

protected

Magazine of National Parks Association of Queensland

INDIGENOUS PROTECTED AREAS – CARING FOR COUNTRY AND CULTURE

PLUS

Protected area management costs reveal
budget shortfalls

ALSO FEATURED

20th Romeo Lahey Memorial Lecture

Families for the Forests

Conservation for birds

Northern Hairy-Nosed Wombat

Ranger spotlight



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Editor Samantha Smith

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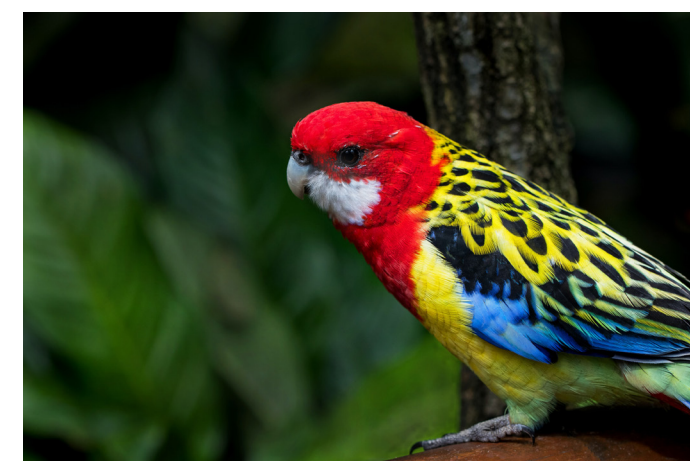
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Photo: Donovan Klein (supplied)

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FROM THE PRESIDENT



Susanne Cooper

SHARE YOUR PHOTOS

Its time. 2022 will be a critical year globally for biodiversity, as the UN COP 15 (United Nations Convention of Biological Diversity conference of parties meeting for the 15th time) is in December.

This meeting will be the largest biodiversity meeting in a generation, and the stakes for protecting our nature are high.

Not just because of the increasing rates of extinction, and forecasts of future mass extinctions, but also because previous agreements and targets around biodiversity protection have not been met.

The current internationally agreed target of protecting 17% of land and 8% of sea environments is being replaced by a proposal to protect 30% of land and sea by 2030.

This is ambitious but seen as essential for nature to recover and flourish.

Discussions leading up to COP15 indicate positive early signs of broad agreement, and optimism that this UN process can result in a serious commitment to protect the environment globally.

There are important implications for Australia and Queensland.

Australia has the most diverse collection of flora and fauna in the world, and is home to more than one million known species, with many of these endemic (unique) to Australia.

Although set against this is the unfortunate fact that we have one of the highest loss of species anywhere in the world.

In the last 100 years Australia has lost more mammal and plant species than any other country.

On a positive note, Australia has been noted for having large areas of land intact and not seriously degraded, although these areas are typically located in more remote, inland regions.

However many significant areas along Australia's eastern coast are in need of greater protection, with land being converted to agriculture and urban development.

COP15 can help stop this loss of biodiversity.

What about Queensland? Currently Queensland has less than 9% of its land area

protected – which is a long way from the proposed 30% target.

But this highlights the need for change to halt the destructive processes that cause a rapid decline in the condition of our natural environment.

Queensland has an exceptional role, given there are twice as many species here as any other Australian state or territory, with half of the species found nowhere else in the world.

There is a big gap to fill, although the recent unprecedented budget allocation for acquisition of National Parks is a positive step, and highlights their critical role.

COP15 will be important to set targets and send an internationally supported expectation to both Australian and Queensland governments.

This will likely trigger further action and investment in our protected areas.

Its time to turn rhetoric and a sense of an optimistic future into action. Never before has the need to expand our National Parks and other Protected Areas been more clear or urgent.

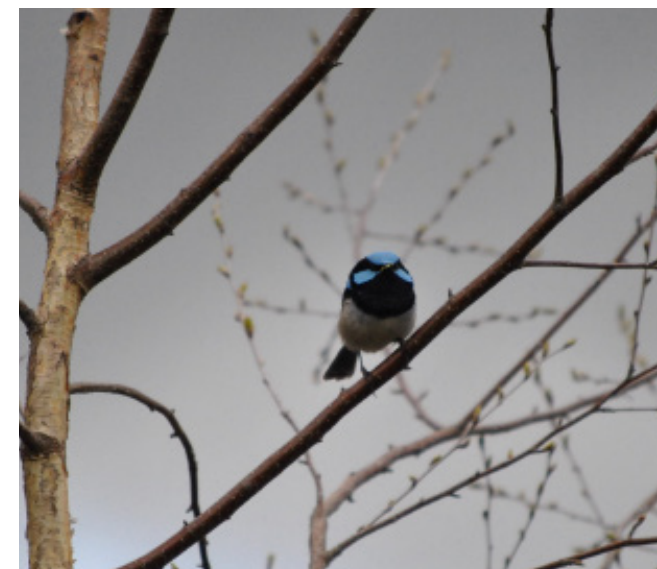
Do you have photos from a visit to a national park or protected area? Send them to admin@npaql.org.au or connect with us on Instagram [@nationalparksassocqld](https://www.instagram.com/nationalparksassocqld) for your chance to feature in the next edition of NPAQ's PROTECTED Magazine! The best photos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



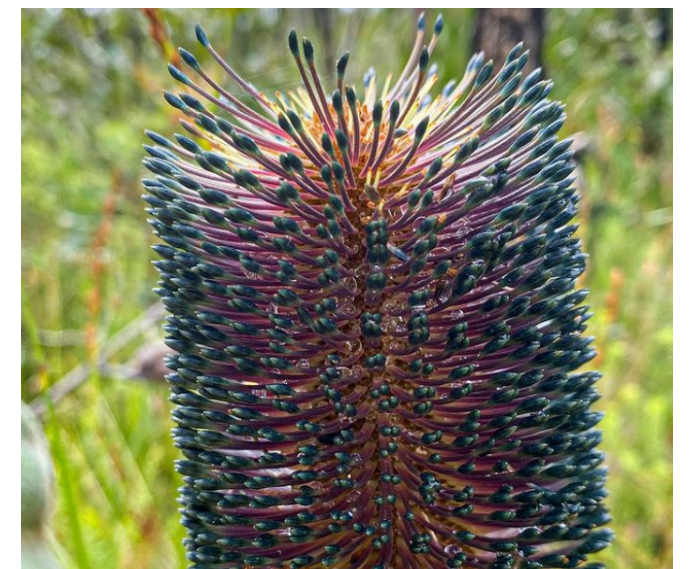
Intellagama lesueurii (Australian Waterdragon)
(@steventillyerphotography - Instagram)



Coomera Falls
(@nightz - Instagram)



Malurus cyaneus (Superb Fairy Wren)
Photo: Samantha Smith



Banksia robur (Swamp Banksia)
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Photo Banner : Pademelon - Samantha Smith

INDIGENOUS PROTECTED AREAS

- Bettina Richter

Nantawarrina, the first Indigenous Protected Area (IPA) in Australia was declared in 1998, on the Adnyamathanha lands (SA), since that time IPAs have grown due to demand from traditional owners across the country.

In October 2022 there are now 81 IPAs nationally, protecting over 85 million hectares of land and over 5 million hectares of sea. IPAs make up around 50% of the National Reserve System and in some cases can be declared across adjoining non-Indigenous held tenure (ie crown lands), and other reserves with the agreement of the landowners. IPAs are voluntary agreements and not legislatively based, so they do not impact on native title or other legal rights. The forming of an IPA happens only after a process of comprehensive consultation, planning and decision making which is initiated and led by the Traditional Owners of that area.

What is unique to Indigenous Protected Areas is that the protection is not limited to just the ecological protection of land and sea, but the cultural values too, recognising the importance of Aboriginal and Torres Strait Islander's embedded cultural values in Country, and that for Indigenous peoples, culture is part of Country and cannot be separated. In addition, unlike a national park which is managed wholly or partly by the government, IPAs are managed by Traditional Owners.

IPAs have a vast range of benefits including providing environmental outcomes such as the management of flora, fauna, water sources

and dealing with threats such as altered fire regimes, invasive species and weeds and the impact of visitors. Plus, there are the social, cultural, and economic benefits for Traditional Owners and the wider community through employment opportunities; increased pride, confidence and skills; and greater opportunity to connect with Country and support intergenerational transfer of knowledge.

The growth of IPAs over the last 24 years is a reflection of the great leadership of Aboriginal and Torres Strait Islander people and is seen as a world leading model. Wildlife is being brought back from the brink of extinction on land and sea country, intact land and sea country is maintained, partnerships are facilitated between traditional owners, government agencies, NFPs, research institutes and scientists, young Indigenous people are thriving in their classroom on Country and Traditional Owners are at the helm.

Only 9% of Queensland is protected under the national reserve system and only 1% of Queensland are Indigenous Protected Areas. Most of the IPAs in Queensland are located in Far North Queensland, the Torres Strait, and in the Gulf of Carpentaria



- Angkum (Stage 1), Eastern Kuku Yalanji, Girringun, Kaanju Ngaachi (Wenlock and Pascoe Rivers), Mandingalbay Yidinji, Nijinda Durlga, Pulu, Olkola, Thuwathu/ Bujimulla, Warraberalgal and Porumalgal, and Warul Kawa Island. Except for Guanaba, the closest IPA to Brisbane, which is home to the Kombumerri people; and Jamba Dhandan Duringala, southwest QLD on the traditional lands of the Kooma people. The Queensland government's successful Indigenous Land and Sea Rangers program has supported practical collaboration with Indigenous Protected Areas by funding ranger jobs managed by local traditional owner run organisations. These rangers can work across IPAs, national parks and other traditional owner managed country.

The Guanaba Indigenous Protected Area is located at the foot of Mt Tambourine in south-east Queensland, covering 100 hectares of dense rainforest and eucalyptus woodlands, in the traditional lands of the Kombumerri people. Before the IPA was dedicated in 2000, there had been extensive logging on the land, and prior to that it was a banana farm, so caring for the area's biodiversity and returning Country to Indigenous protection was vital.

"It's the only Indigenous Protected Area in south-east Queensland", says Kombumerri Ranger Co-ordinator Matthew Whitelock. "It's a special and important place culturally and ecologically, and means a lot to the Kombumerri People".

Threatened species whose habitat is in Guanaba IPA include the Fleay's barred frog and plant species shrubby jasmine and the spiny gardenia which are both on the endangered list. Guanaba is also home to one of Australia's largest butterflies – the Richmond birdwing butterfly, which is under threat due to extensive rainforest clearing. Cane toads and cats are the most invasive species which the Kombumerri Rangers are working hard to bring under control in the IPA.

With the recent dire flood events, one of the key roles for rangers has been fixing tracks which were extensively damaged by the floods. Alongside managing and monitoring threatened species, feral pests and invasive plants, the rangers also undertake cultural burning working alongside Firesticks and National Parks. Their cultural work includes mapping scar trees and middens and maintaining culture on country. Education is a vital component of their work, with rangers going out to schools and schools also visiting the Guanaba IPA.

"It just feels so good going out there every day and connecting to Country", adds Matthew Whitelock. "There's beautiful creeks and swimming holes. It's rich in bushtucker and rainforest plants, there's just an abundance of food out there."

For the Wuthathi people whose country is 200km from the tip of Cape York Peninsula, their sea country contains some of the most significant green turtle and dugong habitat in the Great Barrier Reef

Marine Park. The new Threatened Species Action Plan, unveiled by the Minister for Environment Tanya Plibersek on 4th October 2022, lists the Eastern Forests of Far North Queensland and Raine Island in their list of priority places, both part of Wuthathi Country. Raine island contains shared cultural history with Meriam Nation peoples.

As Elders have done before them Wuthathi people aspire to self-determination, re-establishing the Wuthathi's boundary and managing Nachi (land) and Karakara (sea) holistically. They are in the final stages of consultation for their new Indigenous Protected Area, protecting Country at Shelburne Bay.

"Although the IPA is yet to be formally dedicated and recognised by the Australian Government as an official protected area, managed to international standards under the International Union for the Conservation of Nature (IUCN), it is clear that the many years of planning and culmination of knowledge embedded in the IPA Plan are a testimony to the enduring strength of Wuthathi people", says Indigenous Protected Area Co-ordinator Sophie Holt.

"It is fantastic to work alongside Wuthathi to operationalise this plan and see the way in which it is already informing management on the ground...our seagrass and water monitoring projects, for example, and the ongoing development of the Wuthathi ranger base, all of which supports our number one priority - Wuthathi People on Wuthathi Ngaachi."

With the recent release of the State of the Environment Report setting out some stark warnings about our shared environment, it's never been more urgent to support Traditional Owners working to care for Country and Culture, and this is what Indigenous Protected Areas are all about.

Bettina Richter is the Communications Manager at Country Needs People, an independent not-for-profit organisation working with and advocating for Indigenous land and sea management with a growing network of over 42 Aboriginal and Torres Strait partner organisations, supported by over 100,000 Indigenous and non-Indigenous Australians. Indigenous rangers and Indigenous Protected Areas deliver strong outcomes for people, culture and nature.

countryneedspeople.org.au

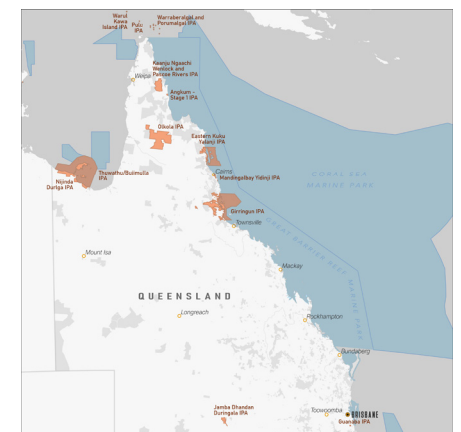


Photo Banner : Wuthathi Proposed IPA - Kerry Trapnell

Photo Inline (left): Wuthathi Rangers Seagrass Monitoring Trip - Credit Wuthathi Rangers

Photo Inline (above): QLD IPAS marine parks - Country Needs People

PROTECTED AREA MANAGEMENT COSTS REVEAL BUDGET SHORTFALLS

- Simone Maynard

The roles and responsibilities of Rangers (park managers) are diverse requiring knowledge and skills in fauna and flora ecology and conservation, and ecological processes such as pollination, water quality, nutrient regulation, soil formation and retention, air quality regulation, weed and feral animal control and fire management ¹.

As well, they require knowledge and skills related to visitor management such as safety, education, communication, track development and maintenance, rehabilitation, cultural heritage, and cleaning facilities ¹.

Rangers are at the forefront of protecting nature for its own sake, for our sake, and for future generations.

No two days are the same for a Ranger and their work can be unpredictable often influenced by human induced or natural events such as floods, storms and fire ¹.

The 2007 Senate Inquiry into Australia's national parks, conservation reserves and marine protected areas concluded that the resources allocated to Australian reserves are generally insufficient for effective management ².

Fast forward 15 years, recent research by James Cook University echoes the findings of the Senate inquiry report ³.

It highlights how each day a Ranger must prioritise actions and make trade-offs based on limited time, budgets and the current needs of the parks they manage.

This shortfall in funding limits the ability of Rangers to carry out the activities required to achieve their objectives ^{3, 4}.

As National Parks (NPs) have been established under different physical, social and economic environments it is only right that management activities are different across them.

However, common across our NPs is the Cardinal Principal to provide for the permanent preservation and protection of the area's natural (e.g. biodiversity and ecological processes) and cultural values.

To better understand the financial resources needed to manage Queensland's NPs, in particular where Ranger time and resources are being dedicated, the research conducted by James Cook University investigated spending and costs appropriated by NP managers across 41 protected areas with diverse characteristics (e.g. size, visitation levels, remoteness, and presence of endangered species and ecosystems).

The protected areas where data were gathered are shown in the map. In total, the sample represented over one third of the 7.7 million ha of NPs in Queensland, and one fifth of the approximately 700 field management staff in Queensland Parks and Wildlife Service (QPWS).

Where available, management plans for the 41 protected areas were used to frame a consistent set of questions that were asked to park managers.

Where management plans were not available, statements by managers of the park's objectives were used.

Managers were then asked to describe the specific outcomes they sought for these objectives, and to what standard they were actually being achieved using five performance scores of: Not at all (0), Poor (1), Fair (2), Good (3), and Very Good (4).

Once the parks objectives were determined, managers were then asked about the necessary activities and resources required (including dollars) to achieve them at these performance levels.

Written records on actual spending for the parks over the previous three financial years were obtained and then

averaged for a yearly figure.

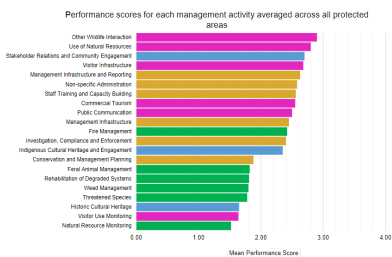
Managers also provided estimated costs of achieving the performance levels of Fair, Good, and Very Good for each management activity.

Budgetary shortfalls or gains were calculated by subtracting the actual spending levels from the managers estimates.

Across the 41 protected areas the performance scores, spending and cost data was analysed as:

- individual NPs (or groups of parks were they were managed as a single unit),
- yearly averages, and
- in relation to 24 management activities based on a pre-existing QPWS classification scheme.

These management activities were group into four categories: Biodiversity Activities, Visitor Management, Cultural Historic and Indigenous Heritage, and Administration and Management.



The first Graph shows the performance scores as assigned by park managers for each of the 24 management activities averaged across all 41 protected areas. The pink bars show the category of Visitor Management; specifically Wildlife Interaction, Use of Natural Resources, and Visitor Infrastructure, followed by Commercial Tourism and Public Communication; had the highest average performance score (Fair to Good or between 2 - 3).

The second highest performance scores were in the category of Administration and Management as shown by yellow bars, which includes Management Infrastructure and Reporting, Non-specific Administration, and Staff Training and Capacity Building (also Fair to Good or between 2 - 3).

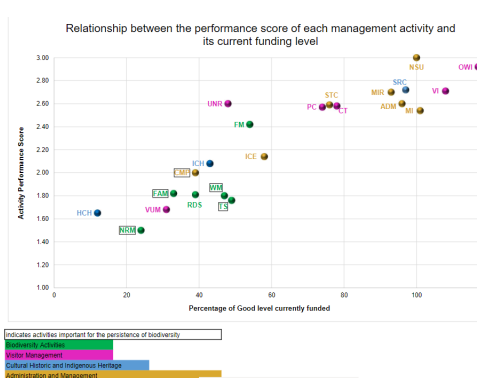
Biodiversity Activities with green bars, such as Feral Animal Management, Rehabilitation of Degraded Systems, Weed Management, Threatened Species, and Natural Resource Monitoring, scored the lowest for performance (mostly Poor to Fair or between 1 - 2). It should also be noted that no activities were performed Very Good (4).

Regarding costs and spending on management actions to achieve park objectives, Visitor Infrastructure absorbed by far the largest single proportion of the total budget at 25% of the budget.

Management Infrastructure and Reporting was second with 10.1%. By comparison, the six management activities focused primarily on conserving biodiversity which include Fire Management, Management of Feral Animals and Weeds, Natural Resource Monitoring, Conservation Planning, and Management Of Threatened Species, received in total 28.9%.

During workshops managers often observed that, when resources were scarce, trade-offs favoured activities related to maintenance and cleaning of visitor facilities (e.g. toilets, campsites, paths). This was primarily to avoid complaints from visitors and reflected the perceived urgency of these tasks.

According to managers, this prioritisation led to a shortage of resources for other activities such as those focused on biodiversity protection.



The second graph brings these two pieces of data together, performance scores and costs and spending.

It shows the relationship between the performance score of each management activity and its current funding level.

Again, the pink represents Visitor Management and the yellow represents Administration and Management.

Both of these are clustered in the top right-hand corner showing that whilst there was 'good' performance in these activities, it was also highly funded.

The green dots representing Biodiversity Activities is in the bottom left, means there was low performance in these activities and at a low cost.

In short, outcomes show managers are prioritising both actions and budgets towards managing visitor related experiences, supporting managers comments, that this was to the detriment of actions focused on biodiversity management.

Whilst it is not shown in these graphs, the research found that total management spending was correlated with a wide range of factors, but especially the amount of built infrastructure within each protected area.

Data on NP management costs are fundamental to effective conservation planning and park management ³.

The outcomes from this study has two important implications.

First, unless data on both current and required spending for protected area management is obtained, funding shortfalls cannot be properly estimated, and appropriate budgets be established.

Second, if the same kinds of trade-offs are being made to the detriment of biodiversity conservation in other NPs, the shortfalls highlighted in this research are an underestimate of the overall shortfalls of investment in high value biodiversity across Queensland.

Without reliable data on both spending and costs, it is impossible to relate them to factors that influence them, and to estimate shortfalls in current expenditure.

With record budgets for protected areas announced this year by the Queensland Government, the direction and allocation of these resources towards biodiversity conservation and management are important to changing this long-running trajectory of shortfalls.

1. Department of Environment and Science (2022), Being a Park Ranger, Available: <https://www.des.qld.gov.au/our-department/employment/park-rangers#toc-0>
2. Senate Standing Committee (2007), Senate Inquiry into Australia's national parks, conservation reserves and marine protected areas, Available: https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Completed_inquiries/2004-07/nationalparks/index
3. Craigie and Pressey (2022), Fine-grained data and models of protected-area management costs reveal cryptic effects of budget shortfalls, Biological Conservation, Vol. 272 (109589).
4. McCarthy, D., Donald, P., et al. (2012), Financial costs of meeting global biodiversity conservation targets: current spending and unmet needs, Science, Vol. 338 (6109).

Photo Banner : Unidentified tree - Samantha Smith

20TH ROMEO LAHEY MEMORIAL LECTURE

- NPAQ



The Romeo Lahey Memorial Lecture is held in memory and celebration of our founder, Romeo Lahey.

There have been 19 memorial lectures to date, with the first being held the year after the passing of Romeo Lahey, who died in 1968.

All previous Romeo Lahey Memorial Lectures can be read on the NPAQ website: <https://npaq.org.au/rhl/>

The 20th Romeo Lahey Memorial Lecture will take place this year on the 12th of November 2022 at Brisbane City Hall.

Brisbane City Hall is a venue of historical significance for NPAQ.

The inaugural meeting of NPAQ was held by Romeo Lahey and his supporters in 1930 in what is now known as the Kedron room.

The speaker for our 20th Romeo Lahey Memorial Lecture is Dr Marc Hockings, who has lead development



of research on management effectiveness evaluation of protected areas among many other professional achievements.

Dr Hocking is Emeritus Professor in the school of Earth and Environmental Sciences at the University of Queensland.

He is a long-term member of the International Union for the Conservation of Nature (IUCN) through its World Commission on Protected Areas, Species Survival Commission and Commission on Ecosystem Management. He initiated as is leading the IUCN WCPA work on the Green List of Protected and Conserved Areas.

Dr Hockings' presentation

title for the 20th Romeo Lahey Memorial Lecture is; **Quality Counts - making protected areas effective, equitable and successful.**

He will be focusing on *the role of the IUCN's Green List of Protected Areas in encouraging and measuring National Parks to reach good standards for management and what Australia at Queensland's National Parks need to do to achieve the internationally acceptable standard.*

To register your interest scan the QR code below and join our mailing list to receive the most recent updates on the event.



Photo Banner : Romeo Lahey - NPAQ archives
Photo inline (above) : Dr Marc Hockings - Supplied

FAMILIES FOR THE FORESTS 2022

- NPAQ

On December 10th this year, the day before World Mountains Day, the National Parks Association of Queensland will join with Binna Burra Lodge to host a half day 'Families for the Forests' celebration at Mt Roberts.

Join us from 11am to 3pm on Saturday the 10th of December to enjoy live music, picnics and a range of nature based activities to get the whole family involved!

To register your interest scan the QR code below and join our mailing list to receive the most recent updates on the event.



Photo Banner : Rainforest - Unknown



About NPAQ

The National Parks Association of Queensland (NPAQ) promotes the preservation, expansion and good management of national parks and other forms of protected areas in Queensland. Established in 1930, NPAQ has played a pivotal role in the creation of many national parks in Queensland. The Association brings together people who share an appreciation for protected areas and the vital role they play in conserving our unique and splendid natural environment.



About Binna Burra

Positioned 800 meters above sea level inside the sub- tropical rainforest of Lamington National Park in the scenic rim hinterland of the Gold Coast- about 30 minutes drive up the Beechmont range from either Nerang or Canungra. The site was reopened September 2020 after one year of closure resulting from the devastation of the September 2019 bushfires. For the past 90 years, it's a natural place where thousands of families have created experiences and memories to cherish.



CONSERVATION OF BIRDS IN FRAGMENTED LANDSCAPES REQUIRES PROTECTED AREAS.

An excerpt from an article published in the Ecological Society of America

– Robert Timmers^{1*}, Marijke van Kuijk^{1,2}, Pita A Verweij³, Jaboury Ghazoul^{2,4}, Yann Hautier¹, William F Laurance⁵, Stefan L Arriaga- Weiss⁶, Robert A Askins⁷, Corrado Battisti⁸, Åke Berg⁹, Gretchen C Daily¹⁰, Cristián F Estades¹¹, Beatrice Frank¹², Reiko Kurosawa¹³, Rosamund A Pojar¹⁴, John CZ Woinarski¹⁵, and Merel B Soons^{1,16}

For successful conservation of biodiversity, it is vital to know whether protected areas in increasingly fragmented landscapes effectively safeguard species.

However, how large habitat fragments must be, and what level of protection is required to sustain species, remains poorly known.

We compiled a global data set on almost 2000 bird species in 741 forest fragments varying in size and protection status, and show that protection is associated with higher bird occurrence, especially for threatened species.

Protection becomes increasingly effective with increasing size of forest fragments. For forest fragments >50 ha our results show that strict protection (International Union for Conservation of Nature [IUCN] categories I–IV) is strongly associated with higher bird occurrence, whereas fragments had to be at least 175 ha for moderate protection (IUCN categories V and VI) to have a positive effect.

This meta-analysis quantifies the importance of fragment size, protection status, and their interaction for the conservation of bird species communities, and stresses that protection should not be limited to large pristine areas.

In a nutshell:

- We analyzed the combined effects of size and protection status of isolated forest fragments on bird species occurrence in human-modified landscapes
- Declines in species occurrence across all feeding guilds with decreasing fragment size underscore the importance of large intact forests for conserving avian diversity
- Positive associations between protection and species occurrence suggest that protected areas are effective for maintaining bird species in fragments >50 ha
- Conservation of threatened bird species in fragmented landscapes should preferably focus on strict protection of large forest fragments

Home to ~80% of the world's terrestrial biodiversity (World Bank 2004), forest systems are increasingly under threat from a wide range of anthropogenic pressures (Newbold et al. 2015). Between 2000 and 2012, 2.3 million km² of forest was lost globally (Hansen et al. 2013), and up to 70% of the remaining forest area worldwide is estimated to be within only a single kilometer of forest edges (Haddad et al. 2015).

Habitat loss and fragmentation are major drivers of biodiversity loss, with disproportionate species declines in small, isolated fragments (Lees and Peres 2006; Bregman et al. 2014; Keinath et al. 2017).

Protected areas (PAs) are increasingly being implemented as a tool to conserve species and maintain associated ecosystem services.

As a result, PA coverage has almost doubled over the past 30 years, from ~8.2% of terrestrial land surfaces in 1990 to 15% in 2020 (UNEP-WCMC and IUCN 2020), although coverage still falls short of the Convention on Biological Diversity's Aichi Biodiversity Target of 17%.

However, to what extent PAs are an effective conservation measure in landscapes where natural habitat types have become fragmented and are under growing pressure of human activities (hereafter “fragmented landscapes”) remains unclear.

Several global studies on PA performance have demonstrated the importance of protection status of relatively large and pristine areas for conservation (Geldmann et al. 2013; Coetzee et al. 2014; Barnes et al. 2016; Gray et al. 2016). The PAs analyzed in these studies do not reflect the PA characteristics of the many small and isolated PAs embedded within fragmented landscapes.

At the same time, PAs across the world are facing increasing isolation, encroachment, and degradation (DeFries et al. 2005; Laurance et al. 2012). This is a cause for concern given that species richness and population sizes tend to decline

with reductions in forest fragment size and increasing fragment isolation (Lees and Peres 2006; Bregman et al. 2014; Keinath et al. 2017).

PAs are invested with different degrees of protection, which might affect their ability to conserve species in fragmented landscapes.

The International Union for Conservation of Nature (IUCN) recognizes six categories of PAs (designated as categories I–VI) that can be grouped into two broad protection types (WebTable

- “Strict protection” areas are managed for ecosystem and species conservation (categories I–IV), while
- “moderate protection” areas encompass culturally modified landscapes (category V) and areas managed primarily for the sustainable use of natural resources (category VI) (Locke and Dearden 2005; Dudley 2008).

Much of the recent increase in PA cover consists of PAs under moderate protection (WebFigure 1), which currently account for ~42% of the global area dedicated to PAs with a designated IUCN category (UNEP-WCMC and IUCN 2020). Hence, understanding whether the effectiveness of species conservation in fragmented landscapes differs among protection types and how large fragments should be to minimize species loss and maintain ecosystem functioning is of great importance.

Our primary objective was to assess the interplay between fragment size and protection status in determining species occurrence.

We test the hypothesis that protection of forest fragments mitigates declines in bird species occurrence in response to decreasing fragment size (WebPanel 1). We focused on birds because they are highly represented in fragmentation studies and provide important ecosystem services, such as control of phytophagous insects, plant pollination, and seed dispersal (Figure 1, below).



Through a meta-analytical approach, we examined how fragment size and protection status are associated with the probability of occurrence of bird species within 46 fragmented landscapes worldwide.

We systematically searched existing literature and compiled a global dataset that draws on 61,716 occurrence records of 1990 bird species across 741 mature forest and savanna woodland fragments ranging in size from ~0.1 ha to over 10,000 ha (WebFigure 2; WebTable 2). Most of these fragments form sharp boundaries with areas of anthropogenic land use.

Photo Banner : Juvenile Crimson rosellas (*Platycercus elegans*) - Geoffrey Moore

Results

Fragment size and protection status

We found that the relationship between fragment size and bird species occurrence depends on the protection status of fragments (Table 1; Figure 2a). ...

This indicates that for the conservation of birds, protection becomes increasingly effective with increasing size of forest fragments regardless of protection status...

Threatened species

Differences in species occurrence were much more pronounced when only threatened species were considered (WebTable 3; Figure 2b)...

As with the analysis of the entire bird community, differences among PA types were greatest in the largest fragments.

For fragments ≥10,000 ha, the occurrence of threatened species was higher in fragments under strict protection (0.99 [CI: 0.74–1.00]) than in fragments under no protection (0.58 [CI: 0.10–0.95], z-ratio = –3.43, P < 0.01), and marginally higher than in fragments under moderate protection (0.81 [CI: 0.18–0.99], z-ratio = –2.29, P = 0.06).

To read the full article, visit <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.2485#support-information-section>

PARK IN FOCUS

Mapleton National Park

Mapleton National Park is just 95km (roughly an hour) north of Brisbane city, making it one of the 10 closest national parks to Brisbane by car.

At least 107 species of birds live in the Blackall Ranges parks (Mapleton Falls NP, Kondalilla NP and Mapleton NP), including the peregrin falcon (*Falco peregrinus*), the Wompoo Fruit-Dove (*Ptilinopus magnificus*) and many more. The Blackall Ranges Parks are also home to some 70 species of reptiles and 32 species of frogs, including the vulnerable cascade treefrog (*Litoria pearsoniana*), the vulnerable tusked frog (*Adelotus brevis*) and the endangered giant barred frog (*Mixophyes iteratus*).

The Blackall Range isn't only crucial to protecting vulnerable and endangered species, it has also held spiritual significance for many Aboriginal people in South East Queensland.

The Bunya Pines which grow in abundance in the areas provide enough food to support large gatherings.

Every three years, the Kabi Kabi and Wakka Wakka people would hold the Bonyee Festival at the same time that the Bunya nut crop peaked.

The Bonyee festival was attended by guests who would travel great distances from inland and coastal areas so they could share food, songs, dances and arrange marriages.



History

From 1842 to 1860, it was illegal to clear land or settle where Bunya Pines grew however when the reserve status of the area was rescinded, logging became an issue.

in the 1880s, there was widespread clearing of the Blackall Range tableland forests as part of settlement.

Then from the early 1990s, people began visiting the area to enjoy the natural scenery of waterfalls and spectacular views.

in 1945, Kondalilla was the first national park in the area, followed by Mepleton Falls

National Park in 1973 and Mapleton National Park more recently in 2014.

The Mapleton Falls National Park is 26ha and Mapleton National Park is an additional 10064ha following the amalgamation of Mapleton Forest Reserve and Delicia Road Conservation Park.

Things to do

As with all Queensland national parks, this is a great area to switch off from technology and reconnect with nature.

There are 12 walking trails in Mapleton National Park, ranging from easy 300m return walks to 3 days hard walks over 35km one way.

One of the most popular walks is the Mapleton Falls & Wompoo Circuit, an easy 1.8Km return trip that takes roughly 1 hour to complete.

Photo Banner : Mapleton National Park National Park - Tatiana Gerus

Photo Inline : Bunya Trees - Unnknown

WILDLIFE FEATURE

Northern Hairy-Nosed Wombat

The northern hairy-nosed wombat is one of the world's rarest marsupials and the largest of the wombat species, averaging about 32kg.

They are nocturnal, living in extensive burrow systems that can consist of up to 90 metres of tunnels.

Although they historically occurred across a vast area of inland Queensland and NSW, by 1982, northern hairy-nosed wombats were restricted to a single population of just 35 individuals at Epping Forest National Park (Scientific).

The Epping population has been the base for all northern hairy-nosed wombat research and recovery to date. Initially, research focused on identifying threats and monitoring populations through assessing burrow activity and trapping; however, more recent advances in technology have improved the accuracy and frequency of monitoring.



Although burrow and camera monitoring are conducted constantly to monitor population health, staff and volunteers recently undertook a hair census, which successfully collected hair samples for DNA analysis, which will be used to determine population trends and demographics.

Recovery of the species, led by Queensland Department of Environment and Science, has included improving and protecting habitat, excluding predators and introduced competitors from existing wombat habitat, provision of constant water sources and on-going monitoring of population sizes and demographics.

Since 2001, significant increases in wombat numbers and the establishment of a second population, at Richard Underwood Nature Refuge near St George, have indicated recovery efforts are working. Currently it is estimated that over 300 wombats occur across both populations.

The program is continuing to expand with planning and preparation to translocate wombats to another new location in Queensland well underway.

The daily management of the species across both Epping Forest National Park (Scientific) and Richard Underwood Nature Refuge provides opportunities for public to be involved through the northern hairy-nosed wombat volunteer caretaker program.

At each site, two volunteer caretakers live on-site, rotating every 1-2 months.



The primary duties of these roles include monitoring the predator fence, monitoring the activity of wombats and other fauna, maintaining the wombat watering system, downloading, and assessing video footage from remote cameras, vegetation maintenance and maintaining infrastructure and equipment.

Recruitment to these positions is always open.

If you have a reasonable level of fitness (large amounts of walking may be required), have (or are prepared to obtain) a Provide First Aid certificate, have a 4WD (only required for work at Epping Forest National Park), are reasonably proficient with computers and would like to know more about this opportunity please contact jenny.molyneux@des.qld.gov.au.

Photo Banner : *Lasiorhinus krefftii* (Hairy Nosed Wombat) - Donovan Klein

Photo Inline (left):

Photo Inline (center and above): *Lasiorhinus krefftii* (Hairy Nosed Wombat) - Threatened Species Coordination; Central Team, Queensland Parks and Wildlife Service and Partnerships

NATIONAL PARK EXPERIENCE

- Leilani Johansen

I first visited Kroombit Tops in 1998 as a Central Queensland local.

At only eight years old it was a big day to get to the site of its most alluring feature – the 1945 crash site of a Beautiful Betsy airplane, the ill-fated WWII Liberator bomber.

Driving from Calliope via the Tableland Road, it takes about an hour to really get into the depths of the park. The crash site can only be accessed with a 4WD as you need to cross some creek beds and deep gullies to get there. Additionally, the track to it is a one way loop, so you cannot backtrack.

But the effort is worth it when you come across the crash site.

Although it's been over 70 years since the aircraft bomber went missing and crashed, it's still an eerie sight, especially for a national park in Central Queensland where you least expect a WWII wreckage.

In recent years I've only had the pleasure of visiting Kroombit Tops National Park two more times, as I no longer live in Central Queensland. Once hiking the easier-to-access

tracks on foot, and on another occasion enjoying it by 4WD once again.

What I love most about the park is it is so large that there is so much to see and feel, with what feels like infinite kinds of climates and landscapes within the one park.

Within the space of 30-minutes you can go from dry bushland to misty rainforest scenery, and all can be viewed majestically from the Kroombit Tops Lookout which provides a stunning view of the Boyne Valley.

Once you find the main camping area and park, the lookout is only a short hike away. However, as I mentioned it is a big day, so a good amount of preparation is needed. Lunch and snacks would best be packed for the day as there is not much in terms of shops once you head west of Calliope.

Depending on the time of year, layered clothing is also advisable, given that the climate can change significantly from one track to another. Also, be mindful of wildlife – on one occasion I experienced leeches in the leafy forest floor, and on another occasion, I glimpsed

dingoes.

The best time to visit Kroombit is definitely within the spring or autumn months. Unless you are an experienced driver, I suspect some of the 4WD tracks would be quite challenging when wet, and the summer months would be fairly brutal with the CQ humidity.

If you're not camping and only doing a day trip from Gladstone, Calliope, Boyne Island, or Rockhampton, I would definitely suggest leaving early. As mentioned, the Liberator crash site is quite a way into the park, and round trip from Calliope can take up most of your day.



Photo Banner & Inline : Barron Gorge National Park - Dave Haynes

RANGER SPOTLIGHT

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

Ranger Will
Queensland Parks & Wildlife Service (QPWS)

What is special about your current park?

Lamington National Park has three super special qualities. It is an iconic World Heritage listed national park and protects the most special section of forest—Antarctic beech forest over 1000m altitude—in south-east Queensland. It has an unmatched intergenerational connection for many people, more so than any other park in the State, as a result of nearly 100 years of intertwined relationships with the two lodges (O'Reilly's and Binna Burra). And last but not least, the park contains over 500 waterfalls and is home to 5000-year-old trees!

What is your most memorable moment as a ranger?

My most memorable moments are the big natural events we have to navigate as a team, which include many 'big campaign' fires, such as the 20-week Sarabah wildfire; the major natural disaster deployments, such as going into Grantham after the 2011 floods or The Gap after the 2009 storm; along with some of the amazing rescues and recoveries in which I have been involved. One recovery in particular stands out—finding a man's body and returning him to his wife on her birthday after he had been missing for 400 days.

Can you describe your favourite national parks experience?

I think I have been very fortunate to work in so many of our SEQ parks and across such a diversity of landscapes from Lamington to Moreton Island. I am yet to encounter a 'bad' national park, as every park has special places but the Antarctic beech forest



Photo Banner & inline : QPWS Ranger Will, Heathlands Resources Reserve - © Queensland Government.

>1000m is hard to beat!

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

The best thing about working in parks is the cultural and 'family' connections that you develop through working on country for extended periods, and through working with some amazingly-talented and knowledgeable people for years, including other rangers, scientists, park neighbours and some of our many stakeholders.

What is your top tip for visitors to your park?

As the Boy Scouts saying goes, 'Always be prepared' as success favors the prepared. And try not to visit alone, as the shared experience is often more enjoyable and usually safer. And two heads are generally better than one when you are in a remote area.

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



queenslandnationalparks.com.au



qld.gov.au/camping



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WHAT'S IN



WANT TO RECEIVE PROTECTED TO YOUR DOOR?

NPAQ activities

Birdwatching Eagleby Wetlands

Date: 23rd October 2022

Meet: 7:30am off Logan Street, Eagleby 4207

Cost: \$5

Leader: Ian Peacock (0416 943 280)

2022 Vegetation Management Group

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

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

Dates: October 22nd 2022, November 19th 2022

Bird watching Sandy Camp Road

Date: 20th November 2022

Meet: 7:30am at Sandy Camp Road, Wynnum West 4178

Cost: \$5

Leader: Ian Peacock (0416 943 280)

Birdwatching Bribie Island

Date: 22nd January 2023

Meet: 7:30am at 52 Bibimulya Street, Bellara 4507

Cost: \$5

Leader: Ian Peacock (0416 943 280)

2023 New Year Twilight Celebration

Date: 12th February 2023

Meet: More details in the future

Cost: \$

Leader(s): Len & Laurelle Lowry (0428335572)
onthewallaby@live.com.au

NPAQ Major events

NPAQ - Romeo Lahey Memorial Lecture

Date: 12 November 2022

Meet: 9:30am (10am start) at Brisbane City Hall

Cost: *

NPAQ & Binna Burra - Families for the Forests

Date: 10th December 2022

Meet: 11am at Binna Burra Lodge

Cost: from \$30*



Romeo Lahey Memorial Lecture 2022

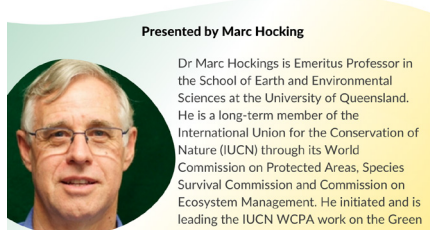
Date: 12th November 2022

Venue: Kedron Room, City Hall - Brisbane

Presentation title:

Quality counts - making protected areas effective, equitable and successful

The role of IUCN's Green List of Protected Areas in encouraging and measuring National Parks to reach good standards of management and what Australia and Queensland's National Parks need to do to achieve the internationally acceptable standard.



Presented by Marc Hocking

Dr Marc Hocking is Emeritus Professor in the School of Earth and Environmental Sciences at the University of Queensland. He is a long-term member of the International Union for the Conservation of Nature (IUCN) through its World Commission on Protected Areas, Species Survival Commission and Commission on Ecosystem Management. He initiated and is leading the IUCN WCPA work on the Green List of Protected Areas.



Saturday December 10th 2022

@ Binna Burra Lodge

Live Music

Bush tucker Workshop

Plant a seedling

Picnic in the Rainforest and much more!

Bird Identification

Tug of War

Animal Encounters

Be the first to get more details!

Register your interest:



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