



# LAND FOR WILDLIFE

## Southeast Queensland

Newsletter of the Land for Wildlife Program Southeast Queensland

AUGUST 2007

NEWSLETTER

## How many moth species are there in Australia?

It is estimated that Australia has between 20-30,000 species of moth, compared to about 400 species of butterfly. So why do we know so little about moths, but maintain our romanticism about butterflies?

Maybe it is simply a question of visibility – most moths do not fly around brilliantly in the sun displaying their colours like butterflies do. It would seem that the more ‘invisible’ species are, the more important they are to the whole complex system of nature, to which humans are inextricably linked.

It is important to remember that invertebrates make up 99% of all animal species on Earth. Invertebrates do not have an internal skeleton and include animals such as slugs, worms, lobsters, spiders, centipedes and a huge class of animals called insects. Moths and butterflies are insects. Many insects need to shed their external skeleton so that they can grow. Moths and butterflies have developed a process of metamorphosis to grow whereby the next stage of growth is completely different from the last, ie. larvae (caterpillar), pupae and adult (moth / butterfly) stages.

Moths grow during their caterpillar stage. As an adult they do not grow in size, and some adults don't even have mouthparts to allow feeding. However, most moths feed on nectar and fermenting or ripe fruits providing energy for flight.

So, what is the difference between a moth and a butterfly? There are many exceptions to the rules, but here are some general tips. Moths usually have feathery antennae whereas butterflies always have antenna that are clubbed at the tip. Moths generally fly at night, butterflies during the day. An accurate distinction between moths and butterflies requires examination of the mechanisms that hold the forewings and hindwings together.



*Two species of moths (Glyphipterix sp.) feeding on a daisy flower and assisting with pollination. Photo by Peter Marriott.*

Moths have an amazing ability to regulate their body temperature by shutting off the circulation of blood to parts of their body. This allows them to be able to fly at night when there is no external heating from the sun. Flying at night also limits the range of predators; however, there are frogmouths, bats and reptiles (eg. geckos) that love to snack on adult moths. Parasitic wasps and flies that lay their eggs on caterpillars are the main predators of moths, and help keep moth numbers in check.

The beautiful scales on the wings of adult moths are crucial for camouflage, deception, defence and mate recognition. Even in low-light, moths can use their vision to detect a mate or a rival. Moths also use pheromones to detect each other, with some male moths detecting female pheromones from over a kilometre away.

From an ecological perspective, moths are crucial decomposers and recyclers of organic matter. Try to think of moths as supreme herbivores. Without them, and other recyclers such as fungi, plant matter simply wouldn't decay and the forest floor would keep growing and growing. Moths also help humans directly through the production of silk, pest control (eg. prickly pear control) and pollinators of agricultural crops.

If you want to learn more about moths, such as why are they attracted to light, can they hear and their migratory patterns, check out the recently released book reviewed on page 13. Or go to [www.ento.csiro.au/anic/moths.html](http://www.ento.csiro.au/anic/moths.html) for thousands of images of Australian moths.

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# editorial

Welcome to the autumn edition Land for Wildlife newsletter for SEQ.

It has been a cold winter so far across SEQ with record low temperatures and some unexpected frosts. Not such a good time for revegetation, but still many opportunities for wildlife watching.

I am always heartened to receive articles from Land for Wildlife landholders. This edition presents an excellent article from Jeff and Glenys Canning who are lucky to share their property with a pair of Powerful Owls. I have also been watching a pair of Powerful Owls in Brisbane over the past few months- a privilege to see the behaviour of a top predator.

The Pine Rivers Shire Council's website has information about Powerful Owls including a link to hear their calls and also a sighting form to collect data about the owls. Go to [www.pinerivers.qld.gov.au](http://www.pinerivers.qld.gov.au) then click on For Residents > Living with the Environment > Native Animals > Powerful Owls.

Talking about predators, Keith McCosh presents an article about the theory of 'mesopredator release'. This theory has receive a fair bit of media lately with some scientists recommending an increase in Dingo numbers to help control foxes, cats and other feral animals. If you have an opinion about 'mesopredator release' or wish to share a story about the outcomes of pest animal control on your property, it would be great to hear from you.

The article written by Jak Guyomar, a Land for Wildlife landholder in eastern Brisbane, presents an all-too familiar story of the competing pressures of urbanisation and nature conservation. Jak's property has been owned by his family for nearly 90 years, and is now an important refuge for a diversity of native plants and animals. Jak's story also shows how Voluntary Conservation Agreements (VCAs), Conservation Covenants and the Land for Wildlife program can work together to help landholders achieve their conservation goals.

VCAs and Conservation Covenants are offered by several Local Governments across SEQ. These mechanisms can help protect the nature conservation values on your property by either attaching a covenant to the title of the land, or through a non-binding agreement. Rate rebates and other incentives are often offered if you sign up for a VCA or Conservation Covenant. Your local Land for Wildlife Officer can give you more information about VCAs.

Extending from VCAs on individual properties to a grander landscape scale, is the chance to have your property included in a UNESCO Biosphere. An article in this newsletter discusses the nomination of the D'Aguilar Range as a UNESCO Biosphere. For more information on this, visit the website at [www.gloriousnebo.org.au/biosphere/](http://www.gloriousnebo.org.au/biosphere/). An online feedback form is available from this site as well as a more detailed copy of the draft Biosphere map shown on page 3. Otherwise you can contact Dominic Hyde at the University of Queensland on 3365 2578 to discuss this issue further.

This edition also presents a detailed article on farm forestry. Some people may be wondering why a Land for Wildlife newsletter is talking about plantations. As the article suggests, farm forestry can offer a diversity of on-farm income and can also contribute to nature conservation if the plots are well planned and managed. Numerous Land for Wildlife properties are already engaged in farm forestry and this article may offer some advice about how to increase wildlife habitats in existing plantations.

Happy reading.

*Deborah Metters  
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Forward all letters to:

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Land for Wildlife Newsletter  
SEQ Catchments  
PO Box 13204  
George Street QLD 4003

## Landholder Registrations, Land for Wildlife SEQ - 25/07/2007

Registered Landholders	Working Towards Registration	Total Area Retained	Total Area under Restoration
2022	419	40,132 ha	2,871 ha

# conservation

## The D'Aguilar Range Biosphere Proposal

Article by Rosalind Leslie  
D'Aguilar Biosphere Project Officer

A local committee is progressing towards the development of a Biosphere area with a focus on the D'Aguilar Range and its surrounding landscape. Biosphere areas are regional landscapes that are managed by a voluntary agreement and strive to fulfill three basic functions: 1. conservation (protection of biodiversity), 2. development (support sustainable development and business practice), and 3. logistic (provide support for research, education and information exchange).

Biospheres are linked within an international network of areas that, like World Heritage Areas, are listed by the United Nations Educational Scientific and Cultural Organisation (UNESCO). Their ambition is to find appropriate responses to the difficulties of integrated natural resource management and sustainable development whilst protecting biodiversity. A key component of a Biosphere area is cooperative management and information exchange across communities and across agencies.

### What do Biospheres look like?

Biosphere areas generally have a protected area at their core, a buffer zone around that core and a transition area that encourages sustainable development. The transition area may adjust and change over time and not all landholders may choose to participate in its operation, but the intention is to encourage participation through incentives, guidance and other methods of support.

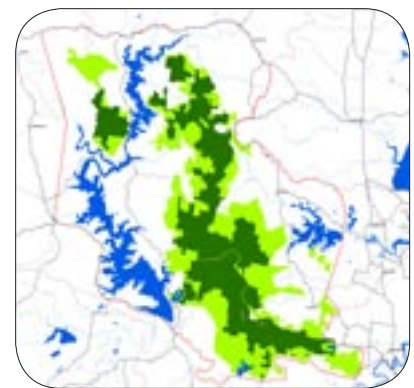
Collectively, the Biosphere zones endeavour to harmonise economic, social and environmental values and secure them into the future. Biosphere areas are maintained under the jurisdiction of the countries in which they are located. A voluntary management agreement is made between separate government agencies, business and industry stakeholders and community groups.

### What are the local benefits?

Local benefits could include support for cooperative weed control and conservation efforts, integrated fire and pest management, support for

*A grove of cycads (Lepidozamia peroffskyana) on the D'Aguilar Range.*

*A draft map showing the proposed D'Aguilar Biosphere zones - core zone (dark green), buffer zone (light green) and transition zone (red dotted line). Somerset and Wivenhoe Dams are to the west with North Pine Dam to the east.*



sustainable living and business management, support for conflict resolution, increased security for environmental integrity and amenity, community integration and support, opportunities to collectively reduce greenhouse gas impacts, increased security for community values, education and training that assists sustainable management and conservation purposes and genuine input into a long term vision for the area. Biosphere areas bring international and national recognition and through this recognition are able to attract funding for the support and management of the area.

### What does the D'Aguilar Biosphere project hope to achieve?

- To support and promote integrated management of the D'Aguilar Range and its surrounding landscape.
- To actively engage the local community (including government bodies, community groups, local industry and business) in positive and cooperative decision making and management of the Biosphere area.
- To balance and promote a diversity of values with consideration for the preservation of biodiversity, social values and economic interests.
- To conduct research, monitoring and information exchange relevant to Biosphere objectives.
- To draw up a partner management agreement that demonstrates and confirms Biosphere objectives and commitments.
- To have the area formally listed and recognised internationally as a Biosphere reserve through UNESCO.

### Why have a Biosphere Area here?

It has been projected that Brisbane will be the second largest city in Australia by 2026. It is currently the second fastest growing urban basin in the western world. Southeast Queensland is one of the most biodiverse regions in Australia (in itself one of the most biodiverse continents).

The D'Aguilar Range provides protection for a diverse range of flora and fauna including a high incidence of rare and threatened species, disjunct and endemic populations, other priority species and regionally significant ecosystems. It is the major green space in the Brisbane region. Socially, the D'Aguilar Range area provides diversity to city living and lifestyle. The pressures on this area as our population increases over time will be significant.

In order for a diversity of values (social, economic and environmental) to survive developmental pressures through time, the management of this area must involve diligent consideration, have a long term vision and be sustainable. There is a growing number of people who think it crucial that local communities (including their governments and business components) come together to make intelligent and balanced decisions about the area in which they live. The Biosphere project strives to combine academic intelligence, business skills, governance and community spirit to cooperatively manage the D'Aguilar landscape.

# fauna profile

## Powerful Owl

Article by Jeff and Glenys Canning  
Land for Wildlife landholders  
Pine Rivers Shire

As nature lovers and members of Land for Wildlife, we thought we would tell you about some special visitors to our home. For the past five years we have been privileged to share our five acre block in the Pine Rivers Shire with a pair of Powerful Owls. They usually roost in Scrub Cherry Trees (*Syzygium australe*) in a dry creek bed not far from our house and their nesting tree, a large old Spotted Gum (*Corymbia citriodora variegata*) is only a short distance away. As keen bird watchers we had heard recordings of their calls but had never seen them.

In April 2004, we were walking in the dry creek bed on our block and looked up to see a pair of very large birds with huge yellow eyes watching us while clutching the remains of a ringtail possum. They were 4-5 metres from the ground. Wanting to identify the birds properly, we ran to the house and brought back our favourite field guide. After describing the bird, Graham Pizzey goes on to say "often clutches part-eaten remains of prey e.g. ringtail possum" - perfect - we have our first sighting of these elusive animals. We studied them for about an hour, reading from the book and watching them. We looked up and realised that one of the birds had silently flown away - we hadn't heard any wing movement - nothing. No wonder they are such good hunters.

Since that first sighting we have seen them daily for weeks on end and then they move to another part of their very large territory and we don't see them for a few weeks. In late 2004 we had several sightings of the whole family roosting together (2 adults and a juvenile) - a rare sight. A few weeks ago we found our resident male Koala sharing the Scrub Cherry Tree with the pair. Unusual as owls have been known to predate on Koala young. We checked a few hours later and all three were still happily sharing the shady tree - it was a hot day!

A neighbour recently mentioned he had found several possum tails on his property and he was concerned that vandals were catching possums and cutting off their tails. We decided it was time to enlighten him. The culprits were



A pair of Powerful Owls on Jeff and Glenys' Land for Wildlife property.  
Photo by Lyndall Rosevear.

our Powerful Owls. HANZAB (the Bible on Australian birds), indicates that a pair of Powerful Owls need to catch 200-250 possums (or other major prey items) a year to survive!

We are not sure what our owls think about us. Most days we check the roost trees to see if they are in residence. We don't stay long and we don't do anything to upset them. Over the five years we've been observing them, they seem to have become quite comfortable with us. Lots of people want to come and see them. We try to accommodate this, but at the same time we are quite protective of the owls' privacy. We limit the number and frequency of people visiting their trees. The male seems to accept humans, but his mate appears nervous if we linger.

One regular visitor they seem to accept is our friend, Neil Anderton. Neil is a keen wildlife photographer and has spent many hours photographing them. In 2005, Neil discovered the nesting tree when he found whitewash (droppings) on the ground. He observed on several consecutive days that an adult owl was roosting about 4 metres above the ground in a small tree close to a large gum tree. Mature eucalypt trees with large hollows are typical nesting sites for large owls.

We kept watch through July and August, and observed that the owl was always roosting in the same place - in the hot sun. Several experts have agreed that the gum tree would be their nesting site. They did not nest in 2006 and according to HANZAB they sometimes skip nesting if it's a very dry year. They seem active

again and we are hoping that they will nest in 2007.

When we moved to Pine Rivers we chose a fairly steep block that backs onto a nature reserve with a dry watercourse running through it. As nature lovers, we wanted to keep the bush as natural as possible to encourage all forms of wildlife especially birds. At first the wildlife appeared very scarce although we heard lots of noises at night. As complete novices trying to identify wildlife by their call, we eventually identified White Throated Nightjars, Powerful Owls and Cane Toads calling.

Over the years we have planted native shrubs, built a frog pond and installed a few bird baths. We are still novices when it comes to identifying mammals and other furry creatures, but with the help of a few friends we have recorded over 120 species of birds, several large goannas, several varieties of snakes, Koalas, 2 species of wallaby, 7 frog species as well as the Cane Toad! We try to protect the small birds by keeping cats off the property and not feeding the meat eating birds (e.g. butcherbirds or kookaburras). We provide multiple watering places and let the wildlife forage for food in their natural habitat.

We feel very privileged to be close neighbours to such magnificent birds as the Powerful Owls. We never tire of watching them, and we hope they will choose to stay in our area. But we know that will only happen if enough natural habitat is available for them to hunt and breed.

# practicalities

## Identifying Bird Bands

Article by Deborah Metters  
Land for Wildlife Regional Coordinator  
SEQ Catchments

Earlier this year, I was involved in some bird surveys around Brisbane. During a survey of Anstead Bushland Reserve, fellow birdwatchers Ross and Cathy Smith came across a bird leg that had a band attached (see photo right). Coincidentally, a workmate had talked about finding a bird band under a Peregrine Falcon roost site at White Rock Conservation Park many years ago. He bought the band into work, and so began my journey of working out what to do when you find a bird band. Also, I wanted to know who were the unlucky wearers of these two bands.

Firstly, there are two main categories of bird bands; one for wild birds, and another for domestic birds. It is easy to identify the difference. Wild birds are banded with plain metal bands that are used by the Australian Bird and Bat Banding Scheme (ABBBS). This is a Federal Government program that records all banded birds and bats in Australia.

ABBBS bands can be distinguished by the fact that they are always plain, non-coloured metal, usually made from aluminium. They are rectangular pieces of metal that have been bent into shape to fit the wearer. They are designed so that bands can be fitted to any bird of any age.

There are about 40 different sizes and shapes of ABBBS bands for birds and bats. Obviously the size of the wearer's leg and their ecology will dictate the most suitable band. For example a small wren will need only a small band, some kingfishers have very short legs and require narrow bands, whereas a pelican has egg-shaped legs and requires bands that are also egg-shaped. Bands for albatross are made from stainless steel and are designed to last for 60 years in ocean conditions.

Good bands are designed so that they do not injure the bird, or change the way they live and will be tough enough to outlast the wearer.

Nearly all ABBBS bands carry a standard numbering system with a three digit prefix which indicates band size, and a five digit identifying serial number. Bands will also carry a return postal address, unless they

are simply too small to show an address, such as on small bat bands.

The band will include the word 'Australia' if the band is likely to be recovered outside Australia. You may be lucky enough to come across a band from a bird that was banded overseas. If that is the case, the band may be written in a language other than English, but should still contain a return postal address and an identifying serial number.



*This ABBBS bird band came off an Australasian Gannet that was recovered at Carpenters Rocks, SA. The bird was 18 years old when found with a broken wing and was subsequently euthenased. It was originally banded at Lawrence Rocks, Vic - about 130 km to the east of the recovery spot. Photo by David Drynan, ABBBS.*

The ABBBS would love to hear from you if you have come across a bird band, wing tag or some other marking on a bird. If you have found a band, please record:

- » The band number and all other information on the band.
- » Where you found the band.
- » When you found the band.
- » Where is the band now.
- » Where is the bird now.

If the bird is dead, the ABBBS would like you to take the band off the bird, carefully straighten the band as much as you can, stick it to some cardboard and post the band to the ABBBS. Remember to include your name, your contact details the information listed above. The ABBBS will send you a letter telling you about where and when the bird was banded.

You can contact the ABBBS at GPO Box 8, Canberra ACT 2601. Phone (02) 6274 1111 or freecall 1800 803 772. They also have an excellent website with information and an online form to report band findings <http://www.environment.gov.au/biodiversity/science/abbbs/>



*Bird foot with band attached. Photo by Ross Smith.*

The second main category of bird bands are those that are used by domestic bird breeders and pigeon racers to identify their birds. Pigeon bands are generally coloured with a plastic coating and are closed rings (as opposed to split rings that the ABBBS use). Closed rings are slid over the pigeon's foot when it is still a chick. Pigeon bands carry a code for the pigeon club that the bird has come from. If you think you have found a pigeon band, the following website gives a list of all pigeon clubs in Australia, the corresponding name that they use on their pigeon bands (eg. QPC) and their contact phone number. <http://www.australian-pigeon-racing.com.au/ringlist.htm>. Otherwise you can phone the Queensland Racing Pigeon Association on (07) 3349 6817 to report your finding.

So back to the story of our banded bird foot found by Ross and Cathy. Given that the band is blue in colour, and the band is solid (not split), then this bird must have been domestic. Cathy phoned a local pigeon club and was told that this individual was one of ten pigeons that had been released at Jondaryan and was heading home to Brisbane. This bird was nearly home. Sadly, this pigeon was one of the owner's better birds, and was one of four birds that had not yet arrived home. It would seem that local birds of prey had a good feast that weekend.

Pigeon bands are most commonly found under roost sites of raptors and owls, such as the band found by my workmate. This band was also worn by a racing pigeon and was red in colour with the inscription Lake Macquarie Assn 1995 and an identifying number. This individual pigeon was a long way from its home. An enthusiastic pigeon club member who I chatted to about this band informed me that pigeon breeders can expect to lose 2/3 - 3/4 of their birds per season due to birds of prey and adverse weather. Being a well-fed, well-cared for, slow-flying conspicuous bird is obviously not a highly successful evolutionary trait in the Australian bush.

# property profile

## Remnant Scribbly Gum Forests in Brisbane

Article by Jak Guyomar  
Land for Wildlife landholder  
Gumdale, Brisbane City

Forward by Richard Rawlings, Land for Wildlife Officer, Brisbane City Council

*Jak Guyomar and Ginny Saunders live close to the shores of Moreton Bay in the Lota Creek Catchment in the eastern suburbs of Brisbane. Theirs is a unique property in a unique area of Brisbane. Clearing for farming and now housing have heavily impacted the native vegetation so that these plant communities are some of the most threatened in Brisbane. Jak's property has both Endangered and Of Concern regional ecosystems. Jak joined the Land for Wildlife program in May 1999 and three years later entered into a Higher Voluntary Conservation Agreement. After nearly 70 years of living in the area, Jak has provided the following account of his efforts to conserve native vegetation and wildlife habitat on his property.*

The 4 hectare property is a remnant of an original about 100 acres purchased in 1919 by my maternal grandfather, which was part of subdivision called Grassdale Estate - Grassdale because of the profusion of Xanthorrhoeas. There is to my knowledge only one left in the wild. The name Grassdale was changed to Gumdale in the 1940's.

The property was 80% cleared for farming. The remainder was harvested for useful timber with the "rubbish" trees left standing. Our property is part of this remainder. Hence the 100 - 150 year old Scribbly Gum trees. A lot of very old *Lophostemon suavoelens* were ringbarked and left standing. There is one of these still standing and from the girth it must have been around 150 years old when ringbarked around 1920. The main property was a general purpose farm, running 500 chickens and 100 pigs, and other farm animals at any one time.

I have lived on the property for 68 years, (I could not navigate my way out!) and have witnessed vast changes to the district in this time, from a farming community to the present tract housing estates.

Demand for land for housing is driving

up the local valuations and hence the taxes, so that privately protecting Nature in this area is becoming more difficult. Witnessing the gradual destruction of the local bush environment has been very stressful. When Brisbane City Council put in place Vegetation Protection Orders in the early 1990's I welcomed them. Then later the Land for Wildlife and Voluntary Conservation Agreement (VCA) programs were taken up by us with gusto! We intend to arrange a Conservation Covenant shortly.

The main tree cover on our property consists of Eucalypts and the canopy covers approx. 90% of the property. The main trees consist of 4 *Eucalypt* species, 4 *Acacia* species, 3 *Melaleuca* sp., 3 *Banksia* sp., 2 *Lophostemon* sp. and 4 Pioneer species other than wattles.

We have recorded around 155 species of plants so far of which around 90% are indigenous to the area. Some of the most interesting are several ground orchids that appear when conditions are right. In particular Hyacinth Orchid (*Dipodium variegatum*) which lives in a symbiotic relationship with a species of root fungus and numerous plants of Nodding Orchid (*Geodorum densiflorum*) are scattered through out the area.

Also in the understorey are significant areas containing 4 species of *Lomandra* (Matrush). *Lomandra*s are exclusive host plants for the *Trapezites* genus of Skipper butterflies, with 6 species local to the area. A rare species, *Trapezites lutea* (Rare White-Spot Skipper) can be found on occasion when conditions are favourable. Another understorey species which is significant to the local Skipper population is Saw Sedge (*Gahnia aspera*) which is host to the *Hesperilla* genus.

There are around 20 "grandfather" Scribbly Gums with multiple hollows.



*Remnant Scribbly Gum trees provide habitat for a wide range of wildlife - refuges for biodiversity on the outskirts of Brisbane.*

These provide nesting and roosting sites for 4 species of parrot, as well as bats, possums, Sugar Gliders, kookaburras etc. So we have quite a nursery in season. The Birds Australia survey (conducted as part of the VCA program) in early May this year, recorded 32 species of birds. Koalas started to appear around the mid 1960's and have been resident ever since.

I have been breeding butterflies in the wild on and off for the past 40 years, and have established a number of host plant species. I have recorded around 30 species of butterflies. In one of the *Allocasuarina* areas there is a roosting spot for the Common Crow butterfly. During breeding season there can be around 100 individuals there. The host plant Monkey Rope Vine (*Parsonsia straminea*) is endemic to the area.

### Fire

Bushfires were a regular occurrence between 1920 and 1960, occurring about every 5 years. However there have been no burns on the property between 1960 and 2007. This has had the effect

## Letter to the Editor

### Disinfecting Birdbaths

Last year I wrote a letter regarding the value of bird baths for native birds which you published (see January 2007 newsletter). The issue of disinfecting the baths was discussed in a subsequent issue, but no indication as to an appropriate and safe (for the birds) disinfectant was suggested.

My research has come up with F10SC, a veterinary disinfectant distributed by Chemical Essentials in Victoria - phone (03) 9841 9901. When I phoned them regarding disinfection frequency they said how long is a piece of string? But once a week would be better than nothing. Perhaps you may have further suggestions.

**M. Wallace**

*Land for Wildlife landholder,  
Wamuran.*

*Ed. - Thanks for your suggestion. I have not sought further advice on this issue. Do any other Land for Wildlife members have first-hand experience with maintaining healthy watering stations for native animals?*



*Monkey Rope Vine (above) is the host plant for larvae of the Common Crow butterfly (left). Photos taken on Jak and Ginny's Land for Wildlife property.*

of slowing regeneration of the smaller species of the indigenous understorey which have been choked out. It would be of great benefit if somehow controlled burns could be implemented to help establish the natural systems of the area. However since the property is in a semi urban area, this seems unachievable in the near future. Some socially acceptable method needs to be evolved. Step forward those in the know!

#### **Weeds**

The main weed infestation is *Ochna serrulata*, with around 50% of the property affected. Work on this continues with about 50% of the original coverage eradicated. Regrowth of native understorey is very slow, due to the continuing drought, so eradication is not happening as fast as the mind requires! Ho Hum!!

The indigenous regrowth is achieved from existing seed banks in the soil

and planting local species propagated from seed. This helps perpetuate local provenance. We try to avoid introducing clines from other areas. This is not always possible, but every little bit helps.

Fishbone Fern was accidentally introduced 20 years ago and now covers around 200 square meters. It is being contained and slowly eradicated. At present in the drought it retains moisture and creates a microhabitat for many invertebrates and a family of Pheasant Coucals .

#### **Our Home**

Our home is situated in the middle of the 4 hectares and is positioned about ten metres from a giant gum tree – the oldest on the property. We have coexisted here with all the aforementioned birds, insects and fauna. We have never been bothered by mosquitoes or cockroaches here. The birds and the spiders seem to make short work of them.

We have a resident 3 metre Carpet Python who lives in the ceiling and it is a rare rodent who makes it into the place. We have a whole family of possums and we have to work hard to resist feeding them. They regularly visit us in the evening, usually around 8pm, often calling out, 'Ca-ca-ca'. They often sleep in the day in a nest they have built in my workshop. They appear unafraid just like the birds that often hop into the house over the doorjamb to pick up crumbs from the floor under the table. We have two cocker spaniels kept within a fenced house yard and they take no notice of the resident wildlife who share our space.

# pest profile

## Pest Animal Control in Southeast Queensland - an issue of balance

Article by Keith McCosh  
Land for Wildlife Extension Officer  
Beaudesert Shire Council

**P**est animals impact on native wildlife. That is certainly true.

So, to save the wildlife, should we kill all pest animals? If only we could! These pests are now fully integrated into the South East Queensland landscape and we can only hope to control their numbers. A key aspect of their control is the important concept of balance.

### Balance

In nature, the “web of life”, or the food chain, is made up of countless interactions between species. Nature is extremely complex and always very subtle. There are innumerable interactions between different species, between predators and prey, between animals and plants, between competitors, between parasites and hosts.

Species eat other species. Herbivores eat plants; carnivores eat meat (other animals); scavengers eat sick or dead animals. In all the five Kingdoms (animals, plants, fungi, bacteria and algae) there is a complex hierarchy of ‘eating’. All species try to catch their food while at the same time avoid being eaten by something else. The pressure of predation drives evolutionary change in all species. In all this chaos, though, there is a dynamic balance. Populations may grow but there are always limits to growth that keep one species from dominating at the expense of others.

Due to the rapid recent changes to our local environment through urbanisation and habitat fragmentation, our natural world is out of balance. Weeds and pests are established and a new balance is emerging that is not very favourable to our native flora and fauna. We now need to enhance those factors that can provide support for native species.

Wild dogs, foxes, cats, deer and wild pigs (the main environmental mammalian pests in South East Queensland) all interact with each other. We need to appreciate these complex interactions and consider them when addressing any land management or wildlife issue.

### Predators

There is always a hierarchy amongst predators. In SEQ, Dingoes and wild dogs are the dominant predators, referred to as the “peak predator”. Then comes the fox, then the feral cat and then the native Spotted-tailed Quoll. These lower order predators are called “mesopredators”. Peak predators suppress mesopredators. They do this through direct attack, intimidation or indirect competition. Dingoes both harass and eat foxes, cats and even Quolls.

Mesopredators do survive, though, and viable populations remain in the wild. They each take different classes of prey, and therefore don’t compete directly with each other or with the peak predator. If there is direct competition for the same prey, natural selection teaches that over time one will dominate and the other will cease to exist. An example of this is the Thylacine disappearing from mainland Australia due to the introduction of the Dingo about 4,000 years ago.

### Mesopredator Release

A phenomenon called “mesopredator release” has been known to occur when a peak predator is taken out of an ecosystem, allowing lower order predators to increase their populations and cause more predation on smaller prey species.

Take out the Dingo, and foxes usually increase. Take out the fox, and feral cats usually increase.

In the last two hundred years, Australia has been responsible for almost half of the planet’s known mammal extinctions. Predation by foxes and cats appears to be a key mechanism for these extinctions. This is an example of mesopredator release. New settlers reduced Dingo numbers allowing the newly introduced fox to spread.

These photos show the hierarchy of mammalian predators in Southeast Queensland from Dingoes and wild dogs to foxes, cats and finally quolls.



Dingo. Photo from [www.epa.qld.gov.au](http://www.epa.qld.gov.au)



Feral fox with native animal. Photo by Invasive Animals Cooperative Research Centre - [www.invasiveanimals.com](http://www.invasiveanimals.com)



Feral cat. Photo by DNRM from [www.wettropics.gov.au](http://www.wettropics.gov.au).



Spotted-tailed Quoll. Photo courtesy of the Quoll Seekers Network.



Professor Chris Johnson in his book, *Australia's Mammal Extinctions: A 50,000 Year History*, surprisingly argues that prey species may be safer from predation when they are exposed to more predator species. With more predator species comes the natural predator hierarchy with strict controls on mesopredator populations. Smaller prey species can then keep ahead of predation rates.

Johnson even wonders if we need more Dingoes in Australia, as a drastic measure to curb the effects of our local introduced mesopredators. Dingoes may be the only way to keep foxes and cats in check in our vast rural areas.

### The Dingo (Native Dog)

Generally thought to have been introduced to Australia about 4,000 years ago, Dingoes (*Canis lupus* subspecies *dingo*) are a type of wolf (*Canis lupus*). They are biologically different from the domestic dog (*Canis lupus* ssp. *familiaris*), which have also descended from the wolf. Dingoes only having one breeding cycle per year and are not able to bark. However, Dingoes do breed with domestic dogs to form hybrids that are fertile (i.e. can also breed).

Dingoes have a very characteristic pack structure which aids them in catching large prey such as kangaroos but which also controls their numbers. There is a very strict hierarchy with an alpha male and alpha female, subordinates and a scapegoat (an individual singled out to be denied resources and always looks starving and wretched). Only the alpha pair breeds successfully, thus limiting Dingo numbers. Packs actively patrol their territory and resist intruders. However, packs may shrink in size as prey and conditions change and individuals do disperse, only to come together again later.

Dingo control activities sometimes do nothing more than fracture the pack hierarchy and allow more individuals to breed – causing a real problem with excessive wild dog numbers.

We all know that Dingoes can impact on domestic livestock. They are opportunists, and will take the easiest prey. The Dingo is classed as a pest in Queensland except in National Parks, where it is protected as a native animal and is valued for its contribution to natural ecosystem functions. The Dingo

is listed on the IUCN Red List of Threatened Species.

### Dingoes and Feral Dogs

In closely settled areas and urban fringes, feral dogs and hybrid Dingoes are able to breed up and may become a severe problem. An overabundance of food, such as rubbish, road kills, and domestic animals, means that numbers can rapidly increase. Wild dogs also breed twice as often as pure Dingoes and are often bolder. Control strategies for wild dogs are essential along with responsible pet management. Natural Dingo behaviour, with a strict pack structure, is not possible in these areas.

### Wild Dog Control

Predators control prey numbers. Reduce the predators and prey numbers may get out of control. A balance is essential.

Wild dogs normally prey on macropods, and control their numbers. The current drought is bringing macropods (and wild pigs) down from the hills to find water and feed. Wild dogs follow and come into contact with domestic stock.

Control strategies for wild dogs and Dingoes may lead to some very strange unintended outcomes, showing the subtle and complex balances of nature.

Wild dogs just love feral pigs and especially piglets. Excess numbers of feral pigs often attract high concentrations of wild dogs. A wild dog problem on a property in Beaudesert Shire turned out to be a pig problem and getting rid of the pigs solved the dog problem. Without pigs, the wild dogs left the area.

Similarly, after wild dog control on a property in Maroochy Shire, an increase in feral pig numbers was observed which had different impacts on local native flora and fauna. Fortunately the feral pigs were able to be controlled. We need to accept that simply controlling top predators may not be the most effective long-term strategy - an integrated approach is needed.

Wild dog control programmes need to be well planned and targeted to account for likely prey responses and mesopredator release. Control programmes need to include a reduction in pigs, foxes and cats.

### Conclusion

We need to be very “foxy” when it comes to pest animal control. We need to attack pest animals when we can achieve the greatest impact on them, and the least impact on native wildlife. In particular, we need to act only when there is a real problem and that we know what the *actual* problem is. Monitoring is so important here to give advice on the nature of any problem and possible control strategies.

So blasting away is not necessarily a good idea. Always consider the effects of mesopredator release and subtle balances when developing strategies for control of pest animals or even planning for wildlife protection. Use the complex interactions between species to promote a balance and achieve a more sustainable and cost-effective outcome.

We would love to hear of other cases of mesopredator release or unexpected consequences of pest control activities in SEQ. Please contact the editor, Deborah Metters, if you have any examples to share.

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# practicalities

## Can Farm Forestry Positively Contribute to Nature Conservation?

Article by Bernadette May, Pine Rivers Shire Council and Deborah Metters, SEQ Catchments.

Farm forestry is not a new industry, having been carried out in Australia for more than half a century. Some Land for Wildlife properties in Southeast Queensland (SEQ) have integrated farm forestry ventures into their property management, providing a diversified source of income. This article explores how thoughtful planning and management of plantations can deliver positive results for nature conservation.

Most early farm forestry ventures in SEQ involved the introduced Slash Pine (*Pinus elliottii*), the native Hoop Pine (*Araucaria cunninghamii*) and Paulownia - a Japanese softwood that has since proved unsuccessful in SEQ. Slash Pine is still grown for paper manufacture and soft wood timber and has unfortunately become a pervasive environmental weed.

More recently, Australian native rainforest and open forest species have become popular for tree farmers, with the majority of commercial plantings being Blue Gums for woodchip. Mixed rainforest species plantations are also gaining in popularity. Hobby farmers as well as larger investment corporations are growing assorted tropical and subtropical timbers.

There is some debate about the role that farm forestry plays in nature conservation, and whether or not planting trees for commercial return can yield positive environmental outcomes.

Where trees are planted to improve degraded land, conservation principles are usually applied. However, commercial plantations are not usually driven by biodiversity or ecological restoration principles. The primary objective of farm forestry is to produce a product (such as sawn timber, firewood, fodder, foliage, flowers, and bio-oil) as an on-farm income. Many farm forestry operations complement existing primary production activities and offer landholders a diversity of income sources.

### Simple systems

Tree plantations are ecologically unsophisticated arrangements. They are commonly one species of the same age, evenly spaced and intensively managed.



An example of a well managed, 4 year old plantation of Spotted Gum with a well developed native understorey at Croftby, near Boonah.  
Photo by Paul Daly.

Usually, the understorey is minimised in the first two years by slashing or spraying. Plantations may produce an income about 8-12 years after planting, at the first thinning. Harvesting and thinning occurs before complex habitats can develop.

The simplistic composition and temporal nature of agroforestry systems reduces habitat opportunities when compared to bushland sites. However, plantations can not be expected to provide complex habitats for a diversity of species as they are not designed to do so.

Well designed farm forestry projects, with defined conservation principles, can deliver nature conservation benefits. Plantations can not compete with high biodiversity values of remnant bushland or sites of ecological restoration, but they still positively contribute to conservation across the landscape.

### Farm forestry and wildlife

A study conducted in eucalypt plantations in Victoria in 2005 found that plantations support higher densities of forest birds and mammals than cleared farmland. Bats and kangaroos are the main mammals that use plantations. They offer day-time shelter for kangaroos and night-time foraging for bats. Some arboreal mammals (eg. possums and gliders) were recorded in plantations close to remnant native forests. Forest birds that feed in eucalypt canopies or on the ground among trees (eg. thornbills, honeyeaters, robins and the Golden Whistler) definitely use plantations for foraging. The presence

of seed-eating finches and parrots will depend on native grasses being allowed to develop in the plantation understorey.

The presence of insectivorous birds and mammals (eg. bats and gliders) reduced leaf-eating and sap-sucking invertebrates that may damage or slow growth of plantation trees. Encouraging these animals into plantations, through the installation of nest boxes and the positioning of plantations close to remnant vegetation or wildlife corridors, will help manage a healthy plantation.

### Farm forestry and restoration

Farm forestry can provide environmental benefits to land exhausted by cropping, grazing, vegetation clearance or erosion. Trees are the main tool to mitigate soil erosion, rectify salinity and improve the water quality in riparian zones. Plantations can be used as buffers to erosion control activities, riparian restoration works or salinity reclamation.

### Design techniques for biodiversity

Planning is crucial to secure a good income and conservation benefits from farm forestry. Farm forestry can be a stand alone investment or it can be mixed in with grazing, cropping, conservation or other land uses.

Here are some points to consider when planning a farm forestry venture:

#### 1. Location

Location of plantations will affect wildlife visits, habitats and conservation. Locating the plantation near bushland



*An example of a poorly planned 8 year old plantation of Flooded Gums in Boonah Shire. Many trees are stunted in growth, stressed or dead. Flooded Gum was a poor species selection for this low rainfall, low soil fertility site. Photo by Paul Daly.*

vegetation, remnant paddock trees or riparian corridors will reduce its isolation and provide more opportunities for wildlife movement. Plantations are used by a greater diversity of fauna when they are located near remnant vegetation.

Farm forestry plots seem to act as a buffer to reduce edge effects in bushland sites. The Victorian study found that plantations reduce the permeation of open-country and invasive species into native bushland. Plantations specifically protected adjacent remnant native vegetation against adverse effects of stock and invasive birds.

Avoid locating plantations up close to creeks, watercourses or areas affected by erosion or salinity. Plantations can provide a buffer to these areas.

## **2. Configuration**

The size and shape of a plantation will affect its biodiversity value. Bigger areas are better for biodiversity. Large, wide plantings are preferable to long, thin strips. Large areas of farm forestry are more resilient to edge effect factors such as weeds, disturbances, strong winds and invasive species.

## **3. Composition**

Using native species local to the area and species consistent with regional ecosystem data will offer more habitat opportunities to local fauna. These animals have evolved to utilise local flora. Introducing exotic species, from other regions of Australia, or overseas, may lead to spread weeds or the reduction of localised genetic provenance.

Planting mixed-species in coupes is preferred. For example in natural dry sclerophyll forests, there are a few dominant overstorey species which usually occur naturally in groupings.

Planting mixed species in groups, rather than a different species in each row, more closely resembles a natural ecosystem.

In natural systems, groupings of species are usually dictated by geology, soils, rainfall and micro-climates. In general, soils across Southeast Queensland have been highly modified, and are much thinner, since non-indigenous settlement. A rainforest planting on a rocky hill simply will not work. Using regional ecosystem and pre-clearing maps will help guide species selection, but consideration of site specific factors (soil, rainfall, aspect, fire history and micro-climates) is crucial.

## **4. Complexity**

Planting at time intervals provides a mixed age plantation and encourages a more complex structure. Although this can increase crop management costs, it will provide sequential harvesting opportunities. Increased microhabitats, such as native grasses and old habitat trees, will provide habitat variety and encourage biological diversity.

## **5. Duration**

It is desirable that a proportion of farm forestry projects retain some trees in perpetuity. Older trees provide considerably more habitat than younger plantings. Long-lived habitat trees may be strategically placed to provide stepping-stones and refugia for wildlife across the landscape. Clumps or corridors of habitat trees surrounded by mid-storey and understorey vegetation are preferable. These provide opportunities for ground-dwelling and arboreal mammals, birds, reptiles and seeds to move across the landscape and exchange genetic material.

## **6. Management**

It is recommended that native vegetation is never cleared for the development of

a plantation. Careful use of chemicals, restricted slashing, and leaving branches on the ground after pruning may help cut management costs while also improving wildlife habitat.

If erosion develops within plantations, the farm forestry industry recommends retention of trees around the affected site and encouragement of understorey species to hold the soil together.

Where possible, installation of nest boxes for wildlife should be considered, and could form part of a pest management strategy. Harvesting should be staggered over a period of time, and be carefully planned to minimise animal disturbance, particularly of nesting animals.

## **Carbon sequestration**

Carbon sequestration schemes will create opportunities for tree farming projects. The idea behind carbon sequestration is that a growing tree will absorb carbon dioxide thereby reducing the amount of CO<sub>2</sub> in the atmosphere. Decreasing carbon in the atmosphere will slow the rate of climate change.

Voluntary schemes to offset carbon emissions and sequester carbon are already operating in Australia. A regulatory national carbon trading scheme is flagged to start within five years. Carbon sequestration plus significant reductions in carbon emissions are both required to mitigate affects, and reverse, climate change.

It will be interesting to see how carbon markets views areas of natural bushland, such as those registered with Land for Wildlife. These are existing carbon banks.

For more information, contact Paul Daly, Farm Forestry Extension Officer, SEQ Catchments on 3211 4404.

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# flora profile

## Long Haired Ricinocarpos

Article by Michael Banks  
Land for Wildlife Extension Officer  
Gold Coast City Council

A lot of people would probably be familiar with the more commonly known *Ricinocarpos pinifolius* or Wedding Bush. It is synonymous with the sandy coastal heaths of South East Queensland, easily recognised by its profuse show of white flowers in the late winter and spring months.

Another little known species of the *Ricinocarpos* genus is the vulnerable Long Haired Ricinocarpos (*Ricinocarpos speciosus*). In contrast to the Wedding Bush, the Long Haired Ricinocarpos shrub has been found to occur scattered along the moist eco-tones of wet sclerophyll forest and sometimes on the margins of riparian corridors between Dorrigo, New South Wales to Nambour on the Sunshine Coast. Along with differences in habitat preference the appearance of the Long Haired Ricinocarpos also makes it discrete from its Wedding Bush counterpart with broader leaves and more erect open habit.

However, the Long Haired Ricinocarpos does have a closely resembling 'look-a-like', another South East Queensland notable, Pointed-leaved Hovea (*Hovea acutifolia*) which is of comparable habit and occurs in similar habitats. Leaf characteristics such as the alternate arrangement, 20-80 mm long and 5-12 mm wide leaves, the glabrous leaf upper surface and densely hairy underside coupled with hairy rusty coloured stems are all common features of both species.

Considering the comparable features of the two plants, and subsequent initial identification difficulties that may arise, a detailed closer inspection can reveal the subtleties that make the two plants distinguishable. These features include:

- The shape of the Long Haired Ricinocarpos leaves are broader being lanceolate to oblong with a rounded tip in comparison to the more evenly tapered, narrower and pointed leaf tip (as both common and species names suggest) of the Pointed-leaved Hovea.
- Leaf venation of the Long Haired Ricinocarpos appears to be inconspicuous whereas the leaf veins of the Pointed-leaved Hovea are more prominent.



Long Haired Ricinocarpos (*Ricinocarpos speciosus*) in flower. Photo by Glenn Leiper.

- Whilst the leaf edges are flat and the margins are entire on the Long Haired Ricinocarpos the leaf edge of the Pointed-leaved Hovea, interestingly, is often slightly down-turned or recurved.
- Furthermore, the petiole or leaf stalk of the Long Haired Ricinocarpos is slightly longer up to 8 mm long.

When in flower and fruit the defining features for each plant are more obvious. The Long Haired Ricinocarpos produces clusters of 5 petalled white flowers approximately 15 mm in size from June to October followed by a 10 mm long ovoid hairy capsule. This contrasts to the distinct purple/blue (occasionally white) Fabaceae pea flower and inflated seed pod of the Pointed-leaved Hovea

So, keep your eye out and have a closer look next time you find yourself in the bush walking past what you have always been confident in calling a Pointed-leaved Hovea, in the right habitat it may just be its rare *Ricinocarpos speciosus* double.

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# dvd review

SEQ Catchments and Burnett Mary Regional Group have recently released a DVD called *Understanding Landslips: repair and management*. The DVD is an educational 35 minute video that covers a number of topics including what causes a landslip, the types of landslips and the impacts of landslips.

The DVD's target area is the Blackall Range of the Sunshine Coast and Hinterland, including the Mary Valley. However the principles would be applicable in other areas of Southeast Queensland with basalt soils prone to landslip including Mt Tamborine and Mt Mee.



It covers a number of examples including a recent landslip at Hell Hole Creek in the upper Mooloolah Catchment. The plans to revegetate and de-water the area where the slips have occurred are outlined, as are the impacts to the surrounding area, especially to those people who live downstream of the landslip. The DVD also covers a number of landslips in the Mary Catchment that were rehabilitated in the 1990's. It gives a comparison of the landscapes before and after the slips were revegetated, showing the progress of stabilising the slips through revegetation and de-watering (removing dams).

The DVD talks to landholders, land managers, community groups and experts about the complexities of landslips and ways to decrease their impacts. It is certainly well worth a viewing by anyone who has a landslip, old or new, on their property. But it would also be good for anyone who lives in landslip prone areas to see this DVD - as they say prevention is the best cure.

Copies of the DVD *Understanding Landslips: repair and management* are available for \$6 from the Maroochy Catchment Centre, Shop 5, 70-76 Currie Street Nambour, PO Box 311, Nambour 4560. Phone (07) 5476 4777.

Review by Stephanie Reif  
Land for Wildlife Extension Officer  
Maroochy Shire Council

# book reviews

## Queensland Museum Wild Guides.

Four excellent compact pocket guides have recently been published by the Queensland Museum:

- Ants of Brisbane by Chris Burwell.
- Raptors of Southern Queensland by Gregory Czechura and Chris Field.
- Snakes of South-East Queensland by Patrick Couper and Andrew Amey.
- Freshwater Fishes of the Greater Brisbane Region by Scott Cutmore and Kevin Warburton.

Each of these pocket guides is worth every cent of its \$9.95 value for anyone living in Southeast Queensland. I have reviewed here 3 of the 4 guides.

The Ant Wild Guide has an informative introduction on ant biology, social structures, where they can be found, their preferred foods and mutually beneficial relationships between ants and other insects such as caterpillars. This book discusses how landholders can help to increase the diversity of ant species by providing diverse habitats. The author has recorded over 60 different species of ant in his leafy suburban garden in Brisbane. Pest ants that cause havoc at picnics or 'ruin' lawns are also discussed.

The bulk of this book details nearly 40 species of common ant with excellent photographs, information about nests and stings.

The Raptor Wild Guide details 24 species of raptors – eagles, hawks, ospreys, harriers, kites and falcons. Raptors are often difficult to see because they are secretive, highly mobile, usually solitary and sit at the top of the food chain. As such, many raptors are difficult to identify in the field. This book helps to identify raptors based on wing shape, wing span, appearance when perched or flying, their habits, their prey and habitats. For each species described there are at least 3 excellent photographs showing the raptor in flight, perched or hovering. This is an excellent guide to working out what that dark speck circling in the sky is.

The Snake Wild Guide should not be picked up by the faint-hearted. It has excellent photographs of snakes eating snakes, snakes trying to eat chicken eggs

and close up of snake eyes (how did they take those photos?). This booklet will certainly drive home the fact that snakes are a wonderful addition to our diverse environment and should be respected. Of the 56 species of snake found in SEQ, this book details nearly 40 species with excellent photographs, identification guides, habitat and ecological facts. Every species has a danger listing – from dangerously venomous to non-venomous. Concise first aid information is discussed as well as a listing of the deadline of venom from snake species in SEQ.



Published by Queensland Museum, 2007. All Wild Guides are soft cover, 70 pages, full colour. RRP \$9.95 each. Available from Queensland Museum on (07) 3840 7601.

## A Guide to Australian Moths.

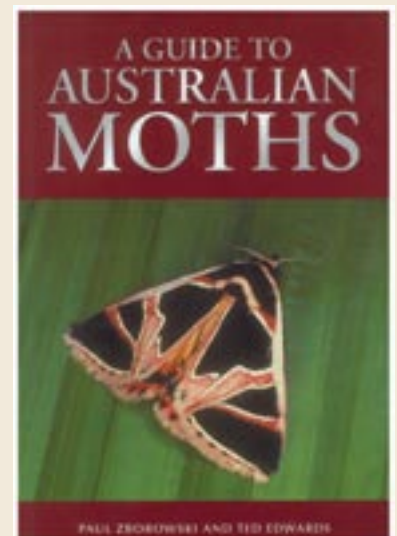
by Paul Zborowski and Ted Edwards.

If you have ever marvelled at those moths that get attracted to your camping light, this book is for you. Moths can be so beautiful in shape and colour, but what do they do, what do they eat and where do they go during the day? This book helps unravel some of the mysteries of Australian moths. About 400 full colour images of live (not pinned down) moths will help you narrow down your search. This figure still represents only 2% of Australia's total moth species. So although you may not find a photo of the exact species, you can still find out more about the ecology and lives of that family of moth.

This book is excellently presented and easy to read. The introduction covers fascinating topics about moths and answers all those frequently asked questions such as what is the difference between a moth and butterfly, how long do moths live for and why are they attracted to light.

The main section of the book describes in dot points the main characteristics of moths from 69 different families, ranging from moths with primitive features to more developed characteristics. Several photographs of moths from each family are presented in clear, high quality images. Each family is further discussed in terms of habits, habitat, biology, larval food plants, species distribution and other interesting facts.

In addition, 13 'case studies' focus on particular moths of interest to Australians such as the Witjuti Grub, Scribbly Gum Moth, clothes moth, Australia's largest moth and those hairy caterpillars that give you skin rashes. As a birdwatcher, I was amazed to read about the moths that are only associated with nesting hollows of the rare Golden-shouldered Parrot. This is a must have book for amateur ecologists, entomologists or anyone with an interest in Australian fauna.



Published by CSIRO Publishing, 2007. Soft cover, 224 pages, full colour. ISBN: 9 78064309 1597 RRP \$39.95

Books reviewed by Deborah Metters.

# property profile

## Revegetation in Kin Kin

Article and photos by Dave Burrows  
Land for Wildlife Extension Officer  
Noosa Shire Council

Nestled in the lush hills of Kin Kin is a 47 hectare Land for Wildlife property owned by Coreen Schnitzerling. When Coreen and her husband Herb purchased the property some 30 years ago, it was an overgrazed farm covered in Groundsel and Camphor Laurel. There were several patches of remnant vegetation on the property, mainly complex notophyll rainforest (REs 12.11.10 and 12.3.1) growing along some of the waterways and adjacent hillsides. There were also stands of Gympie Messmate (*Eucalyptus cloeziana*) and other eucalypts (RE 12.11.16) growing on some of the hills.

Coreen and Herb were living and working in Brisbane when they purchased the property and travelled up to work on it on their weekends and holidays. Their aim was to re-establish rainforest on the property, as they were inspired by a book entitled *Rainforest Trees of Australia* by W.D. Francis. W.D. Francis was a government botanist for a time, and lived in the Kin Kin area in the early 1900's. Many of the photographs in the book were taken of trees growing in the Kin Kin scrub, as it was then called. One photograph shows a giant Southern Penda (*Xanthostemon oppositifolius*) dwarfing a man on a horse. Sadly the rainforests of Kin Kin were largely cleared for agriculture in the early 1920's, leaving a few scattered remnants such as occur on Coreen's property.

When Coreen and Herb started planting trees on their property 30 years ago, they initially started with eucalypts as the prevailing attitude at the time was that rainforest trees couldn't be grown in full sun, and required canopy cover to establish. In the early days Coreen and Herb had assistance from CSIRO and a group called "The Men of the Trees". At that time Kin Kin was largely a farming area, and the local community were initially sceptical of Coreen and Herb's tree planting efforts. Coreen recalls that after five years of growth, people were approaching them asking how they could do the same thing on their properties.



Mixed Eucalypt forest (above).

Coreen in the Rainforest planting (right).



Over the intervening years the couple progressively revegetated more areas on their land, including a mixed rainforest planting established in 1986 with a 95% success rate. The rainforest planting today is very impressive, with full canopy closure and native understorey species naturally recruiting. Herb passed away in 1993, and Coreen decided to stay on the property and keep going with the revegetation work as a lasting tribute to her husband.

Coreen became involved with Noosa Landcare in 2003, and commenced the task of eradicating Camphor Laurel from the creek and gully lines on the property and revegetating with native species. The results today are very impressive, with the Camphor Laurel trees now just bare trunks, and a diverse mixture of native trees and shrubs approaching canopy closure.

The revegetation work (13 hectares to date) has linked all the remnant patches of vegetation throughout the property, leaving some fenced off pastured areas on gentle slopes and creek flats for agisted livestock. The remnant rainforest contains some interesting plant species, including the Southern Penda mentioned above, and species not often recorded in Noosa Shire such as *Syzigium johnsonii*, *Helicia glabrifolia* and *Melicope melanophloia*.

In excess of 150 bird species have been recorded from the property and Platypus are regularly sighted in Western Branch Creek. Koalas are now regularly sighted feeding and resting in the eucalypts that have been planted on the property. Together with adjacent properties, vegetated land in this area forms a local corridor linking the Woondum plateau to vegetated ranges to the east.

The property was registered for Land for Wildlife in 1999, making it among some of the first properties in Noosa Shire to be registered. Coreen kindly allows the property to be used for field days by Noosa Landcare. School groups regularly conduct educational visits to the property, doing activities such as tree planting and water quality monitoring. To travel around the property with Coreen is an inspiration; she does all the tractor work and a large proportion of all the hard work required to manage a property.

From the pioneering work done by Coreen and Herb back in the 1980's, the community of Kin Kin have embraced the concept of revegetating their properties with native species and joining the Land for Wildlife program.

# fire and biodiversity

## Bushfires and Native Wildlife

Article and photo by Michael Reif  
Bushfire Management Officer  
Maroochy Shire Council

Many people understand that certain native plants require periodic fires for their regeneration but did you know that many native animals also require fire for their long-term survival? Whilst some wildlife will be killed during a fire the regeneration of vegetation and changes to habitat also provide opportunities for a range of wildlife after fire.

Here are some examples of wildlife that need fire for survival:

The Ground Parrot (*Pezoporus wallicus*) lives in wallum heath vegetation and needs older, thick habitat for nesting. One of the main food sources though are seeds from grass like sedges. These sedges are dominant in the early stages of regeneration after fire. As a result they need a mix of older vegetation for nesting and areas that have been recently burnt for feeding.

The Pretty-face Wallaby (*Macropus parryi*) require open grassy woodlands for feeding. In Brisbane Forest Park there were once populations that were regularly seen feeding in strips of vegetation along ridgelines that were burnt every two years as firebreaks. Due to concerns from nearby residents about this burning was stopped and the grasses became less suitable as a food source. Over time the wallabies have left these areas as the food source diminished.

A study in south-eastern Australia in 2005 looked at the recovery of native Bush Rat (*Rattus fuscipes*) populations in forest remnants after a comprehensive trapping program to monitor recolonisation after a simulated disturbance event. The results found that remnants with both small and large Bush Rat populations had recovered two years after the initial trapping program to their pre-trapping numbers. The authors proposed that Bush Rats can survive disturbances such as fires if sufficient unburnt refuges remain for small numbers of individuals to shelter in and recolonise the burnt habitat as it regenerates.

In fire adapted environments other native wildlife populations such as reptiles and invertebrates will also recover after fire if there are sufficient unburnt areas. These provide safe refuges during the fire and also provide important food sources soon after the fire while the burnt area regenerates. Many animals that survive fires are vulnerable to starvation if there are insufficient unburnt areas where they can find food and shelter from predators.

Some useful tips to help wildlife when undertaking a burn:

- Ensure there are adequate areas to be left unburnt during a planned fire. Any planned burn should aim to cover between 30-60% of the area, allowing for refuge areas to remain unburnt.
- Remove fuel from around fallen hollow logs, the base of dead trees, trees with hollows and other habitat features to provide refuges for fauna during the fire.
- If you have a large property or are working with your neighbours, don't burn off the whole area in one fire or one season.
- Excluding fire for long periods can lead to the accumulation of large fuel loads. If a wildfire occurs in these areas fire intensities can be extreme and may result in the death of entire populations of wildlife. Undertaking smaller burns provides safe areas for wildlife as well as reducing fuel loads and the risk of a large scale wildfire.

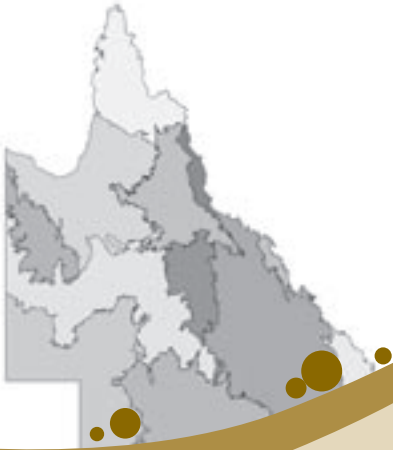
The Southeast Queensland Fire and Biodiversity Consortium (FaBC) have just published a fact sheet on fire and wildlife entitled *Living with Fire: native wildlife*.



Simple preparations before a planned burn can help maintain habitat values on your property.



This fact sheet and other FaBC materials are available from your local Land for Wildlife Extension Officer. The FaBC website is also a good reference point for further information on fire and biodiversity. Visit [www.fireandbiodiversity.org.au](http://www.fireandbiodiversity.org.au)



A fruit-piercing moth (*Eudocima sp.*) feeding on a lychee. The high sugar content of fruit provides energy for moths to migrate over long-distances.  
Photo by CSIRO Entomology.

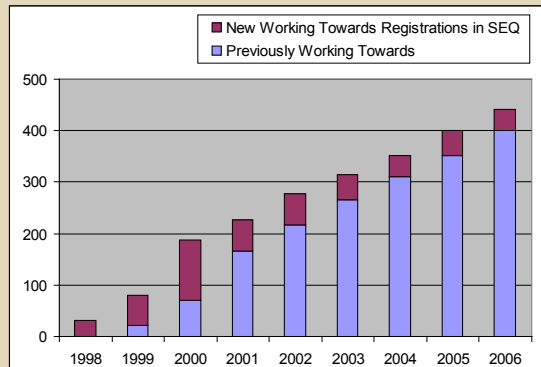
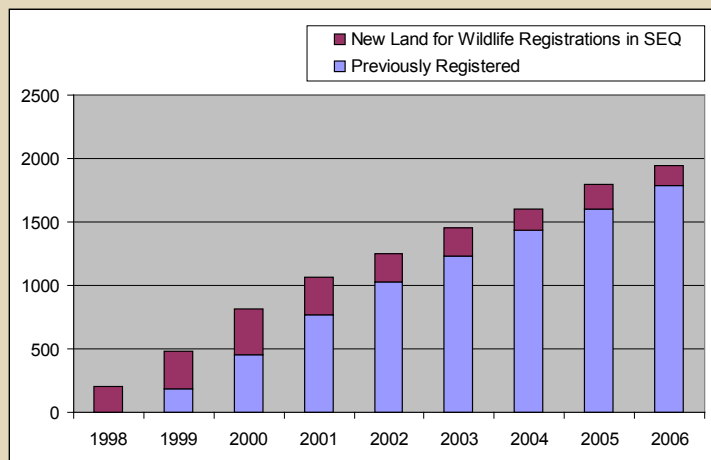
## 10th Anniversary of Land for Wildlife in Queensland Next Year

Land for Wildlife was officially launched in Queensland on 26 July 1998. Celebrations were held at John Sprent's Land for Wildlife property in Moggill, Brisbane. John was the first landholder to join the program in Queensland, and is still an active landholder and member of the program.

Land for Wildlife originally began in 1981 in Victoria. 26 years later, there are nearly 6,000 Land for Wildlife members protecting over 170,000 hectares of native vegetation across Victoria.

In comparison, Queensland has about 2,700 members with over two-thirds of the membership being in South East Queensland.

Numerous events are being planned to mark the 10th anniversary next year. We will be seeking case studies from Land for Wildlife properties to showcase land management and conservation activities of our members. If you think your property would be make a good case study, please contact your local Land for Wildlife Extension Officer to discuss.



These charts show the growth of Land for Wildlife in South East Queensland over the past nine years. The top chart shows full Registrations, with the lower chart showing properties 'Working Towards' registration. Both charts exclude properties that have since left the program, mostly due to property sales. The rate of de-registration is just under 9% of the total membership.

Land for Wildlife Southeast Queensland is proudly managed by SEQ Catchments (the accredited regional body for Natural Resource Management in South East Queensland) and proudly delivered by the following 14 Local Governments:



Land for Wildlife Southeast Queensland Regional Coordination is supported by the Australian Government.

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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