LAND FOR WILDLIFE
South East Queensland

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The Graceful Treefrog (*Litoria gracilenta*) has bright yellow sides and feet and can be found in low vegetation around streams and dams. Its call is a long moaning "aaaare". Photo by Melissa Prociv.

The Red-eyed Treefrog (*Litoria chloris*) is distinguished by its orange-red eyes and is mostly found in rainforests. Its call is a drawn-out moan followed by soft double trills. Photo by Deborah Metters.

Treefrogs of SEQ

Due to the recent rains it has been a great time to find out more about the frogs that live in SEQ. Some of the easiest frogs to become familiar with are the treefrogs. They are often found around homes perched on windows, walls, pot plants, and in the case of the Green Treefrog, often toilet cisterns. Treefrogs are generally more colourful than other frogs making them somewhat easier to identify.

Treefrogs have developed broad flanges around their fingers and toes that create circular pads to help them climb vertical surfaces. The pads of the Green Treefrog have microscopic gaps in them that secrete a glue substance allowing this species to climb and hold onto smooth, wet surfaces.

As with all common names, the terminology "treefrog" can be a bit misleading. Treefrogs can be found in trees, sitting in streams, hiding in low vegetation or in bathroom sinks. Their activities depend on environmental conditions such as moisture, temperature and availability of prey. All Australian treefrogs are in the Genus *Litoria*. Frogs can be best seen on warm wet nights as all frogs obtain their body temperature from external sources and they need to keep their skin moist.

The Emerald-spotted Treefrog (*Litoria peronii*) has small bright green dots over its back. Its call is a long, loud descending rattle or cackle. Photo by Melissa Prociv.

You can help provide habitats for treefrogs by making your dam wildlife friendly (growing native sedges, reeds and aquatic plants around the edge of the dam; partially submerging logs into the dam; and trying to ensure that part of the dam is kept shaded and cool), and by maintaining native ground cover and understorey plants in riparian areas. Frogs are sensitive to environmental pollution so minimise chemical use around creeks and dams. Removing strands of Cane Toad eggs when you find them will also help native frog populations.

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editorial

Having spent most of my life in the arid interior of this country, I have found the recent rains a little repetitive. From the 1st Feb to 16th March, SEQ received 424 mm (Brisbane Airport), 475 mm (Southport) and a staggering 833 mm for Nambour. Hopefully our tanks and dams are all full, weeds are easier to pull out and we will enjoy lovely displays of wildflowers.

In mid March I visited some Land for Wildlife properties around Marburg and Minden. It was great to spend time with LfW Officers Martin Bennett, Peter Copping and Andrew Bailey who shared their botanical knowledge and history of those landscapes and its people with me.

Some properties we visited had impressive stands of mature Brigalow forest surrounded by country that was cleared at least 60 years ago. There have been financial incentives and laws supporting land clearance in this country for a long time. It is amazing that these fragments of a past ecosystem remain scattered across this modern landscape, especially ecosystems such as Brigalow, which are fire-sensitive, flower irregularly and set seed even less frequently.

I believe that there needs to be more financial incentives offered to landholders to enable them to protect these remnant patches and manage them against the persistent pressures of weeds, fire and clearing. Remnant fragments of Brigalow are listed as nationally endangered, but as you can see from roadsides around Minden, some are forgotten patches in the landscape surrounded by human endeavours that do offer financial returns.

Stewardship payments, ecosystem service payments and tax breaks are discussed, and to varying degrees, offered, to landholders to manage these precious remnant patches. I hope that in the near future, landholders will receive adequate and secure financial returns for their management of our remnant ecosystems.

In the meantime, I trust that through the Land for Wildlife program, landholders can at least receive personalised advice and, depending on Local Government area, access to workshops and grants for on-ground works.

I hope you enjoy this newsletter. There are some great contributions from Land for Wildlife members on Ochna eradication, snakes that eat Cane Toads, how to live with pet cats and wildlife, and ballistic pollen dispersal!

Thanks to all contributors, and as always, I welcome any stories or photographs that you wish to share with the LfW network.

Deborah Metters
Land for Wildlife
Regional Coordinator
SEQ Catchments

Landholder Registrations, Land for Wildlife SEQ - 16/03/2010			
Registered Properties	Working Towards Registration	Total Area Retained	Total Area under Restoration
2637	580	47,260 ha	2,814 ha

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

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SEQ Catchments
Healthy Land – Healthy Water

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fauna vignettes

Carpet Python Courtship

There are some people who cannot abide snakes. But for the most part snakes live solitary lives, they are often mainly nocturnal and they are not prone to attack people unless they are provoked. So when a friend reported in early October that a large snake had taken up residence in a recess under the bearers of her first floor verandah, neither she nor we were unduly concerned. However an interesting series of events has since been observed.

This snake was subsequently recognised to be a 2.5 metre long female Queensland Coastal Carpet Python (*Morelia spilota*). A couple of days after she had settled in, an even larger python was seen to be exploring a way up to join her in her retreat. It had some scars on its back and was obviously a male. After an hour or so of gymnastics, it succeeded in entering the same recess. After this initial meeting the pythons have daily spent some hours at a time lying alongside or entwined with each other, in the sun, along the top of the gate. They later retire to their recess, presumably when they have gained body heat. This behaviour has now been repeated for the past fortnight, and as the days go on the male appears to be losing weight.

Most popular small snake books have little to say about the social life of snakes and concentrate mainly on the identification and distribution of species. However the Queensland Museum website threw more light on what seems to be happening at our friend's place.

In the wild, male Carpet Pythons outnumber females by between 5 and 10 to one. In spring the males engage in fights to determine which gets to mate with the local female. They may injure each other in the process; they are non-venomous but have many sharp teeth. The victorious male locates the female by scent, technically known as a "pheromone". Mating is "passive", they make contact by nose bumps, and subsequent copulation is slow and repeated, with partners lying for long periods, side by side or intertwined. Obviously this is what is going on at our friend's carport.

After mating, the fertilised female can retain her eggs, which may number as many as 47, for up to eight months in adverse conditions. When climate conditions are suitable, most usually in November or December, she then lays her eggs in a nest she makes sheltered under vegetation. Unlike most other snakes, she incubates the eggs by coiling around them, especially at night, and she will defend the brood with vigour if it is threatened. Hatching then takes two to three months. The young are vulnerable to predators, but fully grown pythons are virtually never taken on by carnivores, which would usually perish by constriction if they were to try!

References

Queensland Museum Website – "Queensland snakes"

Hoser, R (1982) Australian Pythons (Part 4), in HERPETILE, Journal of the International Herpetological Society, pp 2-17.

John Jeffreys
Land for Wildlife member
Eumundi, Sunshine Coast

Fauna Vignettes
is a feature designed for you - Land for Wildlife members - to send in images of wildlife and their habitats from your property. In 2010, 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 a short story to the Editor (see pg 2).

These scars on the male Carpet Python are probably the result of ritual combat with other male pythons vying for the right to mate with the local female.

Having followed the scent of a female python, this male Carpet Python is trying to find an entrance into the recess where the female is residing.

weed management

Ochna Eradication in East Brisbane

Article by Jak Guyomar
Land for Wildlife member
Gumdale, Brisbane

The right of this photo shows a typical Ochna infestation densely covering the entire understorey on Jak's property. The left side of this photo shows the result of years of diligent weed control with a diverse and open understorey.

This is a record of my experiences eradicating *Ochna serrulata* (also known as Ochna or Mickey Mouse plant) from our Voluntary Conservation Covenant property at Gumdale, in Brisbane's East. Eradication commenced in 2000 when we joined Land for Wildlife with Brisbane City Council.

Our property is approximately 4 ha with full canopy cover of Eucalypt, Acacia, Melaleuca, Lophostemon, Allocasuarina and other plants. Ochna had covered approximately 80% of the understorey with an impenetrable thicket. There were up to 100 Ochna plants per square metre, some 3 metres high. It was so thick that it had choked out even the lantana!

Ochna serrulata is a small woody shrub with narrow glossy leaves with serrated edges. Its flowers are bright yellow with five petals with green sepals below them. The sepals remain after the fruit forms and turn scarlet red. Fruit of Ochna is green and becomes black when ripe, with the combination of red sepals and black fruit giving it its 'Mickey Mouse plant' name.

Modus Operandi

Two methods of eradication were used.

Method 1. Digging and hand pulling. This was experimented with for some time; however, due to the brittle nature of the roots and the magnitude of the area to treat, it proved unsuccessful. Even when wet weather softened the ground, approximately 70% of the roots were left behind. This resulted in massive regrowth with up to 50 extra sucker plants from the roots of only one large plant.

Method 2. Cut and dab the stump with Glyphosate. The cutting was done with big secateurs for larger plants and standard size ones for smaller plants.

A glyphosate mixture was very carefully applied to the stump with a small, inexpensive pressure garden sprayer. This was done precisely, to avoid any application to the adjacent ground.

Herbicide Results

I experimented with various concentrations of water to glyphosate using lower concentrations in the earlier period and increasing as we observed the results.

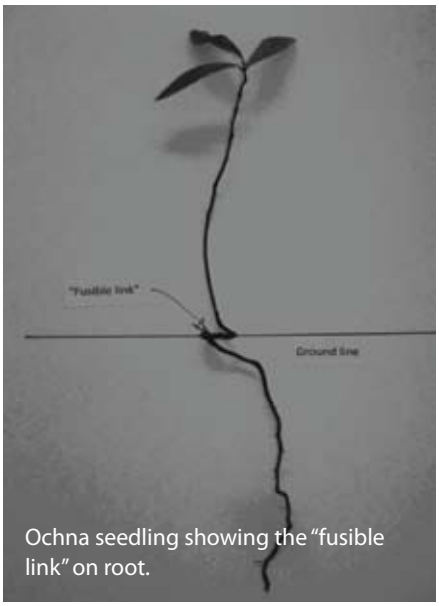
1 part glyphosate to 5 parts water (1:5)
Approximately 30% hit rate. Most affected plants were less than 5 mm in diameter. Anything over this size re-sprouted with a vengeance.

1 part glyphosate to 3 parts water (1:3)
Approximately 50% hit rate. This eliminated plants up to 10 mm in diameter. Again plants over this size re-sprouted, with large ones sending out many sprouts. The large ones with 20 or more!

1 part glyphosate to 2 parts water (1:2)
Approximately 70% hit rate. Larger plants were still not affected.

1 part glyphosate to 1 part water (1:1)
Approximately 95% hit rate. Large plant stumps were additionally split with a machete into a number of segments and then dosed. The plants of this size (25-70 mm) had approximately a 70% hit rate. In the remainder, while the stump and roots adjacent to it died, the roots further out re-sprouted over a period of a couple of years. These were dealt with by digging them out with a garden fork.

While this is last method is very labour intensive, it has proven to be the only successful technique for this regrowth. Great care is necessary to make sure that all roots that break off are treated with 1:1 glyphosate. Experimentation was carried out by adding a bit of carp liquid fertiliser to the mixture. It is not clear if there was a bigger hit rate using this.



Ochna seedling showing the "fusible link" on root.

Revisiting Treated Areas

The treated areas were monitored for regrowth every 6 months.

- 6 months after treatment. The only plants seen were the ones we missed.
- 12 months after treatment. A few seedlings began to appear after rain. These were carefully hand pulled. It is important to note that Ochna seedlings have a built in "fusible" point which breaks when hand pulling is done. Thus leaving the stump and root to regrow later. Very cunning!

This photo shows an area almost free of Ochna one year after a treatment using 1:1 glyphosate application to stumps. Note that the cut Ochna on the ground has started to breakdown into mulch showing that the cut plants need not be removed from the site.

Jak Guyomar (left) with the team of Conservation Partnership Officers from Brisbane City Council (L to R) Scott Sumner, Sue Nolan, Greg Siepen and Fflur Collier.

There was also re-sprouting of remaining roots of the larger plants. Cutting and dabbing these sprouts was done.

• 18 months after initial treatment. More seedlings appeared and were hand pulled. The cut and dabbed sprouts from the roots also regrew. These had to be eradicated by fork digging of all remaining roots and glyphosate treating any "loose ends" by very careful dabbing.

• Over regular 6 month periods all of the above was repeated. The number of plants requiring treatment diminished each time until an Ochna free result was achieved.

Recent experimenting with herbicide control of regrowth using fluroxypyr to the manufacturer's recommendations has proved to be very successful. It was done when the regrowth was no more than 10 to 20 centimetres tall. The surrounding susceptible plants were protected with plastic buckets placed over them, and very careful spraying of the Ochna regrowth carried out.

Ongoing vigilance is required to keep the property free of Ochna, as there is a lot of it in this district on other properties both adjoining and distant (confounded crows!). I am working with adjoining owners to encourage the removal of Ochna from their properties, even if I have to physically do it myself.

Revegetation

I found that there was no need to plant any new material.

One of the positive reasons found for the careful hand cutting and dabbing of Ochna was that there were approximately 10 small indigenous plants to the square metre growing under it. Any digging would have damaged and/or killed these. There were various native species of grasses, sedges, herbs and shrub seedlings which have since thrived and in-filled the understorey.

Some people have a philosophical objection to the use of any chemical substances for weeding. For small infestations of Ochna (a few square meters) which are manageable by manual or mechanical means this is practical, but when infestation is on a large scale (ie. hectares of thickets) this type of management is unrealistic and impractical.

At the thicket level of infestation the disturbance caused by digging and hand-pulling causes untold damage to small native understorey plants such as lomandras, lobelias, grasses, ghanias, ground orchids and other seedlings. Therefore I feel that it is an unacceptable method as it is more devastating than the method of singularly cutting and stump dabbing. Only a small amount of glyphosate is accurately applied to each stump and none is allowed to go anywhere else. The digging of Ochna regrowth as mentioned earlier is only minimal and so little disruption occurs. This results in maximum survival of indigenous plants.

Initially I used digging and hand pulling of Ochna and this invariably resulted in around 70% regrowth. The continuous digging and hand pulling over a long period had a devastating effect on small native species. Also the "ploughed" ground effect that digging and pulling encouraged infestation of other exotic weed species.

In my personal experience, herbicide use with glyphosate and fluroxypyr is the less damaging method with the greatest positive outcome.

Ochna's distinct flowers and fruit.
Photos by Sheldon Navie from *Suburban & Environmental Weeds of SEQ & Northern NSW,* CD 2002.

fauna profile

Living with Snakes in SEQ

Article by Deborah Metters
Land for Wildlife Regional Coordinator
SEQ Catchments

Snakes need to shed their skins to repair damages and to grow. Species can be identified by their old skins. Photo by Kieran Aland.

At the end of last year, I attended one of the Queensland Museum's Wildlife Workshops on snakes of SEQ. The presenter, Kieran Aland, is passionate about these animals and has accumulated a wealth of knowledge through years of studying and living with snakes. This article is a summary of Kieran's workshop.

Whether we like it or not, we all live close to snakes in SEQ. Within 500 metres of the workshop at the museum there would have been Yellow-faced Whipsnakes along the rocky edges of the Brisbane River hunting skinks, Carpet Pythons resting in ceilings, Keelbacks hunting frogs and toads around ponds and nocturnal Brown Tree Snakes hunting sleeping birds in tree tops. SEQ is full of snakes (about one-fifth of all Australian species occur in SEQ) and it is up to us to learn how to live with them.

Carpet Pythons remember where good prey can be found such as this mulberry tree in Moggill that attracts flying foxes when it is fruiting. Photo by Kieran Aland.

Some of us see snakes regularly whereas many people have never seen a snake in the wild. Snakes lead very complex lives in close proximity to humans despite not being seen often.

Snakes are more closely related to goannas than to legless lizards. Some legless lizards look like snakes due to convergent evolution (species end up with similar traits despite being unrelated genetically). All snakes in Australia have forked tongues (legless lizards do not). Forked tongues provide snakes with the ability to determine the direction of a scent. If there is more scent on the right side of the fork, the snake will veer right.

Most nocturnal snakes have small eyes and they rely heavily on scent to find their way. Most Australian pythons also have highly sensitive thermal imagery receptors on their scales that help them track the direction of a heat source. This system works best when there is a large difference between the ambient temperature and the temperature of their prey.

Snake skin is very sensitive and needs to be shed regularly to repair damages. The frequency of sloughing (shedding of the skin) is highly variable and is influenced by several factors such as breeding cycles, injuries and growth rate that is proportional to food availability. Aquatic and rainforest dwelling species also tend to slough more frequently than desert dwelling species. Juvenile snakes that have access to frequent meals may shed as often as seven times a year while mature snakes may only shed two to three times per year.

Snakes also shed their tongue tips and teeth periodically to maintain good health. White milky eyes indicate that the snake is getting ready to shed its skin as the skin covering the eyes is also shed.

Most snakes eat skinks and other lizards. As Kieran explained, the size and shape of lizards makes them easy to eat, much like kids enjoying spaghetti! There are several different techniques used by snakes for catching prey. The ambush method is used by some snakes as they sit and wait for prey to walk by. Snakes that use ambush hunting will find a fresh scent of their prey along a branch or path and simply wait patiently within accurate striking range of the branch or path.

> *"Studies have shown that snakes that are able to hide in good cover will rarely interact with humans."*

Snakes are known to return to a location year after year where their prey gathers. For example, one fruiting mulberry tree at Moggill attracts up to four Carpet Pythons each year. The pythons are waiting for flying foxes to land to eat the ripe mulberries. Pythons are experts at "punching" and gripping their prey with their teeth and then very quickly wrapping their bodies around their prey to avoid being bitten and scratched by the struggling animal. Other snakes simple strike their prey quickly, inject venom and immediately retreat allowing the prey to become immobilised before consuming.

We have probably all seen photographs of snakes (especially pythons) eating huge animals in comparison to the size of the snake. How does a snake breathe when it

Whipsnakes, such as this Black Whipsnake, are active daytime hunters that rely on their large eyes to detect fast moving skinks.
Photo by Kieran Aland.

has a wallaby in its mouth, throat and part of its stomach? Apparently their trachea acts like a snorkel running from their lips to their lungs allowing the snake to breathe while ingesting huge animals; a process that may take hours to complete.

The Death Adder that was on display at the workshop performed its hunting strategy for us to witness. Its tail-tip was very thin, segmented and worm-like. It had hidden its body brilliantly amongst leaf litter and remained completely still while it wriggled its tail-tip to look just like a caterpillar or worm. This "worm" is designed to attract the attention of passing quails, skinks and other animals that adders eat.

A key message from the workshop was that snakes are all about economy. They do not play. They only expend energy when they need to. They are incredibly efficient in how they use energy. Small active snakes such as whipsnakes and tree snakes may need to eat two to three times per week whereas large pythons tend to eat large infrequent meals. They are very economical and, as an example, a healthy adult python could survive in an environment without food, water or fresh air for approximately three weeks, without food or water for approximately seven months and without food for as long as three years.

Some snakes lay eggs, some give birth to live young, some incubate their eggs, some just lay and leave their eggs. There are advantages and disadvantages to all methods. In early March there are often lots of baby snakes around. By the end of April, lots of these baby snakes have been eaten by kookaburras and other predators.

If you are keen to learn more about the snakes that are around your home and property, there are several very good field guides available. Given that some snakes such as brown snakes, tree snakes and pythons can be highly variable in colour, patterns and size, it can be difficult to accurately identify a snake from one photo in a field guide. The best way to accurately identify a snake is to use identification keys that are found in good field guides. However, using keys may require you to count scales and to look closely at the scales around the eye. Obviously, it is not recommended to do this with live snakes! Roadkill can be an excellent resource to learn more about snakes up close.

If you want to attract these complex and secretive animals to your garden, you can create good snake habitat by layering rocks or cracked concrete to provide rocky ledges and shelter. Stacking garden waste, logs and leaf litter will also provide habitat for snakes and will attract snake prey such as skinks. A frog pond or well vegetated dam may also attract some snakes.

Studies have shown that snakes that are able to hide in good cover will rarely interact with humans. Whereas snakes that have to leave their shelter to cross lawns and concrete are more likely to come in contact with humans and potentially cause concern.

I can definitely recommend the Queensland Museum's Wildlife Workshops. Visit their website or call them to join their mailing list to receive notification about their 2010 workshop series.

Snakes are highly efficient animals. For example, adult Carpet Pythons, such as these males who are fighting to win the right to mate with the local female, may only need to eat one wallaby per year to survive. Photo by Phil Moran.

The Keelback is the only known Australian snake that can survive eating mature Cane Toads. All other snakes die as a result of ingesting the toxins excreted by toads. As these photos show, the Keelback is not afraid to take on an adult toad.

Photographs generously provided by Alana Shereston, Land for Wildlife member, Diamond Valley, Sunshine Coast.

vale

Lloyd Bird OAM
(22/12/29 - 6/9/09)

On Thursday the 10th of September 2009, Ipswich said good-bye to one of it's most loved sons, in Lloyd Bird, naturalist, self-taught botanist, champion for the environment and silent force behind the emergence and blossoming of conservation in Ipswich.

Lloyd passed peacefully after a brief battle with illness, with his dear wife Dulcie at his side.

From humble beginnings in the coal mining industry, Lloyd quietly earned the respect of an entire community, for his tireless work in the field of native plant conservation. Lloyd became interested in native plants whilst revegetating old mine sites, and quickly coined the phrase "the right tree in the right spot", after noting the clear advantage that local native plants had over introduced varieties.

To better understand the local vegetation, Lloyd began collecting specimens for identification. These were carefully pressed and sent to the Queensland Herbarium, where an amazing number were kept for the state collection. At last count, Lloyd had contributed over 1100 specimens personally, and collaborated on a further 1000. Among the more important specimens collected were a number of newly discovered species, two of which shown below, bear his name. Interestingly, botanists chose to name them *Notelaea lloydii* and *Marsdenia lloydii* rather than *N. birdii* and *M. birdii*.

Many school and community groups will sadly miss Lloyd's educational talks, which were an entertaining mix of passionate plant knowledge, gentle inspiration and larrikin yarns, all delivered whilst wearing his favourite blue t-shirt and cloth hat. It was widely known that when Lloyd got started on his favourite subject, the time management part of his brain was rapidly starved of oxygen in favour of his enlarged lobe of enthusiasm. And always, Lloyd would keep his audiences absolutely enthralled, no matter what their age, background or profession.

Lloyd's dedication, persistence and hard work were formally recognised on many occasions. He never spoke much about his awards, so I will briefly mention that they included the Order of Australia Medal for services to botany and conservation, the Ipswich Citizen of the Year, and numerous Landcare and Arbor Day awards.

He often told me he would rather be "poking around the bush" than accepting civic awards, particularly since the latter meant having to wear slacks, a collared shirt and a tie. Whether this was true or not, there are two things we can be certain about. The first is that he was immensely proud of his OAM, and secondly, that any award ceremony was considered a great opportunity to tell a few plant stories.

Of the many mourners who attended Lloyd's memorial service, all would remember Lloyd as a quiet, yet passionate man, the gentleman in the blue t-shirt and cloth hat, who left a legacy far greater than many of us realise.

I would like to end with two of my favourite of Lloyd's sayings;

"Geez, I'd talk to the Devil about plants if he listened", and "If they don't have trees in Heaven, I'm not sure I'm interested." Well, I'm sure they do, and I'm sure Lloyd has gathered a crowd of very willing helpers to plant a few more.

Written by Peter Copping
Land for Wildlife Extension Officer
Ipswich City Council

Lloyd's Milk Vine or Corky Milk Vine (*Marsdenia lloydii*) is a small climbing vine with milky sap and a white fissured corky covering over the stems. Photos by Glenn Leiper.

Small-fruited Mock Olive or Lloyd's Olive (*Notelaea lloydii*) is a small shrub found around the Boonah district with stiff opposite leaves and twiggy branches. Lloyd told the story that when he sent this specimen into the herbarium, they kept saying it was *Notelaea linearis*. It wasn't until the third specimen that someone looked at it in a different light. The Lloyd Bird Park at Mt Crosby has a sign dedicated to Lloyd Bird and his discovery of this native olive. Photo by Glenn Leiper.

flora profile

Native Hibiscus of SEQ

Article and images by Colleen and Geoff Keena, Glamorgan Vale
Visit their informative and colourful website at www.hibiscus.org

There are eight hibiscus species listed in the *Mangroves to Mountains* book, seven of which are native. They are *Hibiscus divaricatus*, *H. diversifolius*, *H. heterophyllus*, *H. meraukensis*, *H. splendens*, *H. sturtii* and *H. tiliaceus*.

We are fortunate to have native hibiscus occurring in SEQ. Not only are these hardy plants attractive to us but they also are attractive to local wildlife. Blooms of native hibiscus attract insects. Frogs can be found on blooms and foliage. We have seen parrots eating seeds and caterpillars feeding on leaves.

Native hibiscus are fast growing, hardy and suitable for most soils in full to partial sun but should be protected in frost prone areas. Native hibiscus species have proved hardy in the recent drought and make good pot plants. They may be damaged when temperatures dip below 0ºC but they usually recover. They are easily propagated from seeds or cuttings. Irritant hairs on seed capsules must be avoided.

This article details four of the most common hibiscus species in SEQ. It is worth noting that these four species, *Hibiscus heterophyllus, H. divaricatus, H. splendens* and *H. meraukensis* are closely related and can cross with each other.

There are smaller species that also grow in SEQ such as *Hibiscus diversifolius* and *H. sturtii*. *Hibiscus diversifolius* grows naturally in or near swamps and can be found on Bribie Island. *Hibiscus sturtii* is local but only performs as an annual.

H. trionum var. *trionum* is also listed in *Mangroves to Mountains* but is an introduced species. *H. trionum* var. *vesicarius* is the native form, but both forms have weed potential. We have grown all the species listed in *Mangroves to Mountains*.

Unfortunately, until recently it has been difficult to get seedlings of native hibiscus species. This is changing with the help of native plant nurseries and people like Peter Bevan who now sell native hibiscus at the Fernvale Markets.

As native hibiscus flowers in SEQ are mostly white, pink or yellow, this means that if you see a hibiscus with red blooms, it is probably *Hibiscus rosa-sinensis*, an introduced species. If you see a hibiscus with mauve flowers, it is probably *Hibiscus syriacus*, another introduced species. The hibiscus that changes colour from white to pink is *Hibiscus mutabilis*, again not a native.

Rosella, *Hibiscus sabdariffa*, is not a native species, although it is closely related to the four native species profiled below. Rosellas have become naturalised in tropical areas and companies that market rosella products advertise them as 'wild hibiscus' which adds to the confusion as to whether or not they are native.

Native hibiscus plants are quick growing and they bloom mainly in the warmer months. It is recommended that the tips are pruned regularly to form a compact bush and that the whole plant is pruned by one-third after flowering to increase future flowers and improve the shape of the plant. Prune after the frosts have finished.

Reference

Leiper G, Glazebrook J, Cox D and Rathie K (2008) *Mangroves to Mountains: A Guide to the Native Plants of South-east Queensland*. Revised Edition. Logan River Branch SGAP (Qld Region) Inc.

Hibiscus heterophyllus is the native hibiscus most commonly found in SEQ. Records were made by Allan Cunningham in 1824. He noted *Hibiscus heterophyllus* was very frequent along the Brisbane River, "clothed with a profusion" of flowers. In the early 1800s, it was grown by Empress Josephine near Paris. It is usually a very tall, prickly shrub. Local forms mostly have white flowers but flowers can be yellow or pink. It flowers heavily in spring. We always grow this species, particularly as the petals can be used for drinks, syrup and jam.

Hibiscus splendens occurs in a range of locations in SEQ from the Sunshine Coast to the southern side of the Brisbane River and around Esk. It is a tall prickly shrub. Local forms have furry silvery-grey leaves and pink flowers in spring. Plants on rainforest edges can reach 8 metres in height. Hibiscus 'Pink Ice' is a cross between a white *H. heterophyllus* and a pink *H. splendens*. Hibiscus 'Wirruna' is a cross between yellow *H. heterophyllus* and pink *H. splendens*, with a longer flowering period and a novel salmon flower colour.

Hibiscus divaricatus has a more limited distribution than the other species profiled. It is a prickly tall shrub with an extended flowering period. Forms seen in SEQ have lemon or gold flowers. This species has been a standout plant for us, flowering profusely even in drought. Hibiscus 'Citrus Haze' is a cross between *H. divaricatus* and *H. heterophyllus*. It has extended flowering and is suitable for jam.

Hibiscus meraukensis is much smaller than the previously mentioned plants. It usually has white flowers. Hibiscus 'Ian's Lemon' is a cross between *H. meraukensis* and *H. divaricatus*. It grows to 3 metres high.

weed profile

Syngoniums Jump the Fence

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

Syngoniums can have attractive variegated leaves (shown above) when grown as indoor pot plants. However when they escape into bushland areas, they loose their variegations and can dominate the understorey.

On a recent property visit in Pullenvale I was asked by a landholder to have a look at a vine that was running rampant in an ephemeral creek line. On inspection of the site I instantly recognised the plant as one my mother had grown as an indoor pot plant in my childhood - the ornamental classic syngonium (commonly named white butterfly, arrowhead vine, five fingers and goosefoot vine). My mum loved that plant because it lived happily for weeks (if not months) without watering when forgotten about, and was easily propagated and given away to friends by cuttings.

A member of the Aroid (Araceae) family syngoniums are a collection of at least 10 nursery cultivars. Other popular Aroid ornamentals such as monstera and philodendrons have joined sygoniums in the ever-growing group of introduced garden plants to "jump the fence" into our native forests. In fact, of the almost 3000 introduced plant species known as weeds in the Australian environment, 65% are "escaped" garden plants.

When kept in a pot as an indoor plant (and this is where they belong!) syngoniums have an arrow-shaped leaf variegated with white along the veins and centre of the leaf. If planted outside or dumped in natural areas, syngoniums leaves loose their variegation and become dark green forming a dense interwoven groundcover totally dominating any existing groundcovers. Referred to as 'epiphytic creepers', they begin their life in the soil and then eventually climb trees often losing their connection with the ground. Vines that climb trees transform into ugly monsters with large divided light green leaves with 5 to 11 different sized leaflets.

Native to Central America, syngoniums prefers moist shady conditions. They are a recorded weed of rainforests, open woodlands, waterways and riparian areas, roadsides, disturbed sites, waste areas and abandoned gardens. It has been listed as a weed in Florida, El Salvador, Guatemala, Honduras, Panama and is a major weed problem of the citrus industry in Belize. In Australia, syngoniums are naturalised in coastal districts of south-eastern, central and northern Queensland. It currently has a scattered distribution, but is quickly becoming more common and widespread. In North Queensland, syngoniums have been identified by a local environment group in a list of the 16 most significant weeds in Kuranda.

Once established, syngonium can be difficult to eradicate. All parts of syngonium plants are poisonous, so it is unlikely to be controlled by native fauna or introduced livestock. Manual control requires the removal of all parts of the plant including all major roots, which can create a lot of soil disturbance. Although syngonium is not a declared weed, Biosecurity Queensland officers confirm that several herbicides would be suitable for its control on private property under the "Minor Use Permit".

Local Government Weed Control Officers in North Queensland reported successful treatment of syngonium with glyphosate, fluroxypyr and metsulfuron-methyl herbicides depending on the site; however, (as with all weed control) they stress the need for monitoring and follow-up control. If you have a syngonium infestation, please contact your local Land for Wildlife Extension Officer to gain advice on the most appropriate control method.

As always, prevention is the best cure. Not planting syngoniums in the ground near bushland areas is the best course of action. Like many garden escapee plants, syngonium was first introduced to Queensland through nurseries. As a response to community concern over garden escapee plants, The Nursery Industry of Queensland has recently developed a good resource for backyard gardeners to guide them on buying non-invasive plants. The "Grow Me Instead" initiative promotes the positive shift in the attitude of both the nursery industry and consumers alike towards invasive plants.

The "Grow Me Instead" program identifies some common garden plants that have become environmental weeds in Queensland and suggests alternatives that not only benefit garden diversity but also minimises the risk of these plants becoming weeds of the future. You can visit the "Grow Me Instead" website at www.growmeinstead.com.au or you can ask your local Land for Wildlife Officer for a copy of the "Grow Me Instead" booklet for Sub-tropical Queensland.

To avoid problems of garden plants escaping into bushland areas, it is always best to grow local native species. Your local Land for Wildlife Officer is able to provide a list of native species suitable for your property.

References & useful resources

www.weedscrc.org.au
www.envirocare.org.au
www.health.qld.gov. au/poisonsinformationcentre
Navie, S (2008) *Suburban & Environmental Weeds of SEQ* Version 2. University of Queensland, DVD.
Permit to allow minor use of an AGVET chemical product for the control of environmental weeds in non-crop areas. Permit PER11463. www.apvma.gov.au/permits

my little corner

The Smoking Tree

I have a tree with a very bad habit - it smokes. Well, so it appeared to me as I sat idly looking at the Whalebone Tree (*Streblus brunonianus*) growing in front of my house. It was flowering in November and seemed to be puffing out many little clouds of greyish smoke which drifted off in the early morning breeze.

Although my report caused a bit of sceptical merriment among my friends, a search for the facts reveals this tree is actually going ballistic! Far from being a bad habit, this "smoking" is a clever method of pollination called "ballistic pollen dispersal". Male and female flowers are borne on spikes or clusters on a pendulous raceme and when the anthers open the pollen is ejected in a little vaporous cloud. This continues over several days until all the flowers are open. The flowers are followed by a pretty yellow berry that birds enjoy. The tree is small to medium in size but in some conditions can grow quite large.

This tree is not the only one in its family (the Moraceae) addicted to smoking. Burny Vine (*Trophis scandens*) also uses the ballistic method to disperse its pollen.

Laurel Hall
Land for Wildlife member
Tallebudgera Valley, Gold Coast

The Whalebone Tree has an unusual method to disperse its pollen. The pollen is ejected from these flowers shown in a vaporous cloud, making the tree look as though it is smoking! Photo by Glenn Leiper.

Have your reflections on your Land for Wildlife property printed in My Little Corner in 2010 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).

Yellow berries (above) and fruit (below) of the Whalebone Tree. Photos by Glenn Leiper.

Burny Vine is also a "smoker" using ballistic pollen dispersal. Photos by Glenn Leiper

"Grow Me Instead" booklets are available from your local Land for Wildlife Officer or visit www.growmeinstead.com.au

weed alert

Aerial Yam or Air Potato
(*Dioscorea bulbifera* var. *bulbifera*)

Article by Alan Wynn
Land for Wildlife Extension Officer
Sunshine Coast Regional Council

Aerial Yam is a perennial vine that produces new short-lived climbing stems each year from an underground tuber. Vines may grow up to 20 metres in a growth season easily smothering native vegetation. It has large alternately arranged heart shaped leaves 5-30 cm long with prominent veins. Aerial tubers (bulbils) are produced along the stems and may be 1-10 cm in diameter. It has small flowers arranged in elongated clusters with separate male and female flowers borne on separate plants.

The weed Aerial Yam can be distinguished for the local Native Yam (*Dioscorea transversa*) by the fact that Native Yam does not produce aerial tubers along its stems and it has relatively narrow leaves that are only 5-12 cm long and 2-8 cm wide.

Aerial Yam is dispersed via winged seed or by the aerial tubers. It has a widespread natural range from tropical Africa through India and China to northern Australia. It is becoming naturalised in south-eastern Queensland and north-eastern NSW. It is not a declared species; however, it is considered an environmental weed of riparian forests, urban bushland and forest margins and should be controlled in natural areas. Aerial Yam is considered one of Florida's most invasive plant species.

This plant is particularly difficult to control due to the small bulbils, so if you have this plant in your garden or if you think you have seen it in bushland near you please contact your local council or Land for Wildlife Extension Officer for advice.

References

Navie, S (2008) *Suburban and Environmental Weeds of SEQ* Version 2. University of Queensland, DVD.

Weed Spotters Newsletter. Summer 2008, Page 2.

Centre for Aquatic and Invasive Plants. University of Florida. http://aquat1.ifas.ufl.edu

All photographs by Sheldon Naive from
Suburban and Environmental Weeds of South-East Queensland, DVD.

"This plant is particularly difficult to control due to the small bulbils..."

Don't confuse…

Try not to confuse the weedy Aerial Yam with the Native Yam. Native Yam (shown near right) does not produce aerial tubers, has relatively narrow leaves and has a unique papery seed pod arrangement.

Photos by Alan Wynn (left) and Spencer Shaw (right).

book reviews

Restoring Natural Areas in Australia

by Robin A. Buchan

In 1989, *Bush Regeneration: Recovering Australian Landscapes* by Robyn Buchanan was first published. This book helped define the relatively new discipline of bush regeneration and was highly sought after as a text book for the bush regen' industry. In fact demand was so high that they quickly sold out. For reasons I'm unsure of, there was no reprint! For over 10 years bush regeneration practitioners have been unable to buy new copies of this very important book.

At last however this situation has been remedied and *Restoring Natural Areas in Australia* was published late last year. This new book is also by Robyn Buchanan and comes with a new title, a new look and new text. In spite of the differences, this book, like its predecessor, will be the book that defines the practice of natural area restoration for the early 21st century.

This new book is a great source of information about natural area restoration for all bush regeneration practitioners whether they be professionals, bushcare volunteers or landholders who are new to their block and are starting from scratch. One of the positives of the new book is a particular emphasis on project management and organisation, which will be a handy reference for all. There is also insight into the tools and techniques of restoration work with some detailed explanation of particular weed control methods.

This book could be accused of being a bit "lite" in some areas, but then again there is so much to be covered in the ever-expanding practice of ecological restoration, that this claim is inevitable for a book that covers the whole of Australia. This book will be a great resource that helps in the protection and restoration of Australia's natural areas. Hopefully this book will remain in print to keep up with the thirst for the much needed knowledge about restoring our natural areas.

Book Review by Spencer Shaw
Brush Turkey Enterprises.

Published by Tocal College NSW, 2009
Full colour, 264 pages
ISBN: 9780 731306 21 3
Price: $44
Available from Brush Turkey Enterprises
www.brushturkey.com.au (ph. 5494 3642)
and other specialist bookshops.

Bats: A Wild Australia Guide

by Dr Les Hall

Bats: A Wild Australia Guide is one of 23 new wildlife guides, published by Steve Parish Publishing. This great little book covers all 74 of Australia's bat species - from the tiny three gram insectivorous bats, to the one kilogram flying foxes, with wing-spans of 1.5 metres.

It is a handy guide perfectly sized for use in the field or as a quick reference to identify bats seen around the home, property or locality.

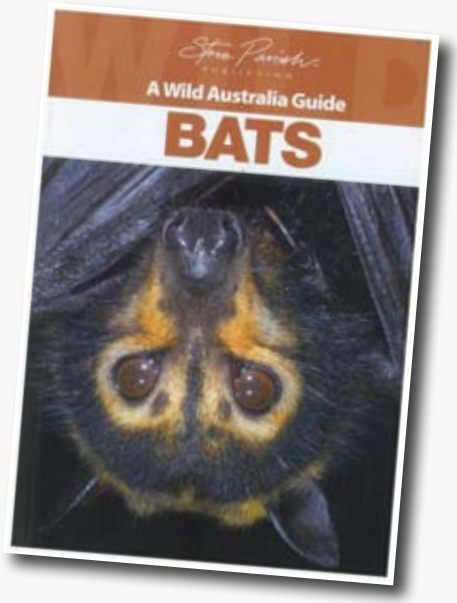
Dr Hall's text is succinct and covers general descriptions of each species, their range and habitats, threats and predators, and full life history, accompanied by beautiful photographs by renowned photographer, Steve Parish.

Designed for easy identification, the booklet is colour-coded for the six family groups of bat with species grouped by a number of common characteristic and external features. To find a species, simply identify the family characteristics, then go to the section of the book and look through the species profiles.

Surrounding the species profiles section is a host of information on biology, special features, ecology, human health factors, bat conservation, caring for injured and orphaned bats and links to more information.

It is highly recommended as a useful and handy bat ID booklet with brilliant photography that would appeal to wildlife lovers of all ages.

Book Review by Greg Siepen
Land for Wildlife Extension Officer
Brisbane City Council



Steve Parish Publishing, 2009
Soft cover, full colour, 96 pages
ISBN: 978 1741935 14 1
Price: $14.95
Available from Steve Parish
Publishing and all good bookshops.

responsible pet ownership

Are Pet Cats Compatible with Wildlife?

Article and photos by Melissa and Paul Prociv
Land for Wildlife members, Sunshine Coast
(Melissa is a Veterinarian)

A Green Treefrog (*Litoria caerulea*) climbing on the outside surface of a glass door, catching insects and watching the indoor feline audience.

Protecting wildlife while keeping domestic pets, especially cats, raises contentious and polarising opinions, but we cannot deny the benefits humans have derived from their companion animals over many millennia. When we moved onto our property, in late 2007, our overall aim was to enhance its attractiveness to native wildlife, but we also wanted a few pets. However, we knew how free roaming pets could cause stress to native animals, let alone injury, maiming and death.

Information and advice from a wide range of sources were essential for commencing the task of salvaging our remnant rainforest and revegetating extensive degraded pastures. We got rid of domestic livestock, removed barbed-wire fencing, slashed and sprayed weeds and started to repair soil erosion. We bought rainforest seedlings as tubestock from various suppliers and started growing our own.

As for pets, we decided against dogs for various reasons. While just about every domestic feline is innately hard-wired for hunting, after considerable homework, we settled on a breed of domestic cat we knew would be content living a secure indoor life, separated from wildlife, and would make excellent domestic companions for us.

The effort we invested in choosing cats best suited temperamentally for an indoor lifestyle was essential, as not all cats are happy to stay indoors and some cats, when unhappy, quickly resort to inappropriate behaviour and become difficult to live with.

We considered night-time-only-curfew for cats to be a token gesture, as even well-fed, pampered pet cats will be tempted to catch wildlife, whenever a good opportunity presents. We were also well aware that inappropriate pet selection underlies the enormous stray, feral and shelter populations of cats, leading to euthanasia being their biggest killer in our society.

Having selected our three pets, we made sure they had collars and tags on them, and microchips (to help locate them in case they did escape), were vaccinated, de-sexed and had regular health checks. In addition, while ensuring our house was cat secure, we also sought to give them secure access to fresh air and sunshine, which meant building a cat-proof enclosure. Enclosures can be built in various ways: assemble your own from scratch, buy a kit from a commercial supplier or have one professionally installed.

For maximal outdoor exposure, the walls can be made from wire mesh or reinforced netting. The enclosure can stand free in your backyard, or connect directly to the house by a tunnel or cat-flap door.

We decided to enclose part of our second story verandah, away from dominant prevailing winds, with access to the house via a cat door. The walls comprise wire-strengthened, pre-stretched, low visibility netting (Catmax Clearnet Enclosure) allowing a view. Being at tree-level, the cats can enjoy the temptations offered by wildlife in the garden and surrounds, without causing any damage, and we can sit and relax with them.

We also leash-trained our cats so they can be walked on lawns around our house to get their fill of grass grazing, without bolting suddenly to catch an unsuspecting bird that had been an earlier subject of admiration. Cats sleep 13-16 hours daily, a need we satisfied by providing safe perches throughout the house and outdoor enclosure where they can get away from each other. We set up "roosts" on top of the fridge, shelves and file drawers and also provided hammocks and marine-carpeted pineboard cat walks under the verandah roof in the Catmax enclosure.

Other necessities for indoor cats include scratch and climbing poles for isometric exercise (which cats need more than dogs), prey-like toys, regularly cleaned litter trays and free access to food and water. We brush them frequently to remove sloughed fur so they don't have to lick it off or leave it around the house.

Catmax secure outdoor enclosure on verandah.

Cats lying around on high hammocks in Catmax secure outdoor enclosure.

Collared Sparrowhawk perched on verandah railing within 6 metres of cat enclosure (raptor identified from our photo by Greg Czechura, Queensland Museum).

How has this approach ensured our pet cats are happy but compatible with wildlife?

Firstly, wildlife moves freely around our house, without signs of disturbance. It was thrilling to see a Collared Sparrowhawk sitting undisturbed on the verandah railing within 6 metres of our cats in their enclosure. We are regularly visited by many other bird species, including Pale-headed Rosellas, Australian King Parrots, Rainbow Lorikeets, Sulfur-crested Cockatoos, Galahs, Yellow-tailed Black Cockatoos, Blue-faced Honeyeaters, Spangled Drongos, Noisy Miners, Australian Magpies, Pied Butcherbirds, Pied Currawongs, Laughing Kookaburras, Crested Pigeons, Striated Pardalotes and Pheasant Coucals. Wood Ducks often bring their young to the windows downstairs.

Around the house we also see Swamp Wallabies, and many species of snakes, including Carpet Pythons, Brown Tree Snakes, Green Tree Snakes, Blind Snakes and Red-bellied Black Snakes; lizards including Lace Monitors and Robust Velvet Geckos; frogs, including Bleating, Emerald-spotted, Graceful and Green Treefrogs, Eastern Sedgefrogs, Great Barred-frogs, Striped Marshfrogs and pobblebonks; many insects and arachnids including the uncommon Golden Huntsman.

Secondly, the cats fulfil their hunting instincts by stalking and watching potential prey, without inflicting damage.

Thirdly, the cats are protected from the regular hazards of outdoor feline life, including car strikes, attacks by foxes and by feral and off-leash dogs, attacks by feral and roaming domestic cats (territorial fights can result in lacerational abscesses and transmit feline infectious agents, such as Feline Immunodeficiency Virus), envenomation by snakes and paralysis ticks and intoxication from eating baits and Cane Toads.

Our choice won't be for everyone, and it wasn't cheap, but we derive great pleasure from seeing our wildlife close up and the population is healthy and growing. At the same time we enjoy the companionship and amusing antics of our pet cats, who are obviously very content. Keeping cats indoors with access to secure outdoor enclosures has parallels with the dog leash laws; in years past, it was normal to see pet dogs roaming freely, but now restraint is integral to responsible dog ownership.

Useful information about options for responsible cat ownership is available at the following sites:

Indoor cat health and behaviour

Consult your veterinarian
www.pethealth.com.au/Page/cat-assimilation-and-moving-cat-pet-pick
www.vet.ohio-state.edu/747.htm

Commercial cat enclosure companies (RSPCA endorsed)

www.catmax.com.au
www.catnip.com.au
www.catenclosures.com.au/
www.eftel.com/~oscillot/cat%20fencing%20home.htm

Cat H-style Harness and Leash

We use this very secure, comfortable harness and leash for walking cats because it has easy to use adjustable collar and girth bands, secured by plastic clip buckles.
www.lupinepet.com/cat/cats.php

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

International Year of Biodiversity

The United Nations declared 2010 to be the International Year of Biodiversity as a celebration of life on Earth and to recognise the value of biodiversity in our lives.

The vast variety of life or biodiversity on Earth is essential for sustaining the living networks and systems that provide us with everything we need to live including air, water, shelter, food, fuel and medicines.

Biodiversity is constantly changing. It is increased by genetic change and evolutionary processes and reduced by processes such as habitat loss, degradation, population declines and ultimately extinction. With the continuing increase in human population and unsustainable activities, biodiversity loss is accelerating.

A minimum of 16,928 species of fauna worldwide are currently threatened with extinction. In the South-east Queensland region, there are over 200 species of fauna listed as threatened and several that are considered extinct. In Brisbane alone, 40% of the 523 fauna species recorded are at risk of local extinction due to habitat loss.

The Secretariat of the Convention on Biological Diversity recognised the role humans have to play in the protection of biodiversity in the statement: "humans are part of nature's rich diversity and have the power to protect or destroy it".

The Year of Biodiversity is recognised as the greatest opportunity for biodiversity to get its place on the international agenda. Worldwide events throughout the year will be held to raise awareness, promote the protection of biodiversity and encourage organisations and individuals to act against biodiversity loss. The target is to protect and restore habitats and natural systems to achieve a significant reduction in the current rate of biodiversity loss.

There are many events and exhibitions being held in Queensland including the Butterfly Man of Kuranda exhibit at the Queensland Museum until 12 July. Please check with your local Council and community groups to find out what's on in your area. For more information regarding the International Year of Biodiversity go to www.cbd.int/2010

Article by Claire Kelly
Conservation Partnerships Program
Brisbane City Council

Photos (top) Blue Triangle butterfly; (middle) Major Mitchell Cockatoo on a Land for Wildlife property in Western Brisbane; and Blue-faced Honeyeater photo by Geoff Keena.

Land for Wildlife South East Queensland is proudly delivered and locally coordinated by the following 11 Local Governments and the Burnett Mary Regional Group: