protected

Magazine of National Parks Association of Queensland

habitat fragmentation
yellow crazy ants
paluma range national park
mossman gorge
southern cassowary
the national park experience
ranger of the month

Issue 10 August - September 2016

Connect and Protect

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- Join Us – become a member
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Cover - Wallaman Falls (Kirsty Leckie)

Strip p2 - Mountain White gum bark (*Eucalyptus dalrympleana* subsp. *heptantha*). (Paul Donatiu)

FROM THE PRESIDENT

Michelle Prior, NPAQ President

Welcome to the August/ September edition of ***Protected.***

As a democratic nation, Australia has benefited from the incorporation of community engagement in government decision-making.

While often tokenistic, at its best, it provides for open dialogue, even when views are opposite.

NPAQ recently experienced an instance of open engagement when Minister Miles surprised NPAQ Councillors by dropping in on a meeting with representatives from QPWS and Spicers Peak Lodge, regarding the Scenic Rim Trail ecotourism proposal for Main Range National Park.

Productive dialogue is often difficult, particularly when viewpoints differ and one party is the government of the day.

NPAQ acknowledges the Minister and the department taking the time to hear our concerns and provide a more thorough briefing on the proposal. With open discourse, the miles existing between a red flag and a green light can be shortened.

As publicly stated in many arenas, NPAQ is not supportive of the development of infrastructure within our national parks for exclusive use by commercial operators.

One of NPAQ's core missions is to preserve intact in their natural condition, to the greatest possible extent, the existing national parks of Queensland. There is a very real risk that by allowing ecotourism facilities on national park land, the primary purpose of national parks – the conservation of nature – will be eroded.

NPAQ prefers the use of private land adjacent to national parks for the development of eco-tourism infrastructure.

So what is the government's position on eco-tourism facilities in national parks? Under this government, proposals will only be approved for appropriate, low impact projects that has ticked all the 'green boxes'. Aside from rejecting proposals such as zip lines, due to conflict with other park users and the type of nature experiences they wish to promote, the government is committed to finding new and innovative ways to provide eco-tourism and conservation opportunities to showcase and help conserve Queensland's national parks and natural heritage.

Additionally, the government is committed to achieving the target of 17% protected area in Queensland, and are developing innovative ways to acquire and manage this amount of land. This may mean a shift in policies related to commercial and private interests to help achieve this purpose.

The proposal in question involves a significant conservation and education element as its primary purpose, as opposed to being a commercial operation.

As a member or supporter of NPAQ what is your opinion of NPAQ viewing proposals on their merits without deviating from our principles, particularly those that match our objectives and positively contribute to the protected area estate in Queensland?

Please email or post your opinion to the NPAQ office:
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UNDERSTANDING HABI

Kirsty Leckie, Conservation Principal

Since Australia has been inhabited, landscapes have been modified by mankind. Fire has been used by Traditional Owners and European settlers to change and control the landscape. The influx of European settlers bought about development with land cleared for agriculture, mining and new settlements.

Recent debate regarding land clearing and habitat fragmentation highlights the importance of landscape connectivity. Loss of vegetation assemblages can occur from a variety of processes, fire, weeds, land development, maintenance of utilities (power, water etc) and agriculture. The result can be a fragmented landscape with isolated and disconnected pockets of vegetation.

This article examines habitat fragmentation and why it is important to understand this concept in light of the land clearing debate and the conservation of protected areas.

Population health and dynamics

Etherington and Shapcott (2014) highlighted habitat fragmentation as one of the greatest threats to biodiversity on a global scale. The conversion of connected forests to a mosaic of patches varying in size and isolation is predicted to leave native species more prone to disease and population decline (Shapcott *et al*, 2009).

Habitat fragmentation can also limit the movement and migration of native species, and as a result affect population size. In addition, flora assemblages can become more susceptible to damage through increased expose to natural elements and other threatening processes (introduction of weeds, grazing pressure etc).

Johnstone et al (2010) also examined habitat fragmentation as a cause of population loss reduction and loss. The authors noted that there is increasing evidence that the effects of fragmentation vary as a function of life history, autoecology, diet and body size. For example, specialists are more severely affected than generations and larger taxa/ species are more effected than smaller taxa/ species.

Isolation

When tracts of habitat become fragmented isolation can occur. Isolation-sensitive birds may have difficulty dispersing between the isolated fragments of their habitat (Worboys et al, 2001). When large areas of habitat become fragmented, 'islands' may be created. These islands can become isolated which may have a flow on effect to the survival and regeneration of native species.

Etherington and Shapcott (2014) noted that isolation can impede the dispersal of seed and pollen both abiotically (physically) and biotically (biologically). This has a flow on effect of reducing emigration and immigration between communities, resulting in an overall decline in ecosystem health (Alados *et al*, 2009).

Edge effects

Severe habitat fragmentation may result in very little interior habitat remaining. Edge sensitive species may suffer, and there may also be an increased risk of weed and pest incursion. Temple (1991) examined the sensitivity of bird populations to habitat fragmentation. Area sensitive birds which have large spatial requirements (requiring a large area to thrive) cannot maintain a viable population if the fragments of habitat fall below a critical minimum size.

Edge-sensitive birds may have difficulty adapting to a fragmented landscape, if the preferred habitat is contiguous and extensive in size. This could lead to a change in species composition and diversity. Worboys et al (2001) highlights the example of the Noisy Minor (*Manorina melanocephala*). Noisy Minors are aggressive and act to drive out smaller birds if they move into a new area. If the habitat they invade is small and isolated, the smaller native bird species may be left without suitable habitat or become more prone to attacks by predators.

Reduced interior habitat (reduced

TAT FRAGMENTATION

ratio of interior to edge) can lead to an increase in pressure from predators (native and introduced), competitors, parasites and disease.

Patch size and quality

Landscape ecology examines the degree of difference between habitat patches and their surroundings, the original size and shape of the patches, and the role of habitat corridors in facilitating dispersal and maintaining viable meta-populations.

A fragmented landscape is compiled of patches. The size and quality of these patches can also have an impact on the diversity and robustness of native species populations. Lindenmayer *et al* (2000) found a significant patch size effect for the total mammalian assemblage and for terrestrial mammals but not for arboreal mammals. In addition, Lindenmayer *et al* (2000) also found that larger remnants (patches) supported more diverse assemblages.

Connectivity

A central tenet of addressing the impacts of habitat fragmentation is connectivity. Connectivity describes how patches of the landscape are connected spatially, temporally, genetically and ecologically. For examples seed dispersal mechanisms may be reliant on other plants or insects for pollination to successfully take place.

Worboys *et al* (2001) describes the degree of connectivity being characterised as disconnected, critical or connected. Under this premise, the aim for protected areas is to be connected with the surrounding landscape. Lortie (2004) went on to introduce the concept of 'integrated community concept'. This takes the tenet of connectivity further, and proposes that natural areas range from highly individualistic through to highly interdependent with regard to responses to habitat fragmentation.

The challenge to land managers

This presents a complex challenge to land managers. A myriad of patterns and processes of species responses need to be studied to truly comprehend the nature and scale of impact to ecosystems (Didham *et al*, 2012). Connectivity could be achieved via expansion of the protected area estate, establishing and rehabilitating corridors, ensuring other tracts of suitable habitat are retained (nature refuges etc).

Habitat fragmentation continues to be a complex issue to understand and manage. A crucial part of the solution is Queensland's protected area estate. It is also vital to maintain and where necessary restore connectivity. A healthy landscape is a connected landscape.

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Images

Top, Springbrook National Park (Kirsty Leckie)

Open Eucalypt forest (Kirsty Leckie)

Rainforest (Paul Donatiu)

YELLOW CRAZY ANTS

Neil Douglas, Contributor

One of the risks of foreign trade is that exotic pests can be inadvertently introduced into Australia with cargo – the fire ant infestation around the Brisbane area is a well known example. The risks have increased with the burgeoning trade with countries having warmer climates more closely resembling that of Australia.

A relatively new unwelcome guest to these shores is the yellow crazy ant (*Anoplolepis gracilipes*), which was first discovered in Queensland in 2001 near Cairns. This species appears to have originated in Africa and is so named because of the frenetic movements of the ants. They prefer warm, moist conditions and so the Wet Tropics of north-east Queensland is an ideal habitat. However, they are now known from more than 30 sites in the state, mostly industrial areas, and have also formed widely dispersed colonies of varying intensities through Arnhem Land. Studies indicate that they could spread right across northern Australia and through much of the rest of Queensland and even New South Wales. They are included in the International Union for the Conservation of Nature's list of the world's 100 worst invasive species.

Characteristics and environmental dangers of crazy ants

Although they are small (5 mm in length), crazy ants are aggressive and omnivorous, and pose both environmental and economic threats because of their ability to form "super colonies". Although they do not bite, they spray highly irritating and corrosive formic acid to disable and kill prey. Swarms can readily kill small animals (both invertebrates and vertebrates) and the young of larger ones. Larger animals can also be indirectly affected through the loss of food sources.

Whereas crazy ants need protein from prey for reproduction, they also need lots of carbohydrate for energy. They obtain some of this from nectar (although they are poor pollinators) and sap, but they also actually cultivate sugar-secreting scale insects which in turn obtain carbohydrate from host plants.

When ant numbers become large enough there can be a host of damaging knock-on environmental effects. Insect species can be locally wiped out as a result of their larvae being killed – in turn, this can among other things adversely affect bird populations. Scale insects and their attendant moulds can degrade crops (such as sugar cane and fruits) and damage tree canopies, killing mature trees. The loss of floral nectar without pollination taking place can interfere with plant reproduction. Loss of forest invertebrates can inhibit decomposition of dead vegetable matter and dispersal of seeds.

Lach *et al*.(2016) found that not only did crazy ants prey on the larvae of certain rainforest butterflies that the researchers studied, but their colonies also displaced native green tree ants. The latter were more of a deterrent to herbivores than were crazy ants, leaving the foliage of trees and shrubs increasingly vulnerable to being eaten.

The worst two infestations in Queensland total about 830 ha centred on Edmonton and Kuranda near Cairns – both of which are partly within Wet Tropics rainforest. Unfortunately ants are still arriving in our ports and an average of two new infestations are found in Queensland each year. Almost half of the infestations detected up to 2010 were in timber yards, indicating that movement of timber is a high risk activity for spreading crazy ants. It is accepted that long distance dispersal of the ants is caused by human activity, especially the transport of soil, green waste and timber.

Hoffmann (2015) studied the nesting characteristics of crazy ants to gather information for designing more effective control measures. He found that most nests were underground, generally less than 20 cm below the surface, and tended to be at the base of larger trees. During the wet season nests could also be found under leaf litter. Brood production peaked in the wet and was lowest in the late dry season. Availability of a good carbohydrate supply was the strongest driver of high ant populations.

Other studies have shown a tendency for ants to establish nests in dry creek beds in the dry season. This poses a serious dispersal risk because the ants can then be carried downstream to establish new colony sites in the following wet.

Control and eradication

Currently the principal method for controlling and eradicating crazy ants is baiting. Baits are readily available and easy to use, but adequate funding is often a limiting factor. Hoffmann's study indicated that ant activity was greatest at night, suggesting that afternoon baiting might be the most effective. In agricultural and residential areas manual laying of baits by farmers or residents can be feasible, but aerial baiting is normally required in rainforest areas.

Baiting has reduced ant numbers in the Edmonton and Kuranda infestations, but has not yet eliminated them. Baiting has been successful in completely removing ants from some limited areas in Arnhem Land, although overall the ants are now so widely dispersed that total elimination from the Northern Territory scarcely seems feasible.

Although chemical methods of control are quite effective if sufficient resources are available, in the longer term biological control measures may offer the greatest hope. An interesting trial is being carried out using a wasp that preys on the scale insects that provide crazy ants with honeydew.

More needs to be done to map and assess the extent of infestations in Queensland. The Wet Tropics Management Authority has been asked to determine what tasks and funding would be required to eliminate crazy ants from their area of responsibility.

A current impediment to bait-based eradication programmes is that the Australian Pesticides and Veterinary Medicine Authority does not allow baits to be laid in dry creek beds which, as noted above, are favoured locations for ant nests in the dry season. This ban needs to be overturned if eradication is to have a chance of being completely effective. The main baits that are used are based on chemicals that break down quickly, thus posing little risk of persistent environmental contamination of waterways.

The fact remains, however, that crazy ants will never be eliminated so long as more keep arriving in cargo. Ideally, there should be increased biosecurity surveillance of imported goods and preferably treatment of them at the point of origin rather than just on arrival in Australia.

Funding ant control

A report commissioned by the Queensland Government estimated that crazy ants could end up costing the economy $3 billion in agricultural and domestic losses, without taking into account the value of environmental damage to the World Heritage rainforests. Nevertheless, it has been a struggle to convince politicians of the need to provide adequate funding for eradicating crazy ants from the Wet Tropics. Initially the Queensland Government provided $10m to treat the Edmonton and Kuranda infestations but ceased further funding in 2012. The focus of work then had to be wound back to containment until more money could be found. The Commonwealth Government subsequently provided a $2m grant but that ran out in June. The Invasive Species Council estimates that a further $15.3m will be required to eliminate the Cairns area infestations.

In recent months intensified advocacy efforts have finally borne some fruit. In April the Queensland Government promised a further $3m, and during the federal election campaign the Coalition pledged $8.8m over 3 years. Although a good start, these contributions are still not enough and a petition calling for more Queensland Government support has been initiated.

Past experience has provided many hard lessons to the effect that delays in eliminating invasive species only make the problem worse (or uncontrollable) later on. It's to be hoped that politicians will bear this fact in mind and provide the extra funding required to eliminate crazy ants from the Wet Tropics before it's too late. Ultimately, anything less will be a false economy.

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Images

Top - Yellow crazy ants attack (Wet Tropics Authority)

Yellow crazy Ants (DAFF)

NPAQ would like to thank Andrew Cox and the team at the Invasive Species Council for providing research and advice for this article.

PARK IN FOCUS

Paluma Range National Park

Denis McMullen, NPAQ Member

Living in Townsville has much to offer: a short ferry ride to Magnetic Island. Castle Rock provides panoramic views of town, mountains and ocean. The Reef HQ Aquarium and Turtle Hospital provide a fantastic way for local and visitors to see some of the prolific marine life of the Reef. Visitors can also learn of the difficulties created for the ocean-going turtles through human-derived pollution.

Nearby Bowling Green Bay National Park is a Ramsar Convention listed site where brolga and magpie geese find habitat in the sedge swamps of the wetlands. With rugged mountains rising abruptly from the wetlands and saltpans of the coastal plain, Alligator Creek descends in a series of cascades, deep pools and waterfalls to create a series of very popular swimming holes and picnic areas.

Introducing Paluma National Park

Travelling north of Townsville on the Bruce Highway (approximately 61 km), past the wonderful "Frosty Mango" (a required pause for refreshment, particularly if you have children with you on this trip) is the turn-off for Paluma Range National Park. The Traditional Owners are the Nywaigi people though the name, "Paluma", comes from a colonial government survey ship which operated along the North Queensland coast in the 1880s and 90s.

Situated up to 1000 metres in elevation, the Park offers a relief from the coastal humidity and heat for those intrepid souls who are prepared to attempt the 18 km of precipitous road to the plateau. The official advice for this road is "not suitable for buses or caravans".

This is worth taking note of as it is not for the faint-hearted!

The turn-off from the highway climbs to Little Crystal Creek complete with charming stone arch bridge. The bridge was built under an employment scheme during the 1930s Depression as part of the Paluma Road development. The overseer for that work is recognised in the naming of McClelland's Lookout, which provides extensive views of Halifax Bay and the Palm Islands.

The bridge and creek are a popular area for picnics and swimming, though, like all creeks and swimming holes, it can be a serious hazard for people who want to dive or jump into the flowing water.

Big Crystal Creek

Continuing along the Paluma Range Highway is Big Crystal Creek, an ideal location to stop for a picnic lunch, swim, and bushwalk. Visitors can also pitch a tent and spend the night in the designated camping areas (permit required). Big Crystal Creek also features a large swimming hole and a large picnic area.

Past the Paluma village which is surrounded by rainforest, the diversity of flora and fauna changes dramatically and the vegetation changes to dry open woodlands. The small township of Hidden Valley is home to Hidden Valley Cabins, an eco-retreat daily platypus tours.

At The Loop, near Big Crystal Creek, a track of about one kilometre links picnic grounds and popular swimming spots with a series of lookouts.

The first European commercial activity on the Paluma plateau was prospecting for tin, and a number of longer tracks heading north and west

from the campgrounds are the pack trails of tin miners in the 1920s.

The difficulties associated with remoteness and disappointing yields when accompanied by a serious drop in the price for tin, led to abandonment of mining sites. One unfortunate historical reminder of that period is the number of unmarked, abandoned shafts which makes wandering through the bush in some unsigned areas extremely dangerous.

Fauna and flora

Unusual fauna found in the National Park include the green ringtail possum (*Pseudochirops archeri*), found in a tiny area of north-eastern Queensland, between Paluma and Mount Windsor Tableland. The green ringtail possum has been described a a fig-foliage specialist (Jones *et al*, 2006). Red-legged pademelons (*Thylogale stigmatica*) may be seen in closed forests in the area. Observant visiitors may be able to spot platypus in quiet pools and riffles.

Among many interesting birds which may be observed in the National Park are the northern log runner, Victoria's riflebird and bowerbirds, particularly the golden bowerbird, whose habitat is tropical rainforest above 900 m.

The golden bowerbird's bower is described as "a maypole type" with two columns of sticks up to three metres tall joined at the bottom, making it the largest structure built by any Australian bowerbird. Victoria's riflebird has a range across the mountain rainforest from Paluma and Mt Spec National Park to near Cooktown to the north.

A major feature of Paluma NP is the Jourama Falls, situated to the north of Little Crystal Creek and its nearby camping grounds. The Falls are, perhaps, more correctly described as cascades. Two streams, parted by rock on the lip of the fall, join into one body of water which pours in a memorable and distinctive style down the face.

Interesting walks

The Falls can be reached by the Falls track which passes through open woodland and across Waterview Creek to a lookout. This is 3 km (one hour) return with moderate grade.

The stream continues to separate and spread out into pools and creeks which irrigate the more level land of the plateau, creating many delightful and charming opportunities for the discerning photographer.

Rainforest cloaks the summits and much of the escarpment of the Paluma Range, above eucalyptus forests with understories of grasses and acacias. Heights towards Mt Spec (960 metres) command fine views to the lowlands reaching to Halifax Bay. Looking further to the northeast from these heights, and at various points on the way up to Little Crystal Creek, there are many opportunities to look back across the sea to the impressive shapes of the Palm Islands. To the south, Magnetic Island provides a companion piece to these Islands, shrouded as it is in the haze of distance.

Other walks include the Paluma Rainforest Walk (680 metres return) which takes the visitor past strangler figs with their bizarre and often picturesque structures. Also seen are king ferns and evidence of old mining activity in the rainforest.

Witts Lookout is another easy 3 km return track, meandering through rainforest, and concludes by climbing through open forest to rocky outcrops. The Paluma Rainforest Walk is 680 metres (return) of easy track walking among strangler figs and king ferns and is a good introduction to the rainforest.

Almost 74% of the Paluma National Park is within the Wet Tropics World Heritage Area (WTWHA) which stretches along the heights of the Divide from Paluma to Cooktown. Declared in 1988, it covers 8990 km^2. The WTWHA contains many outstanding natural values, most significantly, including some of the oldest continually surviving rainforests on earth. These are the last traces of the Gondwana rainforest that covered the super continent until the continental drift to the north created a climate which supported the competition from flowering plants such as the eucalyptus.

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Images

Paluma Range National Park (Denis McMullen)

Crystal Creek (Denis McMullen)

FEATURED WALK

Mossman Gorge, Daintree National Park

Kirsty Leckie, Conservation Principal

Daintree National Park is an iconic place nestled in the far north of Queensland. The area was formed when Australia was still a part of the Gondwana super continent. As the climate changed, and tropical species retreated and expanded over the subsequent millennia, the Daintree became a haven for many unique species of flora and fauna.

Mossman Gorge is a section of the Daintree National Park located approximately 80 km north of Cairns. Access is limited to shuttle buses from 8am – 6pm, and a small fee applies. As the area is part of the Wet Tropics, it would be wise to check the weather before planning a visit.

Flora and fauna

Brilliant Ulysses (*Papilio Ulysses joesa*) butterflies, insectivorous swiftlets (*Aerodramus terraereginae*) and reclusive reptiles all call Mossman Gorge home.

Observant walkers may encounter Amethystine pythons (*Morelia kinghorni*) along the rainforest track. Though these magnificent creatures are non-venomous, walkers should not approach or try to touch them.

Birdlife is abundant in Mossman Gorge. Buff-breasted paradise kingfishers (*Tanysiptera sylvia*) return to the area to breed during the warmer months. Usually perching in the mid-storey and lower canopy, these small kingfishers come to the ground to feed. With spectacular blue and orange colouring and very long white tail feathers, the buff-breasted paradise kingfishers are striking birds to observe.

Ground-dwelling orange-footed scrubfowl (*Megapodius reinwardt*) are also commonly seen in the area, scratching for seeds, fruit and invertebrates on the forest floor. A small medapode of the family Megapodiidae, the species is recognisable by sturdy large feet and distinctive colouring.

Keep a lookout throughout Mossman Gorge for the scrubfowl's nest. Built out of large mounds of sand (up to 4.5 metres high), leaf litter and other material from the forest, these nests generate the heat necessary to incubate the species eggs.

The beautiful Mossman river winds its way through the gorge and is home to a range of aquatic jungle perch (*Kuhlia rupestris*). In the quieter reaches saw-shelled turtles (*Wollumbinia latisternum*) and platypus (*Ornithorychus anatinus*) dwell.

Platypus are endemic to Australia, and are dependent on rivers, streams and freshwater waterways. Whilst platypus are active year round, they are most active during twilight and at night. The slow moving waters and riffles of Mossman River provide the perfect feeding grounds for platypus to dine on shrimp, snails and insect larvae.

Another interesting resident of the Gorge is the Spotted-tailed quoll (*Dasyurus maculatus gracilis*). Spotted-tailed quolls are classed as Endangered, and are one of Australia's few purely carnivorous animals. Within the Gorge, their preferred habitat covers lowland rainforests through to the tall eucalyptus forests. Mostly active at night (hunting and feeding), Spotted-tailed quolls rest in caves, rock hollows and hollow logs during the day.

Rainforest circuit track

The Rainforest Circuit Track is one of the highlights of the Mossman Gorge experience. Beginning at the far side of the Rex Creek suspension

bridge, the track is moderate to easy in grade. Walking the 2.4 km track takes visitors through the rainforest, winding in and around the majestic trees before returning to the bridge.

Along the way, there is a small lookout providing expansive views of Manjal Dimbi (Mount Demi).

The track provides an insight into the beauty of tropical rainforests. Mossman Gorge is part of the Daintree National Park, the largest continuous area of rainforest in Australia.

Along the rainforest circuit, towering rainforest trees compete for light, growing skywards and shading the forest floor below. Ferns, palms and other shade tolerant plants thrive in this shadowy environment.

Epiphytic plants including orchids and birds nest ferns start life higher in the canopy, then grow and thrive in the dappled light.

Visitors may also see the strangler fig (*Ficus triradiata*) in action.

Starting out as a seed (deposited by birds or bats) on a tree branch, the strangler fig sends out roots downwards as it grows, eventually constricting and entwining the host tree's trunk.

The track and general area are prone to seasonal flooding so it is worthwhile checking with park staff prior to visiting.

Rex Creek suspension bridge

Rising out of the Mossman Gorge rainforest is the striking Rex Creek suspension bridge. Opened in 2010, the bridge provides a fantastic perspective on the rainforest and gorge below.

Spanning 460 metres, the bridge walk takes approximately 10 minutes to walk and is easy to moderate in grade (due to the incline of the walkway).

The elevation of the bridge allows visitors to have a birds-eye view, and provides the chance to spot tree-dwelling species of fauna and the unique epiphytic plants growing within the forest canopy.

Cultural heritage

A visit to Mossman Gorge is not complete without gaining a deeper understanding of the cultural heritage of the area.

The Gorge is part of the traditional lands of the Eastern Kuku Yalanji people. Many of the landscape features of the area have spiritual significance to the Kuku Yalanji people.

One way to learn more about the Traditional Owners of the land is by taking part in the Ngadiku Dreamtime Walk.

Beginning with a traditional smoking ceremony, visitors are then led on a walk that takes in the sights and sounds of the surrounding rainforest.

Indigenous guides provide an interesting narrative along the walk about the ways of life of Traditional Owners and the special significance of the plants and animals in the area.

Why visit?

Mossman Gorge is a fantastic spot to see first-hand some of the unique plants and animals of the Daintree and gain a deeper understanding of the area's cultural heritage.

Daintree National Park is an important part of the Wet Tropics World Heritage Area and a crucial part of Queensland's protected area estate.

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Tropic Prehistoric; In the humid expanse of the Daintree, north Queensland, you can get a taste of how Australia used to be when forest covered the continent. (2010, October 6). *Australian Geographic*.

Images

Top: Mossman Gorge (Paul Donatiu)

Ulysses butterfly (Australian Butterfly Sanctuary)

Tree in Mossman Gorge (Paul Donatiu)

WILDLIFE FEATURE

Casuarius casuarius johnsonii (Southern Cassowary)

Emma Fitzsimmons, Contributor

If you have ever been lucky enough to encounter a cassowary amidst the dense rainforest of far north Queensland, you would be forgiven for thinking that you had just entered a scene from Jurassic Park.

The southern cassowary's brightly coloured neck, scaly legs, large three-toed feet and unmistakable helmet-like casque are certainly reminiscent of that of a dinosaur. However, despite its fearsome looks, this prehistoric bird is endangered and requires our attention to ensure the protection and survival of the species.

Habitat and distribution

The tropical and coastal lowland rainforests of north-east Queensland are home to the southern cassowary with a northern population found in Cape York and a southern population in the Wet Tropics.

The distribution of the species is closely related to the availability of suitable habitat and access to a year-round supply of fleshy fruits.

While the size of home ranges may vary depending on the season, the cassowary's aggressive nature ensures that each individual territory is defended vigorously.

Biology and ecology

The southern cassowary (*Casuarius casuarius johnsonii*) is Australia's heaviest flightless bird and along with its ground-dwelling relatives - the emu, ostrich, kiwi and rhea - form the taxonomic group known as 'ratites'. Adults can reach up to two meters in height. While both male and female may look similar, females are brighter in colour, larger and more dominant than males.

Cassowaries are solitary species and interact during a brief courtship in the breeding season. While most species rely heavily on maternal care to raise offspring, female southern cassowaries seek no involvement in the parenting.

Once the female has laid a clutch of three to five large green eggs, it is the male who is responsible for the incubation and rearing of hatchlings.

Being frugivorous, the southern cassowary's diet consists mostly of fleshy fruits that have been foraged from the rainforest floor.

Cassowaries consume large-seeded fruits whole and due to their unique digestive system are able to extract the pulp and pass the seeds in large piles of droppings. These droppings can contain hundreds of seeds and act as perfect fertiliser packages that allow the seeds to germinate.

This ability to contribute to the distribution of fruiting plants is why cassowaries are considered a 'keystone species'.

Threats

Loss, fragmentation and degradation of habitat is the primary cause of decline in southern cassowary numbers. As the human population continues to rapidly increase and expand in north-east Queensland, much of the tropical lowland rainforest has been cleared for agriculture and urban development. Studies have indicated that only 20% of the southern cassowary's former habitat remains, with much of it still under threat. Encroachment of residential areas on surrounding protected rainforest has increased cassowary vulnerability to motor vehicle strikes and dog attacks.

In order protect these unique gardeners of the rainforest, the Queensland Government is encouraging people to be 'cass-o-wary' by never approaching or feeding cassowaries, slowing down in cassowary territory and keeping dogs properly fenced and leashed.

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Images

Fungi and leaf littler (Kirsty Leckie)

Cassowary (QPWS)

THE NATIONAL PARK EXPERIENCE

why national parks should be valued, told through the lens of personal experience in Queensland national parks

Michelle Prior, President NPAQ

A few years ago, to celebrate my half century (aka 50th birthday), I took a little jaunt on the Larapinta Trail. Somewhat satisfied (and astonished) at our completion of 229 kilometres (complete with full backpacks), we moved onto the final celebrations - a family pilgrimage to the heart of Australia: Uluru and Kata Tjuta.

This long awaited destination was not the culmination I had naively believed it would be. Despite the indescribable brilliance of the rising of the July full moon over Uluru, the experience was shattered with the glare of vehicle head lights, the blaring music and the party atmosphere in the carpark we were condemned to be in with countless others. Fair enough, I told myself - this is a special place, and the hordes of people had to be constrained in some way.

However, by dawn the next morning my patience was ground to dust, as red as the dust at my feet. Desiring to watch the sun stream its first glorious rays of the day on our world heritage listed icon, we attempted to 'fit' into the designated location in the pre-dawn. Desperately we fled, seeking to find a quiet place away from the hordes of camera clasping, video clutching, ear-plugged tourists crammed together in the barricaded area - all pushing for a front line spot.

After driving frantically to find an 'ecologically and culturally appropriate' place in which we could experience this magic sight unhindered, we finally found a spot to ourselves by the side of the road. Just as the sun's rays met the Rock and the magnificent spectrum of colours appeared, up pulled other vehicles, complete with music pumping.

The resounding stillness of the land was shattered. Our moment was gone, our singular communion with nature lost. I longed for the Larapinta Trail and that feeling of being an integral part - if only a minute speck - in a land so vast, so steeped in time that it was beyond mental comprehension (mine at least).

Although this experience confirmed my 'recreational snobbery', I have since learnt that there are actual philosophical terms for my preference: Contemplative Recreation versus Nature the Product - Nature ™, Nature © - or Consumptive Recreation.

The experience also highlighted why national parks matter to me. National parks protect nature's beauty and diversity, and help stem the destruction of the natural world in the push for never-ending development. They are the last bastion for conservation. Personally, it is the opportunity to connect with something beyond my insignificant self, and truly marvel at the amazing intricacies of the natural world.

National parks connect us to our country, our land. They contribute to bridging the gap between the traditional peoples and those who have come after. They provide a place of refuge from our fast-paced and often stressful lives; and are invaluable in counter-balancing the urban life.

National parks provide the opportunity to experience the glories, and the mundaneness of the Australian bush. Superlative descriptions of Australia's national parks abound, particularly in tourist brochures. For me, they ring true, they live up to their expectations. But national parks do more than that, they take me beyond my small, human, constructed world to an expansive, astounding, natural domain. The untamed wildness of the bush realigns my internal compass and makes my spirit soar!

Images

Top (Michelle Prior)

Sun and moon rise over Uluru (Jeannie Rice)

SPOTLIGHT (RANGER OF THE MONTH)

Jo Petersen (QPWS)

Background

Spotlight is a series focusing on QPWS rangers for NPAQ's bi-monthly magazine *Protected*. Questions have been designed to provide an insight into the diverse backgrounds and day-to-day activities of Queensland's park rangers.

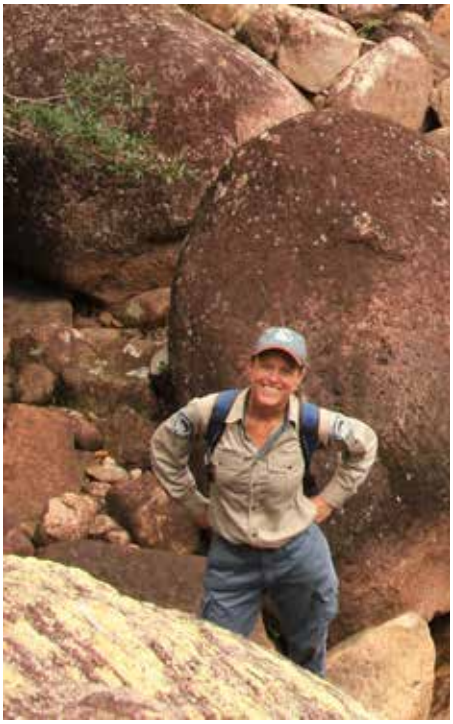
Jo Petersen is a Ranger - Marine Resource Management, based on Magnetic Island since 2007.

When asked why she became a ranger, Jo replied:

I think it was always going to happen, given my background growing up in scouting and camping, competency in biology, ecology and manual arts, and strong interest in and love of all things nature and the outdoors.

It was a very natural progression for me after university, working in community-based environmental projects and adventure ecotourism. I started as a QPWS volunteer in the Daintree, and never looked back from there.

I love my job as a QPWS Marine Parks Ranger, as it brings all my passions together.



How long have you worked in national parks?

I have worked in national parks since 2003.

The parks I have worked in include:

2003 – 2005: Far North Queensland - Daintree National Park – based in Cape Tribulation as a 003 Ranger.

2005 – 2007: QPWS Community Engagement Unit based in Townsville as 004 Community Education Ranger.

2007 – present: Great Barrier Reef Region - Marine Parks based on Magnetic Island as a 004 Ranger.

What is your most memorable moment?

The community open day for the Forts Walk on Magnetic Island in 2014.

We had worked hard for many years to secure the funding to upgrade this very popular walking experience involving restoration works to the WWII fortifications, rebuilding the original track, and a new and innovative sign and interpretation display.

A highlight was the return of 98-year-old Hugh Ward, the Army Engineer who had originally built the track 70 years earlier. The island and Townsville communities helped us celebrate.

The Forts Walk is more popular than ever, showcasing the dry tropical landscape, WWII cultural heritage, and stunning views of the island and marine park, as well as koalas in the wild.

Can you describe your favourite national parks experience?

Walking in Carnarvon Gorge always reminds me of what an outstanding national park it is.

That's followed closely by hiking the Thorsborne Trail on Hinchinbrook Island.

What is the best part about working in a national park?

I work in Marine Parks. This means we manage both national park islands and marine park, so my work is incredibly diverse – which I love.

I am based on Magnetic Island which is two-thirds protected area and has a substantial residential population.

I thoroughly enjoy working with our community and stakeholders to achieve great outcomes for conservation of our protected areas.

What is your top tip for visitors to parks for bushwalking?

Up this way in Queensland's north, I just can't emphasise enough the importance of having adequate water, footwear and sun protection when walking in the summer months. Avoid the hot part of the day if possible.

What is your top tip for campers?

Leave no trace. Leave the site better than it was before.

NPAQ would like to thank Jo for her time and effort in answering our questions.

We hope you have enjoyed finding out more about one of Queensland's Park Rangers.

WHAT'S ON 25

NPAQ Activities

Vegetation Management Group

Saturday 24 September 2016

Location: Meet at Jolly's Lookout carpark, D'Aguilar National Park

Grading: various

Leader: Angus McElnea (0429 854 446, or gus_mcelnea@hotmail.com)

Spend a couple of hours to help with lantana control and revegetation work in the Jollys Lookout section of D'Aguilar National Park, west of Brisbane.

Birding at Karawatha Forest Park

Sunday 25 September 2016

Location: Karawatha Forest Park

Grading: Easy

Leader: Geraldine Buchanan (07 3349 1109)

Fee: $5 for members and non-members

Karawatha Forest is part of the Flinders Karawatha fauna corridor and contains a variety of habitat.

We will follow the Wild May Trail unpaved, formed, from the Illaweena Street entrance, then cut through an unformed track winding through a grove of Casuarinas. The Park is home to more than 100 bird species.

Upcoming Activities

Vegetation Management Group

Saturday 22 October 2016

Location: Meet at Jolly's Lookout carpark, D'Aguilar National Park

Grading: various

Leader: Angus McElnea (0429 854 446, or gus_mcelnea@hotmail.com)

Birding at Anstead Bushland Reserve

Sunday 23 October 2016

Location: Anstead Bushland Reserve, Hawkesbury Rd, Anstead

Grading: Easy

Leader: Lesley Joyce (0423 109 788, or 07 3818 7646)

Fee: No cost for this event

80 acres of bushland consisting of eucalypt forest, riparian forest, grassland areas and Brisbane River views. The reserve has numerous walking tracks.

Meet at 7:30am on Hawkesbury Rd, Anstead.

For more information, or to register for an activity, please go to our website:

www.npaq.org.au/events

Clif Bell Memorial Picnic

Sunday 23 October 2016

Location: Anstead Bushland Reserve, Hawkesbury Rd, Anstead

Grading: Easy

Leader: Jennifer Parker and Ian Peacock (ianpeacock@hotmail.com, 07 3359 0318, or 0416 943 280)

Fee: No cost for this event

The 4th Annual Cliff Bell Memorial Picnic will be held at Anstead Bushland Reserve. This park borders onto the Brisbane River, Clif's workplace for 24 years. Join fellow NPAQ members and reminisce wonderful past activities or just catch up with friends.

This Picnic follows the NPAQ Bird Walk of the Reserve, so come a little earlier and casually walk the pathways viewing the local birds. Gazebos will be set up to escape the sun. Bring some goodies for a shared morning tea and your own lunch, Council gas BBQ's are available.

Meet at 7.30am for the Bird Walk, otherwise 9.30am for the picnic.

NPAQ Events

Annual General Meeting and Annual Awards Presentation

Wednesday 21st September 2016

Time: 7:30pm

Location: Mt Coot-tha Botanic Gardens Auditorium

The AGM will commence at 7.30pm. This will be followed by the Annual Awards evening including a presentation on the history of NPAQ, the Romeo Lahey Awards, and the dedication of the Ruth Read Historical Collection.

Refreshments and a light supper will be provided.

Romeo Lahey Lecture

Wednesday 19 October 2016

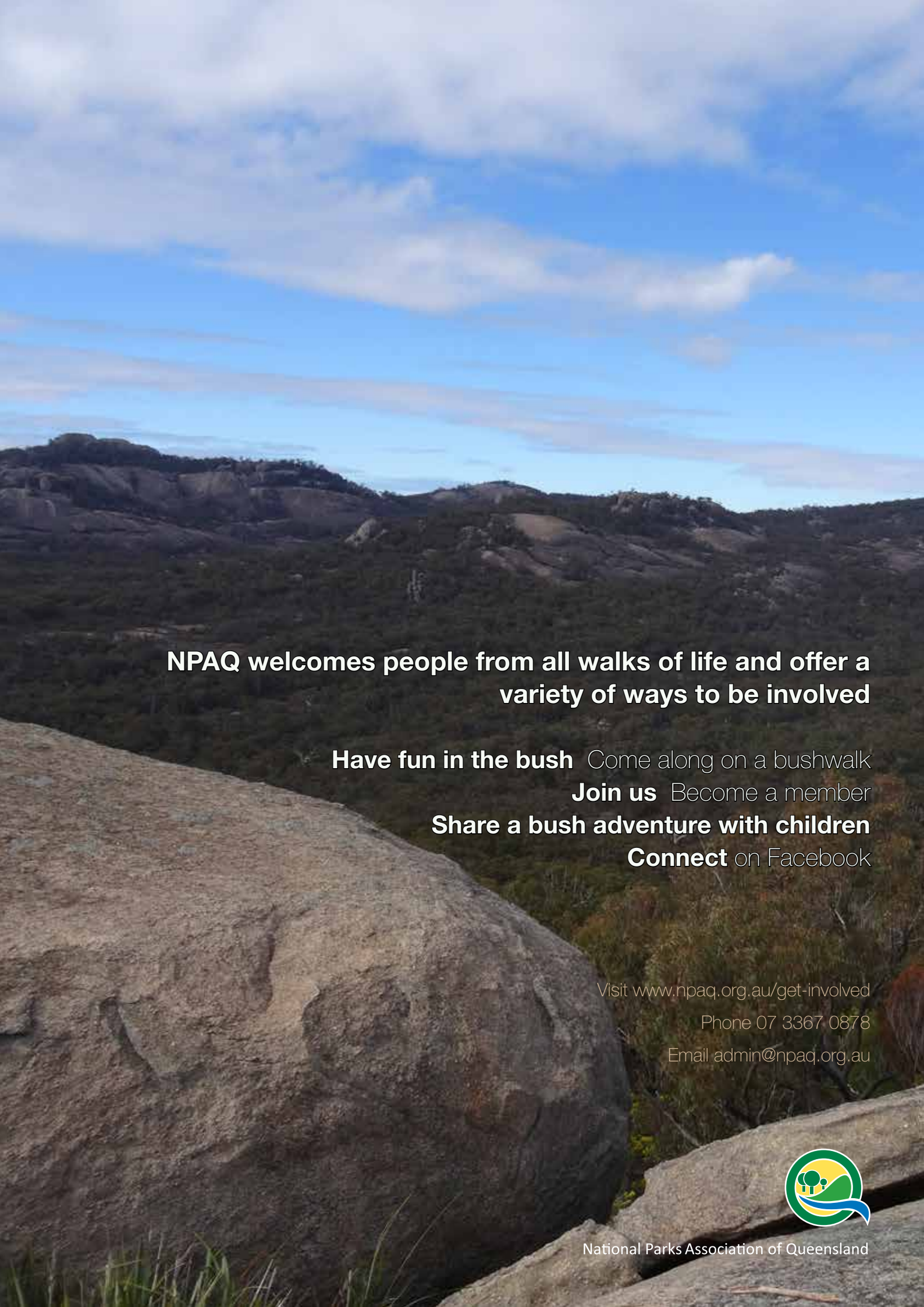
Time: 7:30pm

Location: Mt Coot-tha Botanic Gardens Auditorium

Guest speaker yet to be confirmed
Please note there will be a door charge to cover expenses and supper.

Vale

Our sincere condolences to the families and friends of Herb Baker, who passed away recently.



NPAQ welcomes people from all walks of life and offer a variety of ways to be involved

Have fun in the bush Come along on a bushwalk
Join us Become a member
Share a bush adventure with children
Connect on Facebook

Visit www.npaq.org.au/get-involved
Phone 07 3367 0878
Email admin@npaq.org.au

National Parks Association of Queensland