LAND FOR WILDLIFE
South East Queensland

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South East Queensland Koalas - a grim future?

Australia has a diverse range of wildlife but none perhaps quite as unique as the Koala.

Koalas climb down from their trees in search of a mate during spring and summer and to search for feed trees. Dispersing young also venture in search of a new home range. In today's environment in SEQ this daily cycle is incredibly risky. Feed trees are fewer and far between, roads isolate habitats and patches of bushland are fragmented. Cars are plentiful and dog attacks are more frequent. These effects on Koalas can lead to disease or mortality.

Once common along eastern Australia, the decline of Koalas has long been recognised. Perhaps most evident is the decline within SEQ where Koalas once had a stronghold. SEQ continues to be the fastest growing region of Australia, with clearing for development into Koala habitat continuing to threaten the survival of Koalas.

In 2004, Koalas were listed as Vulnerable in the SEQ Bioregion under the *Nature Conservation Act 1992*. However, a recent report, *Decline of the Koala Coast Koala Population: Population Status in 2008* released by the Dept. of Environment and Resource Management, shows that Koala numbers continue to decline at an alarming rate. Since 2005-2006 the Koala Coast population (Brisbane, Logan and Redlands) has declined by 51% in less than 3 years. In less than 10 years this same population has declined by 64%. A study on Koalas in the former Pine Rivers Shire found a 45% decrease in numbers since 2001.

Modelling predicts that, if the current rate of decline continues, there will be less than 500 Koalas remaining on the Koala Coast by 2010.

It has been shown that bushland sites rely on immigration of urban Koalas to maintain viable populations. As urban Koala populations decline, flow-on effects are now being recorded in protected areas such as Venman Bushland National Park and Daisy Hill Conservation Park.

The future of Koalas within SEQ is a responsibility that we all share. Governments must act to protect Koalas; however, landholders and the community can contribute too. Simple actions can make a difference.

- Plant food and habitat trees for Koalas.
- Drive slowly at night and keep to speed limits. Koalas, like most native marsupials, are nocturnal.
- Ensure that property fencing is wildlife friendly.
- Take precautions and ensure your dog is restricted from Koala habitat at night.
- Report or record Koala sightings to local wildlife networks, Local Government and the Daisy Hill Koala Centre.
- Report sick, injured or dead Koalas to the Daisy Hill Koala Centre.

Article by Melanie Harrison
Land for Wildlife Extension Officer
Redland City Council

See backpage for information on how you can contribute to the National Koala Conservation Strategy.

Contents

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editorial

Working in the environment sector we can come across a fair bit of bad news. Which is why, when I was asked recently to speak at the Sunshine Coast Conservation Forum, I chose to speak about motivation. What keeps us motivated to pull out weeds, look after our threatened species and plant trees?

I think the first motivator is at a property scale. I have met Land for Wildlife members who have transformed weed-choked creeks into clear flowing waterways and those who have remarked at the return of birds or butterflies as a result of their tree planting efforts. These benefits are enjoyed close to home.

On another scale, motivation may be drawn from neighbouring landholders working together for similar conservation goals. There are examples of this happening in SEQ whereby Land for Wildlife members get together to remove weeds and plant trees on each others' properties. These occasions foster social and shared-ecological benefits and can be a great motivator. Land for Wildlife Extension Officers have played a key role in supporting these local projects through the provision of grants and equipment.

As Land for Wildlife in SEQ continues to grow, I believe that we will see more collective working bees working on a sub-catchment scale.

Another motivator could be summarised in the 80's flavoured catch-phrase Think Global, Act Local. The fact that the majority of SEQ is in private ownership means that if we are serious about protecting threatened species and ecosystems, then we must assist landholders to manage them. Long lists of birds, reptiles, fish, amphibians, plants, mammals and invertebrates form State and National threatened species legislation. Many occur on Land for Wildlife properties. Knowing that your activities on your property directly contribute to the survival of a rare plant or animal can be an excellent motivator.

So I wish to thank all Land for Wildlife members who stay motivated, for whatever reason, to manage and protect our ecological assets.

You may notice that contacts for the Burnett Mary Region have been added on this page. This newsletter is now being distributed across the Burnett Mary and I welcome all readers from this region.

I hope you find this edition interesting, and perhaps even motivating. Thanks to all contributors, and as always, I welcome any stories or images that you wish to share.

Deborah Metters
Land for Wildlife
Regional Coordinator
SEQ Catchments

Landholder Registrations, Land for Wildlife SEQ - 01/06/2009

Registered Properties	Working Towards Registration	Total Area Retained	Total Area under Restoration
2535	550	45,992 ha	2,744 ha

Forward all Letters to the Editor, Fauna Vignettes and My Little Corner contributions to:

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SEQ Catchments
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fauna vignettes

Fauna Vignettes
is a new feature designed for you - Land for Wildlife members - to send in images of wildlife from your property. In 2009, all contributors to Fauna Vignettes will receive a free *Suburban and Environmental Weeds of South-East Queensland* DVD valued at $64.90. Send good quality images and explanations to the Editor (see pg 2).

Lace Monitors and Chook Pens

The resident pictured makes regular visits to our chook house leaving with a skin full of egg yolks. It is not interested in swallowing shells. Also is not interested in being afraid of humans. An excellent tree climber, it prefers the shady side while waiting for a chance to visits its favourite restaurant.

This Lace Monitor lizard is only the second one to be seen on our property at Chambers Flat in the 15 years we have been here. We first noticed empty egg shells in the chicken house and eventually saw the culprit leaving the shed one day. In appreciation of its presence, the lizard is allowed to take some eggs on each visit.

Lorna Tolleson and Keith Sayers
Land for Wildlife members
Chambers Flat

In Praise of Macaranga

For 25 years, I have been developing a native rainforest garden that now extends over 7 acres and has recently been registered with Land for Wildlife. Not a year goes past but I sing the praises of Macaranga - in my opinion the outstanding pioneer rainforest plant in the South East Queensland corner.

Requiring no special attention, it grows fast and tall in the forest (bushy in the field) allowing a regular influx of filtered light that favours understorey species. In lightly-forested or drought situations, it sheds its leaves that provide heavy mulch for when conditions improve and things return to normal.

You can prune Macarangas as much as you like (Energex trimmers hack into it regularly at my place) but it quickly regains shape. I let them grow naturally admiring their splendid habits and the birds (lorikeets, king parrots, brown pigeons) that favour their flowers and fruits and spread their seeds.

No plant has been as useful and praiseworthy to my eyes.

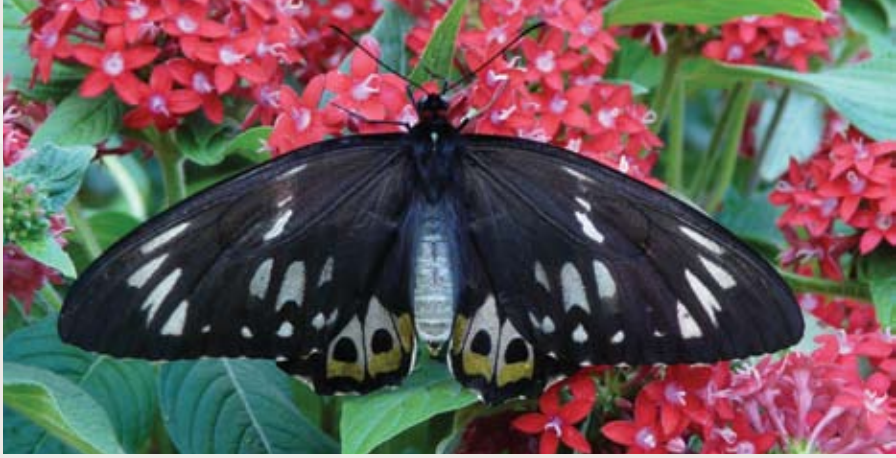
John Hornsey
Land for Wildlife member
Clagiraba, Gold Coast

Macaranga (*Macaranga tanarius*) in flower.
Photo by Darryl Larsen.

fauna report

Birdwing Butterflies are Breeding in Brisbane!

Article by Dr Don Sands
President
Richmond Birdwing Recovery Network



Richmond Birdwing Butterfly female (above) and male (below). Photos by Ray and Pam Seddon, Richmond Birdwing Recovery Network.

Richmond Birdwing Butterfly egg.
Photo by Nick Clancy.

Like many other butterflies, the beautiful "Vulnerable" listed Richmond Birdwing Butterfly (*Ornithoptera richmondia*) is under severe threat of disappearing from Brisbane.

It is threatened by the loss and disturbance of habitat and corridors, a lack of larval food plants, spreading invasion of weeds and drought stress. However, now the future of these butterflies is looking more colourful thanks to the committed efforts of the Richmond Birdwing Recovery Network (RBRN). Many RBRN members, private landholders and catchment groups across the city and the wider SEQ region have been cultivating and planting many of the birdwing food vines (*Pararistolochia* spp.).

In early March this year, a male and female Richmond Birdwing Butterfly were observed near the Indooroopilly bridge and a week later an egg and several larvae were found on the carefully maintained birdwing vines planted not far upstream from this sighting. This is very exciting news as the last observed breeding in Brisbane occurred almost a decade ago, at Chapel Hill in the summer of 2000.

There may now be enough birdwing vines in the western suburbs of Brisbane to support this first reproducing population and sufficient vines across the city and greater area to prevent in-breeding of the butterflies within the highly fragmented landscape.

The RBRN are a group who promote the protection and conservation of the Richmond Birdwing Butterfly, its food plants and habitats across Brisbane. The RBRN promote liaison between community members, catchment groups and state and local government authorities. The RBRN acknowledges the support of Brisbane City Council, through the Environmental Grants Program, SEQ Catchments, State and Federal Governments grants, and many dedicated, passionate and patient members.

For more information on how you can help bring back the birdwing butterfly and other insects of conservation concern, please visit www.richmondbirdwing.org.au

Richmond Birdwing Butterfly larvae.
Photo by Nick Clancy.

Planted Richmond Birdwing vine supported by bamboo posts and twine. with a birdwing larvae.
Photo by Deborah Metters.

practicalities

Pardalote Housing

Article compiled by Peter Copping
Land for Wildlife Extension Officer
Ipswich City Council

Based on experience by
Jim and Pat Ledwith
Land for Wildlife members,
Purga

In 1981, Jim and Pat Ledwith purchased a small farm at Purga in the Bremer Basin. Their land borders Warrill Creek which runs from Moogera Dam in Boonah and meets the Bremer River at Amberley. Until the purchase, the property had been used mainly for grazing and was virtually treeless and badly eroding along Warrill Creek.

Jim and Pat realised that their immediate aim was to stop the erosion. They have been so successful in doing so, that in 1998, Council offered them Land for Wildlife membership and a voluntary conservation agreement as well.

Home-made nest boxes for pardalotes using hollow bamboo, recycled tins and newspaper.

Very early in the project, Jim and Pat realised that their nasty bare earth creekbank, was in fact providing townhouse accommodation for dozens of pardalotes. This left them in a difficult situation: "to plant, or not to plant", that was the question. Many of us would have spent some time mulling over the choice.

Jim, however, is not the man to let high density residential land get in the road of his forest! His solution was brilliant, and yet brilliantly simple. He reasoned that "to plant, or not to plant" was *not* the question at all. Rather, he decided that the crux of the issue was "to house, or not to house". This simple step outside of the box, coupled with a dense stand of introduced bamboo that he was busy cutting down, led to his most remarkable invention: Pre-fabricated Pardalote Pads!

Jim constructed a couple of habitat boxes out of lengths of hollow bamboo, recycled tins and newspaper.

He set them up in the garden where he could monitor their use.

The first trial was so successful, that he went into mass production. Soon he had pardalotes moving into virtually every one of his tubes, throughout the garden, the shed and even on the verandah.

Today, the creek bank is fully vegetated, and the Ledwiths have more pardalotes than ever before. And the little critters are quite happy to share the garden with Pat, Jim, their children and grandchildren.

1981 active erosion along Warrill Creek.

2008 clearly an amazing improvement.

Pardalote tubes in the shed...

... and in the garden.

weed profile

Creeping Lantana - The Forgotten Lantana?

Article and photographs by Scott Sumner
Land for Wildlife Extension Officer
Brisbane City Council

The author, Scott Sumner, with a bushland understorey covered in Creeping Lantana.

Typical purple-lilac flowers and red fruit of Creeping Lantana.

Creeping Lantana (*Lantana montevidensis*) is the much smaller cousin of the well known and despised shrub Lantana (*Lantana camara.*) It is a creeping or scrambling, low, woody ground cover with square stems and leaves to 30 mm.

Landholders may recognise the dense mats of profuse purple-lilac lantana flowers which develop dark brown or purple-black fruit 2-8 mm. The fruit (each capable of producing two seedlings) are predominantly spread by birds and water, however the plant itself is capable of reproducing vegetatively when horizontal stems touch the soil and take root.

Landholders may also recognise the distinctive scent emitted from crushed leaves beneath their feet whilst walking through infested areas.

Creeping Lantana is not new to South East Queensland (SEQ). The first mention of Creeping Lantana as a garden escapee or weed is by Bailey and Tenison Woods (1879) who recorded the species in the Brisbane River area. The Queensland Herbarium has specimens that indicate Creeping Lantana had naturalised near Ipswich by 1888.

"Creeping Lantana is not an easy weed to control as it has a tuberous woody taproot"

Perhaps Creeping Lantana has been overshadowed by the much more obvious *Lantana camara*, but in the Eucalypt forests of SEQ it has become a significant pest by dominating the understorey, out-competing native groundcovers and grasses, and inhibiting the natural regeneration of shrubs and trees. Its ability to spread has earned it a ranking in the top 20 of the 200 most invasive environmental weeds in SEQ.

Creeping Lantana can adversely affect both native plants and animals. Brisbane City Council has identified Creeping Lantana as a significant threat to the Collared Delma (*Delma torquata*) a rare small legless lizard which requires habitats with many small exposed rocks that are in contact with the soil. The extremely hardy Creeping Lantana flourishes in these rocky soils forming thick mats which cover these surface rock habitats. It can also affect many other wildlife species by reducing the availability of native food plants.

In the Ipswich region, Creeping Lantana has been identified as a threat to the nationally endangered plant *Plectranthus habrophyllus* which grows on rock outcrops of sandstone in eucalypt woodland. The main identified

So-called "ornamental" varieties of white, lilac and yellow flowering Creeping Lantana are still a common sight in gardens and parks. These commercial breeds previously thought to be sterile can in fact produce viable seed or hybridise with feral varieties, increasing genetic variation in populations of both Creeping Lantana and the larger *Lantana camara*.

This continual mixing of genes may enhance the ability of lantanas to evolve and adapt to new environments in Australia. This is one of the many good reasons that all varieties of lantanas are declared pests and banned from sale and deliberate spread in Queensland.

Creeping Lantana used in landscaping.

threats to *P. habrophyllus* are competition from introduced weeds, such as Creeping Lantana, which also increases fuel loads resulting in increased fire intensity and frequency.

Creeping Lantana is not an easy weed to control as it has a tuberous woody taproot called a xylopodium which acts as a carbohydrate storage organ allowing the species to resist fire, drought and herbicide damage. Fire will not kill Creeping Lantana. It re-sprouts from the taproot beneath the soil after the first good rain. However, fire can help to reduce the quantity of lantana seed in the soil seed bank. Follow-up control after a controlled burn is critical.

Some landholders have experienced success with manual control of Creeping Lantana by cutting the plant back to the main stem and gently "tickling" the woody root out of the soil with a small digging implement. Care needs to be taken to not break the root as it will re-shoot from the root left in the ground. This labour intensive method is practical only for small outbreaks and requires patience and a good set of knees.

There are many herbicides registered for foliar spray use on Creeping Lantana but the timing of application is absolutely critical for effectiveness. For example, trials undertaken using glyphosate based herbicides applied during the major growing seasons (spring, summer and early autumn) failed to provide any control, killing all the grasses and leaving patches of Creeping Lantana and bare ground. Glyphosate applied at the end of the growing season (late autumn) gave good control.

Fluroxpyr based herbicides give excellent control as long as it is applied when plants are flowering. Fluroxpyr herbicides also have the benefit of being broad-leaf selective so they will have little or no effect on most monocots (grasses, mat rushes, flax lilies etc.) which will, in turn, help to out-compete any regenerating Creeping Lantana.

Landholders who have the misfortune of having this weed on their property should not despair. With dedicated persistence and the employment of effective control techniques as mentioned above, eradication can eventually be achieved. If only small patches are present, they should not be ignored. Attend to them without delay to prevent its further spread. Give this little creep the flick!

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Queensland Herbarium (for hard to identify plants).

fauna profile

Giant Golden Orb-weaver

Article by Andrew Bailey
Land for Wildlife Extension Officer
Ipswich City Council

Introducing the Giant Golden Orb-weaver (*Nephila pilipes*). This particular species is perhaps one of the more colourful of the *Nephila* species found in Queensland.

In the orb spider world, the female is the larger of the genders. Females often have a body size of between 3 and 5 cm, with a leg span often stretching up to 20 cm. The female's size absolutely dwarfs that of the male of the species, whose body size reaches only a mere 5-6 mm.

The Giant Golden Orb-weaver differs from other *Nephila* species as its legs are generally longer, more slender, with distinct yellow patches under the leg joints and red-coloured palps (small leg-like appendages either side of the fangs).

Giant Golden Orb-weavers differ from other *Nephila* species in that they bury their egg sac (containing over 2000 eggs) in leaf litter rather than above ground like other orb spiders are known to do.

The female Giant Golden Orb-weaver (pictured right) was discovered in the Mount Mort area south west of Ipswich. The discovery was completely by accident as the picture might suggest. Whilst I was scrambling down from a large rock, completely focussed on my landing spot, I failed to notice the enormous golden web in front of me. Launching head first into the spider's sticky web, I couldn't help but feel a little wrapped up like Frodo Baggins in the third instalment of the Lord of The Rings movie trilogy.

I found myself struggling to break through the strong cable-like golden web. I was initially unsure of the scale of what had just happened until a whole bunch of long black legs appeared from over the brim of my hat, slowly making their way onto my face. Thus instantly confirming what I feared most. After letting out one very manly scream, I threw off my hat and moved very calmly, yet swiftly away from the area. The spider quietly sat on my hat as if frozen, perhaps to avoid being detected. After gathering some composure back, my colleague and I managed to take a few photos before placing her on the forest floor.

Dr Robert Raven, Senior Curator of Arachnida at the Queensland Museum, later responded to our email enquiries about the species. In his reply, Dr Raven mentioned that the species had rarely been recorded south of Nambour and was possibly only present due to the recent rains. Surprisingly, Dr Raven also mentioned that we "actually have some bigger spiders in the area". One thing I know for sure is I will be looking up instead of down a lot more when I'm out.

It just goes to show, that we can stumble across (or in this case, into) some of the most surprising things out in our environment. Keeping an eye out for them doesn't really seem to matter, they can appear when least expected and sometimes outside of their known or natural range.

"...a whole bunch of long black legs appeared from over the brim of my hat..."

A female Giant Golden Orb-weaver and the remainder of its web on my hat. Despite their size, female Giant Golden Orb-weavers only live for about one year. Photo by Andrew Bailey.

Golden Orb-weavers (*Nephila* spp.) gain their name from their yellow webs.

A female Giant Golden Orb-weaver on a Land for Wildlife property at Flaxton. Photographs by Deborah Metters.

my little corner

Have your reflections on your Land for Wildlife property printed in My Little Corner in 2009 and receive a free *Suburban and Environmental Weeds of South-East Queensland* DVD valued at $64.90. Send a max. of 200 words and a min. of 3 good quality images to the Editor (details on pg 2).

Myself, and a lot of others, too often wonder why some people move from an urban environment to a rural bushland one, and then change it to the same type they left - and manage to get away with it. Perhaps this story may sum it up better.

Graham Reese
Land for Wildlife member
Rochedale

flora profile

'Wattle' Help Restore Wildlife Habitat? Some ecological and habitat restoration values of Acacias

Article by Nick Clancy
Land for Wildlife Extension Officer
Sunshine Coast Regional Council

Article adapted from Victorian Land for Wildlife Note 'Wattles and Wildlife' by Sarah Berry & WB (August 1999).

Black Wattle (*Acacia leiocalyx*) in flower.

Wattles are an iconic group of Australian plants; indeed they take centre stage on our nation's coat of arms. Entire regions of Queensland such as the Brigalow Belt (*Acacia harpophylla*) and the Mulga Country (*A. aneura*) are defined by the locally dominant wattle or *Acacia* species. However it seems many Australians have a love-hate relationship with wattles.

To me, wattles typify the hardy resilience required to survive in the Australian bush. Indeed it is probably this very quality that frustrated many early settlers as they struggled to satisfy government requirements to clear and maintain new land holdings. Imagine hand clearing acres of bush, burning it, only to find that wattles came back thicker than the original bush!

Unfortunately the disdain for this diverse genus of plants seems to have become culturally ingrained amongst some present day land managers. This article aims to highlight some of the beneficial qualities of our iconic wattles.

The *Acacia* genus consists of about 1350 species worldwide, including 1000 in Australia. In SEQ we have around 120 recognised species of wattles. From wallum to rainforest, it seems every ecosystem type has at least one representative of the wattle clan.

Queensland Silver Wattle (*Acacia podalyriifolia*) is a popular ornamental plant, but it can colonise bushland areas outside of its natural range.

Wattles and Birds

Wattle seeds provide a valuable food source for King Parrots, rosellas, Red and Yellow-Tailed Black Cockatoos, wattlebirds and some pigeons. Smaller forest birds such as Brown Thornbills and Fan-tailed Cuckoos glean insects directly from the foliage of wattles.

Many wattles possess glands at the base of the leaves or edge of the phyllode (leaf stem that has been modified to function like a leaf). During flowering this gland may produce a sugary fluid that attracts a wide variety of birds including New Holland, White-naped, Yellow-faced, White-plumed and Spiny-cheeked Honeyeaters, Silvereyes and thornbills. The flowers of the Black Wattle (*Acacia melanoxylon*) have nitrogen rich pollen that Red and Little Wattlebirds and a range of honeyeaters also feed on.

Wattles are often a dominant feature of regrowth areas where Yellow-tailed Black Cockatoos can often be seen (or heard) chewing the trunks and branches as they seek out wood-boring grubs. In such areas, taller wattle species such as *Acacia melanoxylon* and Hickory Wattle (*A. disparrima*) provide perches for aerial insectivores such as cuckoo-shrikes. While at the other end of the spectrum the smaller, compact shape, dense foliage or prickly nature of some wattles eg. Prickly Moses (*A. hubbardiana*) provide shelter and nest sites for a range of smaller birds.

"From wallum to rainforest, it seems every ecosystem type has at least one representative of the wattle clan ."

Wattles and Mammals

In winter, energy-rich food sources such as nectar and insects tend to be scarce. During this time Acacia gum provides an important source of carbohydrate for both Squirrel and Sugar Gliders. The value of Acacia gum as a food source varies between forest types and Acacia species.

Research in Victorian forests has shown that the population density of Sugar Gliders is determined by the amount and availability of plant exudates (eg. gum), ranging from a minimum of one animal per hectare where wattles are absent, to as many as 12 Sugar Gliders per hectare where wattles are abundant. Yellow-bellied Gliders also occasionally feed on Acacia gum.

Wattles provide food and habitat for a range of other mammals. Microbats and antechinus will shelter under the loose bark of dead wattles, as will geckoes, skinks, as well as a wide range of invertebrates.

The number of Sugar Gliders present in a forest is determined by the amount and availability of gum that is exuded from wattles. Photo by M. Atkinson.

Wattles and Invertebrates
The foliage, nectar and pollen of wattles attract many insects. During flowering, the sugary glands attract native bees, wasps and ants which feed on the sugars produced.

Wattle seeds possess an oil-rich attachment (elaiosome) that is designed to attract ants which, in turn, aid in the seed dispersal of some Acacia species. Reportedly, some weevils predate so heavily on wattle seed that they can reduce annual seed production by 15-25%.

Thirty-six species of wattle are known to be food plants for Australian butterflies. The wide spread Black Wattle (*Acacia melanoxylon*) is a larval food plant for the Tailed Emperor, while the larvae of the Fiery Jewel Butterfly feeds on the Hickory Wattle (*Acacia disparrima*).

"What we must learn to do is harness the tremendous vegetative energy of the wattle. As land managers we should allow it to improve soils, halt erosion and create ecological diversity, and see that phenomenally quick growth, leaf litter and all that dead and rotting wood for the great benefits and not negatives, they can present us with."
Spencer Shaw, Bush Regenerator.

Wattles and Erosion Control
Wattles establish quickly, even in poor soils. They form a relatively quick canopy over bare or denuded soils that helps protect vulnerable soils from erosion during intense downpours. Used along degraded watercourses wattles can rapidly provide greater bank stability, reducing erosion and filtering run-off and sediment input into streams.

Wattles for Revegetation or Cover Crop
Many wattles have high frost resilience and can be used as a cover crop to protect frost susceptible species. Wattles grow much quicker than most other species and in doing so provide protection from frost and full sun. Wattles fix atmospheric nitrogen, allowing them to grow well in soils low in both nitrogen and phosphorus. Post fire, wattles generally regenerate rapidly and are instrumental in restoring the nitrogen balance within recently burnt forests.

But they don't live very long…
Wattles have a reputation for being short-lived. This is true of many *Acacia* species, but not all. As a general rule species with bipinnate foliage tend to have shorter life spans, while others such as Black Wattle (*Acacia melanoxylon*) and Hickory Wattle (*A.disparrima*) can live considerably longer.

There are many variables that can affect the longevity of a tree. Wattles are 'pioneer' (first coloniser) species that exploit the high light and low competition that occurs following disturbance. Wattles are legumes,

Many invertebrates are attracted to Black Wattle (*Acacia melanoxylon*) pollen. Photo by Deborah Metters.

they provide considerable benefits to habitat restoration projects because they establish rapidly, condition the soil and provide shelter for slower-growing species.

In revegetation plots, larger wattle species can ultimately cause some damage to adjacent smaller, slower growing plants when they grow old (senesce) and fall. This reflects succession in a naturally regenerating system, so if your objective is to create wildlife habitat this shouldn't be reason for concern. If that's not sufficient reassurance then such damage can be reduced or even avoided by undertaking regular pruning. Such pruning can be a valuable resource to assist in building up humus, which is often lacking in the early stages of many revegetation sites.

Rather than being seen as a mess to clean up, dead fall should be viewed as the catalyst for the recommencement of fungi and invertebrate driven decomposition; vital ecological processes that underpin the renewal of forest systems.

Wattles and Natural Pest Control
Sugar Gliders can be common in suitable habitat where wattles are present. Sugar Gliders prey upon scarab beetles and other invertebrates which defoliate eucalypts and contribute to dieback. One study estimated that each Sugar Glider ate 3.24 kgs of insects per year. Hence, wattles and other understorey species which are important to larger predators indirectly contribute to biological control of pests and maintaining the health of native vegetation.

Ornamental Values
Many wattles flower in winter when there's often not much else providing colour in the garden. The vibrant yellow flowers and attractive foliage of some wattles has led to them being included in gardens all around the world as ornamentals.

Warning - Environmental weeds
As a result of garden plantings, some wattle species have established themselves outside of their natural range and have colonised bushland areas. Some examples are the Queensland Silver Wattle (*Acacia podalyriifolia*), Zig-Zag Wattle (*A. macradenia*), Brisbane Wattle (*A. fimbriata*) and Cootamundra Wattle (*A.baileyana*). Once these plants reach maturity a large quantity of seeds will remain viable on the forest floor for a considerable duration. In the event of a wildfire or similar disturbance, non-local wattles pose a significant threat as invasive species. For this reason it is recommended that you only plant wattles that occur naturally in your local area.

Green Wattle (*Acacia irrorata*) planted as a cover crop in a rainforest revegetation project. Wattles can be useful for protecting frost sensitive seedlings and quickly establishing a canopy. Photo by Nick Clancy.

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weed profile

Water Mimosa: An aquatic weed used in Asian dishes threatens the health of our waterways

Article by Rachel Booth
Land for Wildlife Extension Officer
Logan City Council

Water Mimosa (*Neptunia oleracea*) is an aquatic weed that can release nitrogen into waterways, which affects water quality and can lead to increased algae. It is thought to be native to Mexico, Costa Rica and northern South America. It is a perennial creeping or aquatic herb which either grows prostrate near the water's edge or floats by spongy-fibrous stems.

Leaves are sensitive and close when touched and are arranged in opposite pairs along the stem. It is easily recognisable in summer when it forms bright yellow, ball-shaped flowers. Fruit are a distinctive flattened seed pod. This plant has a thick taproot that becomes woody.

Water Mimosa takes root on the banks of watercourses but can grow out over the water surface, forming floating rafts. Stems can be up to 1.5 metres long becoming detached from primary root system and forming spongy-fibrous swollen internodes (to float) and rooting at nodes when growing in water.

It is found in fresh water ponds, swamps and canals in South-East Asia at low altitudes up to 300 m. The plant will perish once the water level falls and it prefers 30-80 cm depth of slow moving water, full sun and hot humid conditions to survive.

Water Mimosa fixes its own nitrogen via a symbiotic relationship with soil bacteria stored in specialised root nodules. The release of nitrogen into water bodies can lead to increased algal blooms and increase the vigour of associated Class 2 pest plants such as Water Hyacinth, Water Lettuce and Salvinia. Dense growth of Water Mimosa may also increase water loss from dams through increased transpiration from the plants leaves.

It is not known when Water Mimosa first arrived in Queensland, but the first record is possibly from a glasshouse in the Brisbane Botanic Gardens in 1979.

In 2006, two occurrences were recorded in South East Queensland, one of which was found growing in a dam for cooking purposes in Logan City Council. More recently several additional crops were located by Logan City Council pest inspectors. These crops were thought to be used by some South-East Asian communities as a vegetable and are being sold in local farmers' markets in the Brisbane area.

"[Water Mimosa] was found growing in a dam for cooking purposes in Logan City."

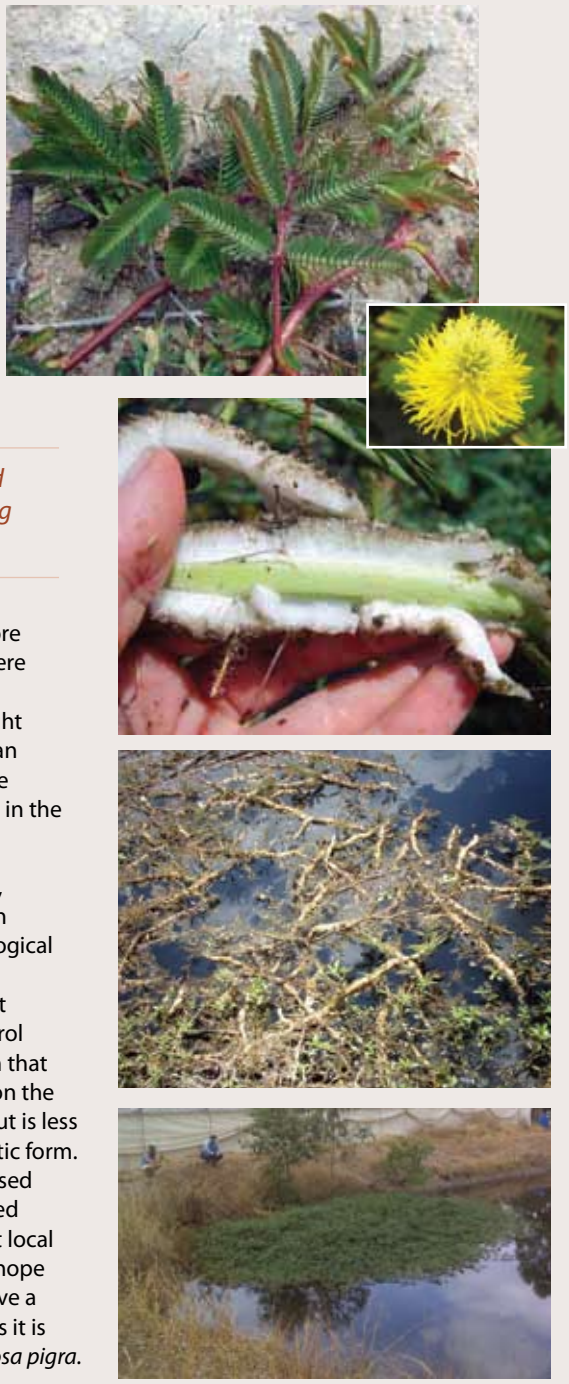
Potential good news is that a moth, *Neurostrota gunniella*, that has been introduced to Australia for the biological control of another Class 1 pest in Queensland - *Mimosa pigra* or Giant Sensitive Tree, could also help control Water Mimosa. Studies have shown that *Neurostrota gunniella* lays its eggs on the terrestrial form of Water Mimosa, but is less inclined to lay its eggs on the aquatic form. *Neurostrota gunniella* was not released in South-East Asia because it showed substantial attack on the important local vegetable, Water Mimosa. There is hope that *Neurostrota gunniella* could have a greater impact on Water Mimosa, as it is more soft and fleshy, than on *Mimosa pigra*.

Due to its potential to have detrimental impacts on Queensland's waterways, Water Mimosa is a declared Class 1 plant under the *Land Protection (Pest and Stock Route Management) Act 2002*.

A Class 1 pest is not commonly present in Queensland and has the potential to cause an adverse economic, environmental or social impact. It is illegal to transport, supply or release Class 1 plants under the Act. The community should not attempt to control a Declared Class 1 pest before contacting their local council, or preferably the Dept of Primary Industries and Fisheries (DPIF) to gain accurate identification and up-to-date control methods.

References

Queensland Primary Industries and Fisheries - www.dpi.qld.gov.au.



Water Mimosa (top to bottom):
Leaves, flower and spongy fibrous layer covering the stem.
Photos by DPIF www.dpi.qld.gov.au

Floating plant showing the thick woody stem and the infested dam found at Logan.
Photos by Logan City Council Pest Officers.

Water Mimosa Declaration Details

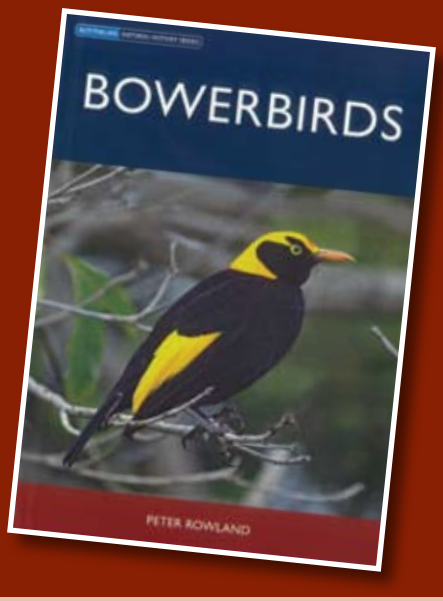
Declared Class 1 plant under the *Land Protection (Pest and Stock Route Management) Act 2002*

- ☑ Importation, possession and sale is prohibited.
- ☑ Landowners are required by law to keep their land free of this plant.
- ☑ If you have seen this plant call DPIF on 13 25 23.

book reviews

Bowerbirds

by Peter Rowland



The fascinating group of birds commonly known as bowerbirds are the quintessential interior decorators of the forest floor. Unique to Australia and New Guinea, male bowerbirds construct and decorate ornate bowers using a variety of organic and sometimes inorganic materials to attract female mates in an interesting display of creative courtship.

Bowerbirds condenses published knowledge of this unique family of birds into an information loaded paperback that is accessible to bird enthusiasts of all levels. Along with introductory chapters on bowerbird classification, evolution and details of their habitat requirements and distribution, the book delves into key threats to the family including some of the predicted effects of climate change.

It was extremely concerning to learn that a third of all forested habitats favoured by bowerbird species have been lost since European settlement – food for thought for all of us living in an increasingly urbanised society.

The book contains a key to bowerbirds and gives well presented and informative accounts of all species with an emphasis on those that inhabit Australian forests.

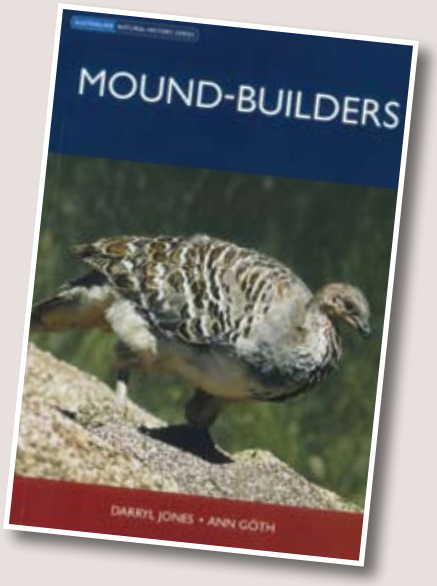
The colour photos of the birds and their bowers are beautiful and really capture the fascinating and unique approach to bower building each species adopts including one Satin Bowerbird that had decorated his bower with over 100 blue straws!

Overall this book was a pleasure to read and will sit comfortably within any bird enthusiasts reference library. I found it easy to approach, informative and a glowing tribute to Peter Rowland's passion for our feathered bower-building friends.

Published by CSIRO Publishing, 2008
Paperback, 144 pages
Colour and black & white images
ISBN: 9780643094208
Price: $39.95

Mound-Builders

by Darryl Jones and Ann Goth



Growing up in the inner-Brisbane area, one comes to quickly recognise the trademark mound of the Australian Brush-turkey. But for what purpose does this mound serve? And why should we learn to love these scrambling piles of leaves and sticks and tolerate their presence in our suburban backyards? The simple answer is because the mounds are nests housing and incubating eggs – eggs left to fend for themselves in a bizarre but ingenious approach to parenting.

Mound-builders is a comprehensive account of three Australian species of mound-building birds from the family Megapode – the Scrubfowl inhabiting the humid tropics; the Brush-turkey inhabiting densely forested areas from Cape York to Sydney; and the Mallefowl inhabiting the arid interior.

The most remarkable thing about these birds we colloquially refer to as mound-builders is that they do not incubate their eggs using body heat but rather exploit naturally occurring heat sources such as solar energy and the heat generated from decomposing organic matter to incubate on their behalf. This is no mean feat; and as such, the birds continually check their mound regulating temperature by adding and removing layers as required thereby ensuring their eggs the best chance of survival.

As intriguing as this approach to egg incubation is, it gets even more fascinating as the book delves into the parentless life of mound-builder hatchlings as well as the complex social organisation underpinning Megapode survival. The future management for conservation of these unique birds in Australia is also discussed. Mound-builders covers all bases in introducing these unusual birds in an easily accessible format that readers of all expertise can enjoy.

I must admit as someone who has grown up in the presence of Brush-turkeys in and around suburban Brisbane my whole life I had taken mound-builders for granted. After reading this logically assembled and well illustrated book I can safely say I have developed a newfound appreciation for these remarkable birds and I look forward to my next encounter.

Published by CSIRO Publishing, 2008
Paperback, 128 pages
Colour and black & white images
ISBN: 9780643093454
Price: $39.95

Book Reviews by Robbie Burns
Conservation Partnerships
Support Officer
Brisbane City Council

Cornubia Forest Park Expansion

Article and photos by Lyndall Rosevear
Principal Environment Officer
Logan City Council

landscape conservation

Logan City Council and the Federal Department of Environment, Water, Heritage and the Arts recently jointly purchased an area of nationally significant bushland in Cornubia. The 43 hectares of bushland is located near Daisy Hill Conservation Park, adjacent to the Cornubia Conservation Park, on the northern border of Logan City Council.

Eleven Land for Wildlife properties are located within Cornubia; some of which are connected to Cornubia Forest Park. These properties provide a vital buffer around, and corridor between, our conservation reserves.

Cornubia Forest Park contains an endangered Regional Ecosystem identified as RE 12.11.23 containing Blackbutt (*Eucalyptus pilularis*) open forest. The park contains the highest peak in eastern Logan from which there are views to North Stradbroke Island. The bushland provides important habitat for many significant species including Glossy Black Cockatoos, Koalas, Powerful Owls, Greater Gliders and the Great Barred Frog.

Cornubia Forest Park bushland was identified by Logan City Council and the Logan community as being of high biodiversity significance. In addition, the site was confirmed to be of national environmental significance and the Federal Government allocated a $1.5 million National Reserve Scheme (NRS) grant to assist Council with its purchase. Logan City Council contributed $1.2 million to the purchase, with all money sourced from the Environmental Levy paid by Logan ratepayers.

The official opening to the expansion of Cornubia Forest Park was held on 19 April with the Federal Minister for the Environment, Water, Heritage and the Arts, The Hon. Peter Garrett, along with other dignitaries in attendance. The day was a great success with Logan City Council staff handing out free native plants to community members and leading a bush walk through the newly acquired area.

The next step in the acquisition process is to develop a management plan for the area, which will take into account management actions for the many significant species found on the site.

Logan City Council has also identified a number of other environmentally significant properties throughout the city and will be working in partnership with the Federal and State Government and other South East Queensland Councils to secure more funding to protect vital habitats for many of the local significant species.

Land for Wildlife property owners play a vital role in our community to provide wildlife corridors and buffers between our conservation reserve systems to creeks and other tracts of remnant vegetation.

(above) The Hon Peter Garrett presenting a tree to Danielle Bain of WPSQ at the official opening of the expansion of Cornubia Forest Park.

(top of page) Sand dunes of North Stradbroke Island can be seen from Cornubia Forest Park.

(right) Attendees walk through the new reserve.

flora facts

Precious Chlorophyll

Article by Keith McCosh
Land for Wildlife Extension Officer
Scenic Rim Regional Council

Fan Palm (*Licuala ramsayi*) by Darren McPherson.

What is the most valuable chemical compound in the world? Not gold! Not diamonds! Not petroleum! But a green pigment called chlorophyll. Where would we be without it? The world as we know it, with 10 million species of life and still counting, was made by chlorophyll. The blue planet that we know so well (Earth) should be known as the Green Planet.

Chlorophyll is a large organic molecule (i.e. based on carbon atoms) that captures light from the Sun – a process called "photosynthesis"- and turns it into electrical energy that then fuels all the millions of chemical reactions of life. It is the greatest solar battery.

Using chlorophyll, plants and algae create simple sugars from carbon dioxide in the air, and give off oxygen in the process. These simple sugars then form the basis for bigger and more complex compounds – in fact all the compounds of life. Plants, and other green things, are called "primary producers" as they produce all the chemical building blocks that the rest of us consumers depend upon. All the food you eat derives from plants. All the tissues in your body ultimately come from plants. We even eat chlorophyll.

Very early in the history of life on Earth, one species (a plant and algae ancestor) invented chlorophyll and thrived. Over hundreds of millions of years, the toxic atmosphere of the young Earth (carbon dioxide and ammonia) was changed to the air we breathe today – solely by the action of chlorophyll. And in all this time, no other compound has been "invented" by Nature to do the same thing. Chlorophyll stands alone as the greatest supporter of life on Earth.

Chlorophyll is a complex compound. Photosynthesis likewise is very complex with numerous intermediate stages. Only in recent times have humans picked the lock and worked out how it all happens (we think). Many Nobel prizes were won in this search.

> *"Chlorophyll stands alone as the greatest supporter of life on Earth."*

At the molecular level, chlorophyll consists of an antenna and a reaction centre. The antenna section is excited by photons of light and gives off electrons that move to the reaction centre where complex chemicals are created. In the process, carbon dioxide is consumed and oxygen created. The chlorophyll molecule can be described chemically as a tetrapyrrole ($C_{55}H_{72}O_5N_4Mg$). The element magnesium is a key atom at the heart of chlorophyll. Thus magnesium deficiency in plants is characterised by yellowing of leaves because they can't make green stuff.

Plants have cells in their leaves that have special features called chloroplasts. Here resides chlorophyll. Plant cells organise water and carbon dioxide to get delivered to the chloroplast and move sugars to other parts for further processing. Plants make sure that sunlight can reach chlorophyll and removes the waste product oxygen. Most plants shed their old leaves so in order that precious chlorophyll is not wasted it is withdrawn to be used on new leaves. The old leaves turn brown or yellow and fall off the plant.

Chlorophyll is green by virtue of the fact that it absorbs all the red and blue fractions of white light and leaves the green fraction for us to see. And we do this very well – see green that is. We have a special agent called "rhodopsin" in our eyes that enables us to do this very efficiently. We were born to see green. We were born to eat green. We were born to love green.

Moreton Bay Fig (*Ficus macrophylla)* by Martin Bennett.

Fallen Chinese Elm leaves by Deborah Metters.

Land for Wildlife Regional Coordination is proudly managed by SEQ Catchments with support from the Australian Government.

Koala photo courtesy of Moreton Bay Regional Council.

Updated Fire and Biodiversity Fact Sheets

The Fire and Biodiversity Consortium has recently updated two of their *Living with Fire* fact sheets.

Living with Fire: Fire management for protected vegetation discusses the steps that landholders with remnant bushland should undertake before a planned fire. This includes a fire management checklist and who to contact.

Living with Fire: Bushfire safety for your home fact sheet discusses property design, house survival during bushfires, reducing fine fuels and plant selection. There are also examples of well prepared and poorly prepared houses in bushland settings.

The fact sheets have up to date information with new photos and diagrams. Both are essential reading for landholders thinking about undertaking a burn on their property and for those who want to be prepared for a fire either planned or unplanned.

Fact sheets are available with the rest of the Fire and Biodiversity Consortium's products at their website www.fireandbiodiversity.org.au or from your Land for Wildlife Extension Officer.

Article by Stephanie Reif
Land for Wildlife Extension Officer
Sunshine Coast Regional Council

National Koala Conservation and Management Strategy

The Australia Government is developing a strategy for Koala conservation and management and would like your input. Public submissions on the draft National Koala Conservation and Management Strategy 2009-2014 close on 5 August 2009.

For more information and a copy of the draft strategy can be found at http://www.environment.gov.au/biodiversity/publications/koala-strategy or ask your local Land for Wildlife Extension Officer for a copy.

Opinions expressed by contributors to the Land for Wildlife newsletter are not necessarily those of the Land for Wildlife program nor any of the supporting agencies.

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