "why mangroves", is that mangroves provide so many ecosystem services. They sequester carbon, filter water, provide habitat, prevent erosion. My truth, however, is different. My truth is that mangroves – and saltmarsh, and melaleuca – are scientific marvels. They live in saltwater, in soil without oxygen. They live where plants shouldn't be able to live, and they thrive. But that truth doesn't float any scientific boats.

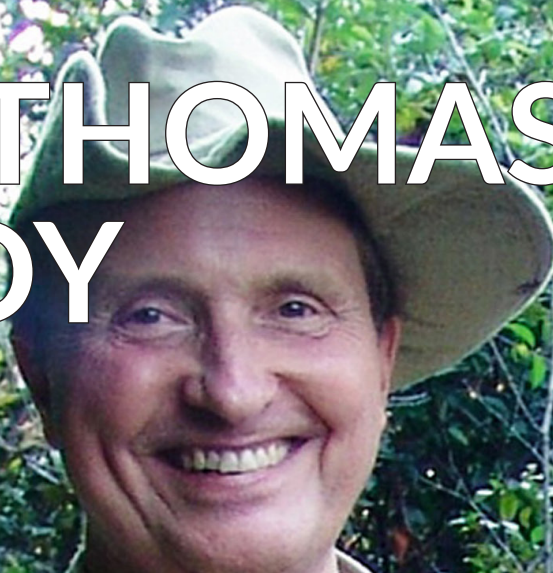
So I say to you, now: coastal wetlands provide many ecosystem services. In places where coastal wetlands used to exist, we must now build brick walls so our homes don't fall into the sea. Water quality in rivers has declined. Fishing stocks are struggling. But many people – so many – don't realise this. I wanted to know which people realised this, wanted to perhaps understand where coastal wetland conservation or restoration is likely to succeed because the local community realises this.

My project was on a very small scale. But it's a start.



Photo Banner & Inline : Tinchi Tamba - Jack Hill (provided by Tallis Martin-Baker)

VALE - THOMAS E. LOVEJOY



One of the world's most spoken about Conservation Biologists, Thomas Eugene Lovejoy III, died from a pancreatic neuroendocrine tumor on 25th December 2021 at the age of 80.

Thomas was born on August 22, 1941, in Manhattan, New York and was a renowned expert on biodiversity, tropical forests, and climate change who devoted much of his career to working in the Amazon Rainforest.

whilst working as a zoological assistant at the Yale Peabody Museum of Natural History, he earned a bachelor degree in biology at Yale University in 1964. He then completed his PhD at Yale on the ecology of Amazon forest birds in 1969.

Ten years after completing his PhD (1979), Thomas founded the Biological Dynamics of Forest Fragments Project (BDFFP) with Brazilian colleagues. The BDFFP aims to understand how habitat fragmentation affects Amazonian birds, bats, trees, vines, insects, and other elements of rainforest biodiversity. Today it is one of the world's largest and longestrunning ecological experiments, spanning some 1000 km².

In 1980, Thomas introduced the term 'biological diversity' to the scientific community which has since been shortened to 'biodiversity'.

Throughout his career, Thomas held highlevel positions with organizations such as the World Wildlife Fund, the Smithsonian Institution, Inter-American Development Bank, American Institution of Biological Sciences, the Society of Conservation Biology and the United Nations Foundation.

He also served as an environmental adviser to Presidents Reagan, Bush Sr., and Clinton and as chief biodiversity adviser to the World Bank, where he helped to strengthen environmental safeguards for World Bank-funded projects.

In 2001, Thomas was the recipient of the University of Southern California's Tyler Prize for Environmental Achievement and received the Golden Plate Award of the American Academy of Achievement.

The National Biodiversity Institute (INBio) named a new species of wasp, *Polycyrtus lovejoyi*, in honor of Thomas in 2004.

His next award was received in 2012, when he was awarded the Blue Planet Prize for being "the first scientist to academically clarify how humans are causing habitat fragmentation and pushing biological diversity towards crisis."

In 2016 Thomas was selected as the US Science ENvoy by the US State Department and in 2018, he helped to establish the Amazon Biodiversity Center.

Though majority of Thomas's career was based in Brazil, he also had a big impact in Australia.

Through political connections, he successfully influenced the development and implementation of national biodiversity policy and law and made public the linkages between climate change and biodiversity.

He directly advised the Commonwealth on which conservation projects to fund in the South Pacific and helped raise significant funds to conserve high-biodiversity-value land within Australia.

SAVE REDWOOD PARK

- Save Redwood Committee

As part of our campaign to get the Qld public onside to Save Redwood, we need to quickly alert Council as to Redwood Park's beauty and high biodiversity and the threat that competitive fast Olympic Mountain Bike tracks and their spectators are to it.

We have made a video that supports the campaign which can be accessed [here: https://www.youtube.com/watch?v=W5Mc8-QHUKc](https://www.youtube.com/watch?v=W5Mc8-QHUKc)

We also have an e-petition that will run for two months before being presented to the Minister for the Environment and Science and we need you to sign it.

<https://www.parliament.qld.gov.au/Work-of-the-Assembly/Petitions/Petition-Details?id=3707>

TO: The Honourable the Speaker and Members of the Legislative Assembly of Queensland

Queensland residents draws to the attention of the House that Redwood Park is a six minutes' drive from the heart of Toowoomba. Its 243ha forest comprises spectacular eucalypt woodlands and rare dry rain forest providing ideal breeding habitats for over 158 native bird species.

Disturbingly, Redwood Park is being promoted by the

Toowoomba and Lockyer Valley Regional Councils as the preferred site for a 30 kilometre expansion of the escarpment's network of downhill mountain bike tracks.

This commercially driven proposal is a major concern to the Queensland conservationists as Redwood is a world-class fauna and flora site. It is home to 218 species of bird, mammal, reptile and amphibian. At just 243ha it's 0.2% of the size of the Daintree National Park yet home to 50% of the total number of bird species found in the Daintree.

Redwood Park is habitat to the endangered Koala and five other threatened species: Powerful Owl, Black Breasted Button Quail, Greater Glider, Glossy Black Cockatoo and Grey Faced Flying Fox.

If the landscape changing sport of Mountain Biking takes hold of Redwood it will destroy the integrity of the park, spelling

the end of a refuge for fauna and flora. Moreover, its proud 100-year history as a safe, high value park for many bird watchers, bushwalkers & volunteer bush-carers will also end.

Your petitioners, therefore, request the House to intervene and stop this destructive proposal by declaring Redwood Park a National Park based on its undisputed proven high biodiversity values and high public amenity.

Let's stop the mountain bikes in Redwood Park and declare it a National Park for evermore.

Cheers and Thanks

Sandy on behalf of the Save Redwood C'mitte



Photo Banner & inline : Redwood Park (Sandy Brown)

ASSOCIATIONS BETWEEN GREEN/BLUE SPACES AND MENTAL HEALTH

- Mathew P. White^{1,2*}, Lewis R. Elliott², James Grellier^{2,3}, Theo Economou⁴, Simon Bell⁵, Gregory N. Bratman⁶, Marta Cirach^{7,8,9}, Mireia Gascon^{7,8,9}, Maria L. Lima¹⁰, Mare Löhmus¹¹, Mark Nieuwenhuijsen^{7,8,9}, Ann Ojala¹², Anne Roiko¹³, P. Wesley Schultz¹⁴, Matilda van den Bosch^{7,15,16} & Lora E. Fleming²

Living near, recreating in, and feeling psychologically connected to, the natural world are all associated with better mental health, but many exposure-related questions remain.

Using data from an 18-country survey (n= 16,307) we explored associations between multiple measures of mental health (positive well-being, mental distress, depression/anxiety medication use) and: (a) exposures (residential/recreational visits) to different natural settings (green/inland-blue/coastal blue spaces); and (b) nature connectedness, across season and country. *People who lived in greener/coastal neighbourhoods reported higher positive well-being, but this association largely disappeared when recreational visits were controlled for.*

Frequency of recreational visits to green, inland-blue, and coastal-blue spaces were all positively associated with positive well-being and negatively associated with mental distress. Associations with green space visits were relatively consistent across seasons and countries but associations with blue space visits showed greater heterogeneity.

Nature connectedness was also positively associated with positive well-being and negatively associated with mental distress and was, along with green space visits, associated with a lower likelihood of using medication for

depression.

By contrast inland-blue space visits were associated with a greater likelihood of using anxiety medication. Results highlight the benefits of multi-exposure, multi-response, multi-country studies in exploring complexity in nature-health associations.

Poor mental health is the leading cause of disease burden in high-income countries¹. This may, at least in part, be a consequence of rapid urbanisation^{2,3} and a growing disconnection from the natural world^{4,5}.

A growing body of research suggests that living near and/or maintaining regular contact with nature is beneficial for a range of health and well-being outcomes⁶⁻⁸, but several issues remain outstanding⁹.

First, there is a lack of clarity about the relative importance of merely living near nature, variously referred to as residential proximity, neighbourhood exposure or indirect contact¹⁰, compared to more direct interactions including deliberate engagement through recreational visits¹¹. Although some benefits to mental health and well-being may result from mere neighbourhood exposure, e.g. reduced noise and air pollution and lower temperatures, others are thought to derive from voluntarily spending time in natural settings for relaxation, meeting others, and/

or undertaking physical exercise^{10,12}. To date, the vast majority of studies have focused on residential proximity¹³ and although a positive association is sometimes reported with recreational visits^{14,15}, there is also evidence that many people rarely visit local nature¹⁶, while others travel, sometimes quite far, outside of their neighbourhood for exercise and nature-based recreation^{17,18}. Proximity is a far from perfect proxy for use.

Second, emerging evidence suggests that mental health may be non-linearly related to recreational exposure, with diminishing marginal returns beyond a certain threshold¹⁹. As with many other 'goods', it may be that the benefits of nature-based recreation become less pronounced with each additional visit. Greater clarity about the relative importance of residential exposure and recreational visits, as well as their potentially non-linear relationships, is critical in designing public health interventions that not only improve availability but also support the most appropriate levels of use, both locally and further afield.

Third, most research has operationalised nature in terms of 'green space' (e.g. parks, woodlands, street trees, vegetation cover) and under-explored the potential role of both inland-blue spaces (e.g. rivers, lakes)^{20,21}, and coastal-blue spaces (e.g. beaches, promenades)²², for mental health. Although green and blue spaces share many qualities (e.g. cooling

effects, biodiversity), blue spaces also offer alternative recreational activities (e.g. swimming) and have additional features (e.g. unique soundscapes)²³⁻²⁵. It is only through examining both in tandem that we will get a clearer idea of their relative potential benefits for mental health.

Fourth, the field has used a wide range of mental health metrics, including indices of both positive and negative mental health^{6,8,10,12}. Rates of poor mental health tend to be lower among populations living in greener neighbourhoods²⁶⁻²⁸, and one-of nature walks have been shown to reduce symptoms of anxiety/depression in at-risk populations^{29,30}. However, there has been relatively little large-scale research exploring relationships between voluntary, recreational time in nature and indicators of mental health^{11,19,31}. This is important because meta-analyses suggest that the benefits of direct nature exposure tend to have a larger effect on promoting positive emotions than reducing negative ones³², and thus it may be that indicators of positive mental health are more sensitive to recreational visits than negative ones. Again, this is best explored in studies that include multiple exposure metrics alongside multiple mental health outcomes.

Fifth, research suggests that psychological connectedness to the natural world, e.g. feeling part of nature or seeing beauty in natural things, is also positively associated

with positive well-being³³. Given that people high in nature connectedness also tend to report more recreational visits^{34,35}, any positive association between visits and well-being may be due to the underlying nature connectedness an individual has, rather than a product of the environment itself.

To unpack this possibility, more research is needed to explore the simultaneous relationships between exposures, nature connectedness and mental health, so that their unique roles can be identified.

Finally, there may be important seasonal and societal/cultural differences in the way nature affects mental health^{9,10,12}. For instance, most research using the Normalized Differential Vegetation Index (NDVI) as its measure of residential green space uses summer data, and applies it to health data for the whole year even though relationships may be different when leaf cover is lower in winter months¹⁰. Similarly, blue spaces may be better for mental health in summer/autumn when the water temperatures are higher³⁶. Living near and spending time in green and blue space is also likely to be quite different, for instance, in southern European countries than northern European countries. Not only are temperatures and vegetation different, hours of daylight vary substantially across the year potentially affecting time outdoors^{36,37}.

Results

Nature connectedness was positively associated with positive well-being, negatively associated with mental distress, and negatively associated with depression medication use.

The frequency of visits to green spaces was positively associated with positive well-being and negatively associated with mental distress and the use of doctor-prescribed depression (though not anxiety) medication. Extending previous research, those who made more frequent visits to both inland- and coastal- blue spaces also reported more positive well-being and lower rates of mental distress, even controlling for the number of green space visits.

Full report available at www.nature.com/scientificreports



Photo Banner & inline : Supplied (Samantha Smith)

PARK IN FOCUS

Bowling Green Bay National Park

- Vera Pajovic

Bowling Green Bay National Park is located about 25 km south of Townsville and covers 57,900 hectares of coastal and mountainous country. The Park extends from Cleveland Bay on the coast through to inland Mount Elliot and as a result features a wide range of habitats, from mangroves at sea level to rainforests on the mountain tops.

This incredibly diverse national park includes a wetland that has gained international recognition as a significant habitat for waterfowl.

In the summer months, at least 30 different species of birds migrate to the park from various parts of the world!

Mount Elliot is home to the Mount Elliot crayfish, which is critically endangered. It's the only place in the world where they are found.

The beautiful Alligator Creek flows through Bowling Green Bay National Park, and offers great spots for swimming, birdwatching or just to enjoy nature.

Fiona Lidgett is the owner of closely located Townsville Eco Resort, a lifestyle park that offers cabins, camps sites and a soon to come glamping facilities. Fiona and her team encourage all their guests to visit Bowling Green Bay, even if it's just for a little walk to the lookout.

"Guests often come back surprised about the sheer splendour of the park. They enjoy the undisturbed beauty

of nature and native flora and fauna," says Fiona.

"The Alligator Creek precinct is a birdwatcher's paradise plus it's the starting point of many hikes. From an easy 1km to the lookout to a challenging 17km return trek to the waterfalls, there is a hike for everyone. Plus, there are not many places in the world where you can swim in a river with turtles (yes, turtles!) and fish," Fiona adds.

The Alligator Creek area has picnic tables, shelter shed, gas barbecues and toilets, however it is currently undergoing an upgrade to improve facilities and make the area accessible to all members of the community including mobility-impaired visitors can enjoy the site. The works include new tracks and picnic facilities, additional vehicle parking, seating, viewing decks and enhanced access to Alligator Creek. The park is set to open on June 1, 2022.

Some tips for your visit to the Park:

- Take a camera as you are guaranteed to see amazing wildlife as well as stunning trees, plants and flowers
- Stay on the trail to preserve vegetation
- Make sure to pack your swimmers (and rock shoes if you have) as there are plenty of swimming holes to choose from.
- Take plenty of water, snacks, sunscreen, hat, and a container for your rubbish as there are no bins in the park.



Bowling Green Bay National Park is in close proximity to Townsville and even closer to Townsville Eco Resort. The park is easily accessible, the road is sealed and suitable for conventional vehicles. You don't need a 4WD. Directions: Just head south on the Bruce Highway towards Ayr and turn right onto Alligator Creek Road just passed the Caltex Roadhouse.

For more information on Bowling Green Bay National Park visit the Queensland Parks website: <https://parks.des.qld.gov.au/> and if you'd like to stay at Townsville Eco resort please visit <https://townsvilleecoresort.com.au/>

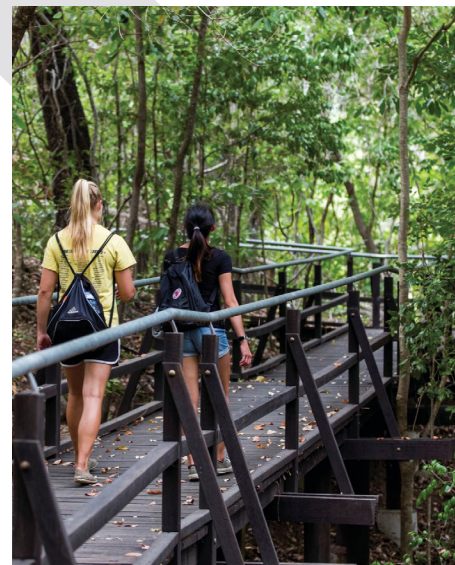


Photo Banner & Inline : Bowling Green Bay National Park - Vera Pajovic (Supplied)

WILDLIFE FEATURE

Greater Gliders

- Jessica Lovegrove-Walsh

Silently observing a darkened world from its lofty perch in the canopy of a eucalypt tree, the greater glider is the least vocal and most majestic of eastern Australia's gliding possums. Only the soft rustling of leaves or bright white eyeshine reflected in the beam of a spotlight gives these shy creatures away. As their names suggest, they are the largest gliding marsupial in the world, reaching almost two kilograms in weight and with an impressive tail that can extend over half a metre.

Greater gliders have huge fluffy ears and impossibly long bushy tails. They vary in colour from a pale white morph to a dark brown/grey, with a spectrum of intermediate colour forms. Some individuals may have white flecks on their ears and around their nose. Their distinct colouration, small home ranges and preferences for particular trees are useful for identifying individuals in the field. Home ranges can be as small as one hectare where resources are

plentiful, but may be as large as ten hectares in low productivity western areas. Territories are marked by secretions of their cloacal gland.

Like the koala, greater gliders feed on the leaves of species of Eucalyptus or Corymbia. Across their broad range in eastern Australia, many tree species are eaten, but local populations tend to feed on only two to three species. The largest trees in each area are typically preferred, as these old trees produce regular flushes of young leaf growth. Unlike their smaller gliding cousins, whose frenetic activity is fuelled by regular doses of nectar, pollen and sap, the low nutrient diet of the greater glider leads to a slow and languid lifestyle, more befitting their regal status.

Land clearing and fragmentation are two of the greatest threats facing greater gliders. The bushfires of 2019/20 placed additional pressure on populations already in decline, with around a third of all greater glider habitat in eastern Australia affected by the fires. As a result, they are now listed as endangered under both Queensland and national legislation. The greatest threat posed by vegetation destruction is the loss of hollow-bearing trees. As many as 20 different hollows may be used within a home range, and three to six hollow-bearing trees per hectare are required to meet their needs. Forest



patches of at least 160 hectares are needed to support viable populations, and while the species is known to exist in urban patches much smaller than this, these small populations may be doomed to a slow extinction.

Their low rates of reproduction and their limited dispersal ability inhibits population recovery. While they can glide for distances of 100 m, they rarely come to the ground, so gaps larger than 100 m are an insurmountable barrier to movement. Greater gliders are also notoriously fussy when it comes to using nest boxes, but rear entry designs and moulded plastic hollows that mimic the thermal properties of natural tree hollows offer hope for the future. Friends of Nerang National Park have recently installed a mixture of 50 of these two designs, hoping to secure and expand the population of gliders in this 1600 hectare urban protected area. Actions such as these may provide a glimmer of optimism for the survival of these beautiful marsupials in the face of urban sprawl, continued land clearing, and increased risk of severe bushfires or prolonged heat waves in a changing climate.



Photo Banner & Inline : *Petauroides volans* (Greater Glider) - Photographers Downunder (Supplied by Jessica Lovegrove-Walsh)

NATIONAL PARK EXPERIENCE

- Mitchell Prior

An Ancient Landscape that stands as a relic of the giant mass that was once known as Gondwana or Gondwanaland. The picturesque mountains of Lamington National Park started to form 20-23 million years ago due to the eruption of the Tweed Shield Volcano and the Focal Peak Volcano.

All these years later through the test of time these mountains hold host to a pristine Subtropical Rainforest operating as a powerful ecosystem with an abundance of Energy & Life.

Crystalline Waterfalls cascading over Volcanic Basalt creating mineral dense springs and the most valuable resource for Flora & Fauna is what truly makes this Natural Area one of the most incredible sights my eyes have witnessed.

From the microbial activity beneath our feet to the incredible avian species in the canopy above us, this forest is one of a kind. Bioluminescent Fungi lights up the forest floor at night while Tree Frogs climb down from the canopy amongst the humidity & Snakes scan the forest in search for prey.

In the day, Wedge-Tailed Eagles soar through the sky in the distance while the birds of the Rainforest forage and try to attract a mate depending on the season. The oldest trees of the forest with their prominent buttress

roots anchor themselves in the deep fertile soil of the mountains and limit the UV Rays that hit the forest floor. They work with the microbes beneath them as a complex network stretching through the forest.

The ecosystem is the by-product of millions of years of consistent Natural Selection and is now a fine-tuned forest filled with the most well adapted species.

Hiking through these mountains learning, discovering and photographing as much as I can about this sacred land deeply connects me to our Earth. The raw power and energy of the forest keeps me alive and present but also the tranquil stillness over the mountains and valleys keep me grounded. The morning crack of the Eastern Whipbirds moves my eyes deeper into the forest floor, Antarctic Beech Trees that are centuries old remind me of a prehistoric time and the green cascading walls of dense rock covered by plants and moss captivate my eyes while

I watch Dragonflies chase the sun along the cascading streams throughout the day. Every portion of the Rainforest tells a story and each photograph I take tells a story. It's a forest where you can let your imagination run free and a forest that can teach you so much about life itself and how a variety of species working in one system together can flourish and thrive.

Through the change of seasons the forest grows and transforms with some seasons being more challenging than others.

The last 12 months of Hiking and Exploring this National Park in my spare time has opened my mind and helped me grasp the importance of these Natural Areas. I've only scratched the surface of what these mountains have to offer and look forward to discovering more of the natural beauty of the Subtropical Rainforest of Lamington National Park.

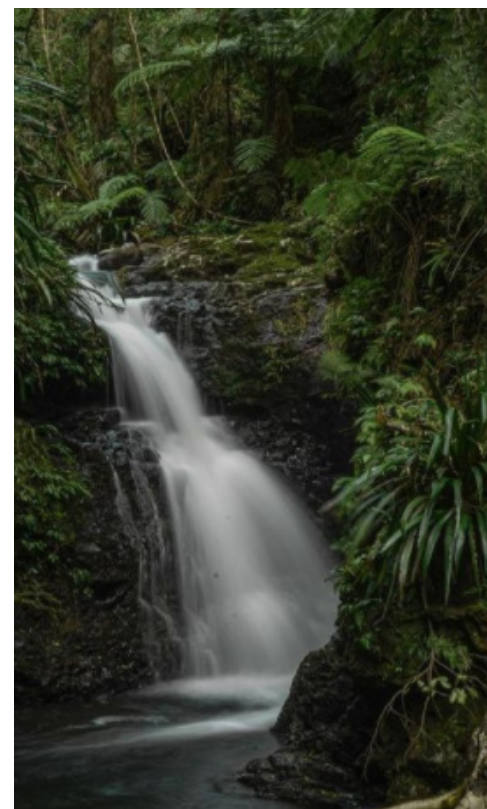


Photo Banner & Inline : Lamington National Park - Mitchell Prior

RANGER SPOTLIGHT

Insights into the diverse backgrounds and day-to-day activities of Queensland's park rangers

Daley Donnelly
Queensland Parks & Wildlife Service (QPWS)

What is special about your current park?

Fort Lytton and St Helena Island are heritage parks. I help maintain man-made landscapes and built structures. This is quite unique for a ranger as usually in national parks managing habitat to protect native wildlife and flora take precedence over other considerations.

What visitors will see are the remnants of facilities that were built for the requirements of bygone days. The buildings have a strange beauty and a strong echo of the many people who passed through them. Their scale is very human and their settings very peaceful.

My role has been to grow visitation through interpretation that deepens the understanding of the significance of these unique heritage sites. The educational programs, school holiday programs, and night shows at these parks interpret actual events and tell the stories of soldiers who walked the grounds of Fort Lytton and the people who passed through Lytton Quarantine Station.

What is your most memorable moment as a ranger?

On Mulgumpin (Moreton Island) National Park, I ran a "go-back-in-time" tour at Cape Moreton. I was in character as the 1880s schoolteacher, Mr Ward. It was a glorious summer's day on the wind-swept cliff, crashing waves below, the magnificent lighthouse above, and a crowd of 21st Century families waving to an imaginary 19th Century vessel approaching Moreton Bay. Seeing the group embrace the history of the place and imagine life back then, was very fulfilling.

Can you describe your favourite national parks experience?

It's always a buzz on Fort Lytton National Park when you lead people into the fortifications for the first time and they go 'Wow!!!'. Because the fort was built to be hidden, it looks like a



Photo Banner : Fort Lytton night show

Photo Above: QPWS Ranger Daley Donnelly, Heathlands Resources Reserve - © Queensland Government.

hill from the outside; and most people have no idea what lies beyond the entrance. Also, taking a school party from one site to another and to hear one student say to another, 'This is the best excursion ever!'. I also think one of my favourite experiences as a Ranger is when a student stands up and explains the significance of the national park by saying, 'These aren't just walls. These are memories.' For me this is what heritage parks are all about!

What is the best part about working in a National Park?

National parks will only exist for as long as people believe they need them. So, the best part is the satisfaction of knowing my work is helping people to understand the significance of the site, and that this understanding can help preserve the national park for future generations. Working with younger participants in educational programs is a highlight and dramatizing situations to explore the past is always rewarding.

What is your top tip for visitors to your park?

Arrange to go on a guided tour or book on a program such as the Fort Lytton at Night show. That way you find out the things that aren't in the brochures or on the signs.

NPAQ thanks Hank for taking time to answer our questions. We appreciate the work all QPWS rangers undertake in protecting Queensland's national parks.



queenslandnationalparks.com.au



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WHAT'S IN



WANT TO RECEIVE PROTECTED TO YOUR DOOR?

NPAQ activities

2022 Easter Camp at Giraween

Date: 15th - 18th April 2022

Meet: 8am at Pryamids Rd Mt Norman Rd, Eukey, QLD, 4382

Cost: \$25

Leader: Len & Laurelle Lowry (0428 335 572)

2022 Vegetation Management Group

Meet: 9:00am - the lower car park of Jolly's Lookout of D'Aguiar National Park.

What to bring: Gloves, protective clothing, eye protection, insect repellent, sunscreen, water, morning tea, and lunch.

Dates: 23 April 2022, 21 May 2022, 18 June 2022

Birdwatching, Hardings Paddock

Date: 24th April 2022

Meet: 7:30am at Carmichaels Rd, Purga, QLD, 4306

Cost: \$5

Leader: Ian Peacock (0416 943 280)

Social walk in Bunyaville Conservation Park

Date: 11th May 2022

Meet: 9:45am at Old Northern Road, Bunya, QLD, 4055

Cost: \$5

Leader: Len & Laurelle Lowry (0428 335 572)

NPAQ events

Our first members meeting for 2022 is on April 7th at the Lithuanian Hall in Highgate Hill. We're looking forward to seeing everyone after another turbulent start to the year.

The 2022 Easter Camp at Girraween has been scheduled for Friday 15th to Monday 18th April 2021! More information can be found on the NPAQ website: <https://npaq.org.au/events/2022-easter-camp-at-girraween/>

Vales

NPAQ is deeply saddened by the passing of NPAQ Honorary Life Member, John Bristow. John was an active and dedicated NPAQ Councillor for many years, Honorary Secretary from 2003-2005, NPAQ President from 2005-2008, and Honorary Treasurer 2008-2009. He was also Assistant Secretary, Activities Committee Convenor and Leader of day walks and Extended Activities. John was a very dedicated member who contributed enormously for the benefit of the Association, conservation and the environment. He was a most personable man who took an interest in all members and especially made new members welcome. If you were on any of John's walks or extended activities, you were guaranteed of an adventure.

NPAQ is also saddened by the passing of Clyde Mitchell in January 2022. He was proud to contribute as a councillor from 2006 - 2012, serving on several sub-committees. He and Lynn regularly attended members meetings and were on the supper roster! Clyde enjoyed hiking day trips and various camps and he volunteered to take part in the BATH project under the IBISCA-Queensland Programme in the Lamington National Park in 2006. Clyde valued this volunteering opportunity and loved the experience to work with the scientists on the project.

We send out heartfelt condolences to their family and friends.

YES! I WANT TO BECOME A NPAQ MEMBER AND RECEIVE PROTECTED EVERY QUARTER

As part of your NPAQ membership you receive four PROTECTED magazines every year both digitally and in hard copy, if you choose. You will also receive our monthly Neck Of The Woods newsletter, exclusively for members with organisation updates, including advocacy work and NPAQ event information.

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Last Name

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- ☐ Household (\$70)
- ☐ Conservation Partner (Individual) \$245
- ☐ Conservation Partner (Household) \$370

*Conservation Partner membership include one year registration + a tax deductible donation

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