November 2003
Issue No. 11

The COD Line

Habitat for COD means habitat for everyone

Rainforest reclaims Lantana World

Di Collier
Conondale

Three years ago, my partner and co-combatant, William Kendall, and I proclaimed war on Lantana World.

Much of our 150 acre piece of paradise, situated in Conondale at the headwaters of the Mary River, has been invaded by lantana. The property has diverse habitats ranging from open eucalypt to rainforest. Probably as much as 25 per cent is affected by lantana to some extent.

The Plan

We drew up an attack plan. Lantana World, an area of about 25 acres with a small stream running through it, consisted of a variety of natural habitats, so different strategies were devised to suit different sites.

Hand-to-hand combat

Our basic strategy is to attack each area in a manner that requires the least disturbance, either mechanical or chemical. As a general rule we find that pulling lantana by hand produces the best result. The ground is not disturbed so subsequent weed invasion is not such a problem and any emerging native seedlings are not disturbed. Removal by hand seems to be more thorough than other methods and less follow-up is required. The instant gratification from this method is very motivating, as you see the land being restored before your eyes. The major downside to hand pulling is that it is very labour intensive.

Lantana scraped into piles, exposing rainforest understorey species and tree seedlings. [Di Collier]

Early battles

Our first campaign was on a hillside of wet sclerophyll forest where the lantana understory had been burnt by a fire six months previously. Breaking the area into a grid and walking in a line we pulled each bush by its base which had been exposed by the fire. Then we hung the bushes by their roots up in the trees to stop the lantana from resprouting. Two years on, we have completed two follow-up weedings over this area. All the dead bushes have fallen to the ground and it is hard to conceive that the area was once covered by lantana.

In areas where the lantana bushes were so dense they joined into a carpet, it was necessary to drag the bushes out of the immediate area, making piles where the lantana decompose before being spread out again after about two years.

Where the lantana had escaped up trees we tracked down the root base and, if possible, pulled it out and hung it up. If not, we used my favorite tool, the pruning shears, to cut the branches, then we swabbed the bases with glyphosate. Some of the bases were so large we needed a chainsaw. The vegetation was left up the tree to die. This was far more energy efficient than our initial method of pulling every branch and vine from the tree and dragging it onto a pile. It

Continued on Page 2 ...

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looked ugly at first when all the vines were dead and covering the trees but it took surprisingly little time before they started breaking off and falling to the ground.

Heavy weapons

Weapons of Mass Destruction – chemicals and machinery – play a vital but limited role in our eradication campaign. As part of my basic ammunition kit I carry a 5 litre garden spray of 'frog-friendly' glyphosate. I set the nozzle to squirt, not spray, and place it on the the stump to limit the spread of chemicals into the environment. Any root system that cannot be pulled by two people is destined to be cut and swabbed.

The big guns are only brought in as a last resort. One area of lantana was so dense and expansive, we tried, but finally declared it 'Mission Impossible' for hand-to-hand combat. The bulldozer was called in, with me riding sidesaddle and directing the action to minimize the destruction. The earth was bare and we were left with a huge pile of lantana and weeks of work to rake the dozer tracks, pull up all the roots, and collect all the stems off the ground.

That was just the beginning. As soon as the first decent rains came the area sprang to life, not with rainforest trees as hoped (although there are many) but with wild tobacco and prickly tobacco which formed a canopy in a few months. We decided to keep the wild tobacco as a canopy then gradually remove it once native seedlings are established. This is a huge project and we are already behind time as the wild tobacco has fruited.

We knew this area was an experiment and it relied on huge amounts of labour. We usually have the assistance of WWOOFERS a few times a year but this year we have had none. Our back-up strategy is to cut and slash the area, sow grass seeds to control weed growth, and then undertake a tree planting. Hopefully we can win this battle without having to resort to this Plan B.

Fighting smarter

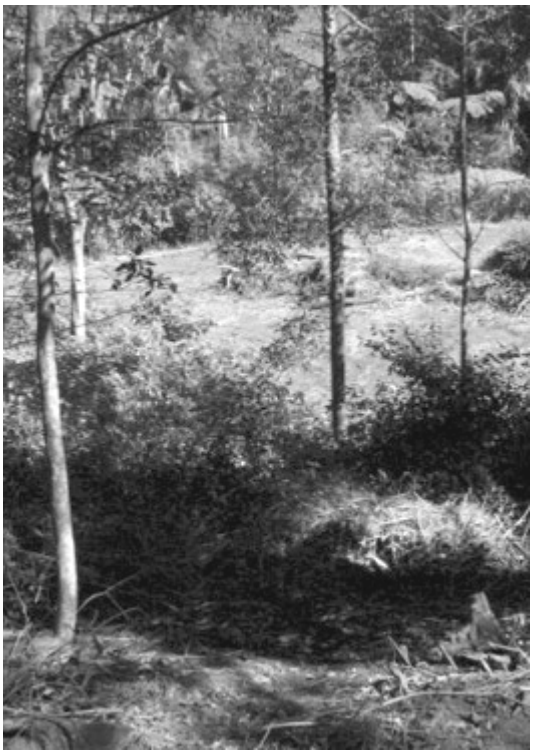
Because our method is so labour intensive it made sense for us to work smarter rather than harder by utilising natural cycles. After prolonged dry weather, frost or fire the lantana becomes stressed and has few or no leaves. Then it is easier to find root bases and the plants dry and die quicker. But when the soil is damp, stubborn roots pull up so much more easily. (We also use this technique with groundsel.) Bulldozing is better carried out during a dry spell in winter to allow more time to pull roots and restore the site before the rains bring the inevitable weed invasion. Dry soil also lessens site damage and gives the site time to stabilize before potential erosion-causing rains arrive.

Collateral damage

We have tried to minimize collateral damage to the birds and animals who've been calling the lantana 'home'. In some areas, lantana is the sole vegetation. In these areas in particular the lantana was removed in stages to lessen the effect on wildlife.

The War continues

Waging War on Weeds is a huge commitment both of resources and troops because it is essentially a war without an end. However the satisfaction of repelling the invaders and slowly reclaiming territory for native plants and animals is immeasurable. Now after little more than two years of combat we have extensive natural re-growth and are enjoying previously inaccessible areas of our property.



The view down into Lantana World, where the battle front divides cleared land (centre) from rainforest (at top). [Di Collier]

Next year will be a year of maintaining our lantana-free zones. I am investigating possible uses for lantana, and I would be interested to hear of other people's experiences with lantana.

To talk lantana, email Di Collier at dicollier@hotmail.com

Policeman's Spur Rivercare Group

Di Collier
Volunteer Coordinator
Conondale

Policeman's Spur Rivercare Group was formed primarily by property owners located along Policeman's Spur Road (Conondale and Maleny) whose land adjoins the Mary River or Geraghty's Creek. The area is situated in the elbow where the Blackall Ranges meet the Conondale Ranges. It encompasses land that is both spectacular and fragile, from the top of the range to the valley below.

Our newly formed group is in the initial planning stages for our first project. Already many of the members have individually undertaken significant works of riparian protection through revegetation, fencing and weed control.

I am excited by the potential of what we can achieve together as a community. If we have clean water, robust forests, diverse habitats and a healthy seed bank we are well on the way to improving the health of waterways downstream for everyone to enjoy. As the recipients of $8350 from the Caloundra City Council annual grants program, our goals will be a little easier to achieve.

If you are interested in starting up a local Rivercare action group, contact the Mary River Catchment Coordinating Committee Resource Centre on 5482 4766 or mrccc@qldwide.net.au

What lurks in the Mary? Not just Cod!

Rudolph Hoffman
Owanyilla, Tiaro

I was about 13 years old when my mother and father and their six children moved from Curra to a farm on the Mary River at Bell's Bridge. As we didn't have a boat at that time, we put a cross-line along the bank and every morning we would get at least five cod between five to ten pounds in weight. At the mouth of Widgee Creek, we once caught a 20-pounder. The last one we caught was 22 pounds in 1950.

In 1937, I was standing on a log that jutted out over the river with a .303 rifle waiting for a mullet to show. A big fellow came near the surface and I got it. As it sank I jumped in to retrieve it. When I opened my eyes underwater to grab the mullet, this big black thing snapped it up, and I got out quicker than I went down!

A couple of years later, one night at about 8 pm I decided to cross the river in the boat to collect our groceries from our neighbours. It was pitch black and my hurricane lantern showed little more than a pool of light around my feet. As I neared the river bank, this thing like a giant lizard rushed past me into the river with a loud splash. When I got to the boat, it was rocking in the animal's wake.

Another time my brothers and I watched as a scrub possum came down a fallen log jutting into the river – we guessed to have a drink because it was a very hot summer's day. Next second it was gone in a squeal and a splash. We saw it was taken by something big which we assumed was a crocodile.

A neighbour put a net across Widgee Creek where it empties into the Mary. Just before dark, he went to check his net. He saw what must have been a crocodile coming out of the creek. This creature hit his net and just kept going, leaving a broken net behind.

The mother of a young man we knew told us this story. She found his axe in the chopping block where he had been cutting wood, but he was nowhere to be seen She thought he went to the river to fish or swim – as he quite often did – without telling her. (From where they lived, the river was six miles away.) He was never found, despite an extensive search. Maybe a crocodile took him, who knows?

We sold the farm and left the Mary River in 1952. It has been an idea of mine for a long time that the crocodiles are maybe responsible, at least in part, for the loss of the Mary River cod. After all, they have to live on something, and the cod are slow and easy to catch. Recent crocodile sightings at Emery's Crossing (Gundiah), at the end of Redbank Road (Tiaro), and also at Lamington Bridge, Copenhagen Bend and Aubinville (in the Maryborough area) indicate they're still around.

Platypus forms flow in

Joel Bolzenius
Noosa & District Landcare

More than 150 platypus locations/ habitats have been identified throughout the Sunshine Coast region by people completing the Platypus Survey forms. Some 50 forms were returned by CodLine readers.

Many sightings have been recorded around Kin Kin, Conondale and Cooroy, indicating healthy stable platypus populations in these regions. Surprisingly, sightings have been recorded in relatively built up areas such as inner Nambour, Maleny and Eumundi.

Not all the news has been positive. Six platypus deaths have been recorded (presumably due to the recent drought) along a small stretch of creek in the Maryborough region. There was also a grim story of a platypus dying of exhaustion trying to climb a dam wall.

Even though the platypus is still quite common in the local region, it has experienced a severe population decline in areas in southern states, and has totally disappeared from mainland South Australia.

Envirofund funds are still being sought to link and restore platypus habitat in the Noosa and Mary River Catchments. Work of this nature will benefit not just platypus, but also contribute to improved water quality, increased riparian vegetation and bank stabilisation, and importantly, develop community awareness.

For more information, contact Joel Bolzenius at Noosa & District Landcare on 5485 2468 or at futurescentre@spiderweb.com.au

Weed seed in mulch or forage

Bill Schulke
DPI, Bundaberg

There is always a risk that fodder and mulch will be contaminated with weed seeds.

Drought represents an increased risk of weed seed spread with fodder and mulch. The reduced ground cover provides ideal opportunities for weed seeds to germinate and establish on drought-breaking rain. Demand for fodder increases while supplies often dwindle, which means poorer quality fodders are often marketed, some of which are contaminated with weed seeds.

When drought breaks be vigilant for weeds. Pay particular attention to areas where stock were fed drought fodder and in the areas they would have grazed within a week of eating the fodder. Always check areas where mulch has been used.

Low spawning rate

Darren Knowles
Hatchery Manager
Gerry Cook Fish Hatchery

The season is well underway, with around 30,000-35,000 fingerlings in the troughs. These numbers are down on previous years because the broodstock have produced less spawnings. This seems to be due to the relatively mild winter we've experienced.

The first spawnings were found on the 9th and 13th of September, coinciding with the full moon on the 11th. These spawnings weren't very large but were of reasonable quality and hatched out very well. All these fingerlings are now eating pond-produced zooplankton and Victorian black worms.

The hatchery has two more very good broodstock on hand for next season, thanks to the Borumba Dam fish stocking group and the DPI. These fish, of about 11 kilos and 5 kilos, are yet to be sexed but they should be a breeding pair as they were found together.

We were set to trial a new grow-out system to handle our growing numbers of fingerlings, but because we have less fingerlings this season the existing system of indoor troughs will cope and the trial has been put on hold. The new system will involve putting fingerlings in troughs, made of oyster mesh, which are floated in the outdoor ponds. Each pond will hold a number of these troughs, and as the zooplankton bloom in a pond dies out we will move the troughs to a new pond with a fresh bloom. The previous pond will then be drained and dried in preparation for the next bloom. As with any new system there will surely be teething problems, so rather than risk the fish this year we will wait until next season to try the new system out.

The hatchery is once again proving to be a very popular meeting place for Landcare and other associated groups. The hatchery recently hosted some 100 school students for the national tree planting day, as well as 50 members of various Landcare and council groups during the State Landcare Conference.

If you would like to arrange a tour of the Lake Macdonald hatchery for your school or other group, call Darren Knowles on 5442 5341 or 0407 126 256 to set a date.

Production improved

Gerry Cook, Tewantin

Back in 1995, more than 57,000 little cod were hatched but only 13,000 fingerlings released. The new team thought extensively about how to improve production, and these days the number of fingerlings released is mostly very close to the number hatched.

Since 1995, the number of rearing troughs has more than doubled, and vastly improved water circulation, filtration and heating facilities have been installed. The size at which fingerlings are released has been decreased from 50 mm to 35 mm, which means less food, less space and less time are required. The fingerlings can be raised entirely in the indoor troughs, avoiding the problems with disease and predators in the outdoor ponds. All this has contributed to the higher release numbers we've enjoyed in recent years.

Much credit is due to volunteers Lionel Shambrook and Vince Collis who have given unstintingly of their time, energy and expertise.

Large woody debris sites planned

Dale Watson, Project Officer, Mary River Catchment Coordinating Committee

Large logs with attached root wads (sourced from a local road widening) and some large hollow trunks are ready to go in at large woody debris (LWD) reintroduction sites on lower Obi Obi Creek and Amamoor Creek. The aims are to improve habitat with instream LWD and to counter bank erosion by diverting flow with engineered log jams.

Local landholders are enthusiastic about the projects and rearing to see the work completed before the summer rains come.

The Mary River Catchment Coordinating Committee is undertaking the work, with funding assistance from the Maroochy and Cooloola shire councils and the Department of NRM, monitoring by QDPI Fisheries and advice from Dr Andrew Brooks and Dr Nick Marsh of Griffith University.

Restoring undercut banks using LUNKERS

Michael Hutchison
Freshwater Fisheries Research Coordinator, DPI
and
Dale Watson
Project Officer, MRCCC

Paul Brown, DPI Victoria, showing the extent of undercut beneath a newly installed lunker [Photo courtesy of Paul Brown]

Many people are aware instream large woody debris is important for fish in our rivers and creeks, particularly for the Mary River cod, but another important habitat type, also lost as a consequence of clearing riparian vegetation, is undercut banks. Surveys by Bob Simpson (DPI Fisheries) have shown that undercut banks along the edges of runs and riffles are used by juvenile Mary River cod. Eel-tailed catfish, long-finned eels, Australian bass, and lungfish also use undercut banks.

Undercut banks typically form on the outside bends of streams. The roots of the riparian vegetation form mats which stabilise the undercuts. Riparian vegetation clearing and overgrazing along stream banks commonly results in erosion and bank slumping, destroying the undercut habitat.

Rock reinforcing is frequently used as an engineering solution for bank slumping. While preventing further bank slumping and erosion, rock reinforcing may actually prevent the reformation of undercut banks.

In the USA, devices known as 'lunkers' have been installed in many streams to control bank erosion and provide habitat for fish. Pre-assembled sections of hardwood planks or sleepers are typically installed on the outside bend of a stream, backfilled and covered with rocks and soil to help hold them in place, then planted over with streamside species. This creates a naturally functioning site with an artificially created undercut bank which provides fish habitat and prevents further bank erosion. Fish biomass in some US streams restored with lunkers has increased by more than ten times.

Lunkers have been installed at only two sites in Australia (both in Victoria) under the direction of Paul Brown of DPI Victoria. While these installations appear to have successfully stabilised the eroding banks, their contribution to fish habitat and use by native species have yet to be evaluated.

It is proposed to trial lunkers at two sites in the Mary River catchment, building on habitat restoration works already carried out by the MRCCC and other community groups. DPI Queensland have agreed to assist with monitoring the fish community. MRCCC and DPI currently have proposals submitted for funding to install lunkers and monitor the fish communities.

For more info, contact Dale Watson at MRCCC on 5482 4766 or 0438 177 054 or at mrcccdale@qldwide.net.au

Wildlife Workshops

Karen Shaw
Brush Turkey Enterprises
Maleny

Environmental education has become the collective responsibility of the community, and small businesses and individuals are playing an ever increasing role in this positive approach.

Over the past two years a small but energetic group has been running Wildlife Workshops for the community.

These four environmentally-ethical businesses have provided focused, positive and practical learning opportunities with the assistance of many high-profile environmental leaders.

The businesses involved are Brush Turkey Enterprises (rainforest restoration), Hollow Log Homes (nestboxes for wildlife), Forest Solutions (revegetation) and Witjuti Grub Bushfood Nursery.

For more information, contact Karen and Spencer Shaw of Brush Turkey Enterprises on 5494 3642 or via email on brushturkey@myplace.net.au

MARY RIVER
CATCHMENT COORDINATING COMMITTEE
News

Winners of the 2003 Qld Catchment - Landcare Award
Winners of the 2003 Qld Rivercare Award

MRCCC Resource Centre
53 Tozer St (PO Box 1027) Gympie 4570
Phone *5482 4766* ***Fax*** *5482 5642*
Email *mrccc@qldwide.net.au*
Website *www.widebay.net/icm/mrccc*

The Cod and Catchment Care

Cr Ray Kelly
Noosa Shire Council, and
Local Govt Delegate, MRCCC

The Mary River cod has been a great tool for motivating land owners to improve streamside habitat in areas where the cod can live. The response from property owners has been great, with a lot of effort put into improving habitat by rehabilitating riverbanks, installing off-stream watering points for stock and so on in areas where cod can survive.

I became aware of the success of this rehabilitation work while I was a member of the Cod Recovery Team, so when DNR&M approached Noosa Shire Council about forming a number of Catchment Care committees, I volunteered to help with forming the Lake Macdonald Catchment Care Committee (LMCCC). I rounded up as many landholders as possible for the Committee, and the response was very good. The LMCCC has gone from strength to greater strength, particularly with its work on cabomba. The Committee, together with Tom Anderson of the Alan Fletcher Research Station, have been able to raise enough money and involve the right people for the biological control for cabomba to be investigated, which is in progress at this very moment.

The success of the Lake Macdonald group and the landholder contributions to catchment care is due to the sense of ownership these people have in improving the environment in which they live. (We tried to start a group in early 1988 and failed, because we at Council tried to set it up from the top down – wrong! 'Ground up' works all the time.)

Our Mayor asked me to nominate as a Local Government delegate on the Mary River Catchment Coordinating Committee (MRCCC). As I write, I have only attended one meeting, but I believe it is very important for Noosa Shire Council, as a user of water, to be represented on the MRCCC.

Cr Kelly can be contacted at Cooroy Sports & Leisure on 5447 6308 or via email on kellyray@optusnet.com.au

Coordinating Committee News

At the MRCCC Annual General Meeting in September, Brooweena grazier Harry Jamieson was elected to his second term as Chair of the organisation. Special Member Marg Thompson remains Secretary and lower Community Delegate Sue Chapman continues as Treasurer.

Newly elected lower Mary Landcare delegate, Paul Marshall from the Gympie Landcare Group, was elected to the position of Vice Chair, which will reinforce the MRCCC's relationship with Landcare groups throughout the catchment.

The major issue facing the Committee is funding options (or the lack thereof) which enable community natural resource management (NRM) organisations such as the MRCCC to operate.

Also high on the Committee's agenda is protection and preservation of threatened species in the Mary Catchment, and implementing the Mary River & Tributaries Rehabilitation Plan in order to improve and preserve riparian and aquatic habitat.

The Committee is also strengthening partnerships with local government to assist with determining priority environmental issues from shire to shire.

To bring an issue to the MRCCC's attention, simply contact your Sector delegate as listed here:

Beef/Grazing	Harry Jamieson	5484 2143
Dairying	Dave Burnett	5486 1248
Dept of Primary Industries	Graeme Elphinstone	5480 4403
Education	Mark Cridland	4168 8190
Environment	Roger Currie	4129 2019
Extractive Industries	Mollie Gilmour	5446 0161
Farm Forestry	Ken Matthews	5483 6114
Fishing	Vince Collis	5485 2334
General Community, Upper	Dave Sands	5494 4589
Gen Community, Lower	Sue Chapman	5484 6383
Horticulture	Jim Buchanan	5482 6383
Landcare, Upper	Mike Askham	5435 8038
Landcare, Lower	Paul Marshall	5482 5725
Local Government, Upper	Ray Kelly	5447 6308
Local Government, Middle	Julie Walker	5484 5302
Local Government, Lower	Jenny Burton	4121 3759
Sugar	Frank Sestak	4121 4441
Special Member	Nai Nai Bird	5482 1359
Special Member	Margaret Thompson	5494 4420
State Development	Bridget Edwards	4121 1780

MARY RIVER News
CATCHMENT COORDINATING COMMITTEE

Winners of the 2003 Qld Catchment - Landcare Award
Winners of the 2003 Qld Rivercare Award

MRCCC Resource Centre
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Phone *5482 4766* ***Fax*** *5482 5642*
Email *mrccc@qldwide.net.au*
Website *www.widebay.net/icm/mrccc*

Leaping frogs

Eva Ford
Project Officer
Living with Threatened Species in the Kenilworth – Belli Area
MRCCC

The Mary River Catchment Coordinating Committee's Living with Threatened Species in the Kenilworth – Belli Area project is now in full swing with the recent rain. All those boy frogs just can't help themselves as they gear up to make the best use of the warming conditions; putting on their best singing voices, be they husky or chirpy. Many people don't realize that only the male frogs call for a mate. The females are silent.

Breeding males can also be recognised by a small area of raised and pigmented tissue on the underside of their thumb known as the nuptial pad. This pad helps them to clasp the female in her armpit area so that he can be in the right position to spread his sperm over the eggs as soon as they are laid. Amplexus is the term used for the positioning of the male on the female's back (see photo) prior to and during egg laying and fertilization.

One aim of this project is to map frog locations throughout the Kenilworth area, concentrating on the tributaries of the Mary River and on the threatened species that inhabit this area, these being the giant barred frog *Mixophyes iteratus* (endangered) and the cascade treefrog *Litoria pearsoniana* (vulnerable). To do this we must head out when the frogs are active and record their locations.

When we are surveying for frogs we go out at night starting at dusk. During and after rain is best for most frog species. Frogs can be located by searching for 'red eye' with a headlamp. This is the same reflection of light on the retina of the eye that we get in photos when flash has been used. To see 'red eye', the light source must be positioned close to your own eye. If you hold your torch low near your waist, you will not see the 'red eye'.

Male and female stony creek frogs Litoria lesueuri *in amplexus [Brad Wedlock]*

We also use frog calls to locate and identify frogs because each species has a distinctive call. An entertaining and informative reference for frog calls in our area is the CD 'Australian Frog Calls – Subtropical East' by David Stewart. It is best to record frog calls on a tape as it can be very hard to remember them once you start playing the CD and the mind swims with possibilities.

Frog surveys have been hotting up in the Kenilworth-Belli area. We have found the giant barred frog and the cascade treefrog at sites along Belli and Cedar Creeks where they haven't been recorded before, and also at known sites that haven't been surveyed for a few years. Many other more common species have also been recorded.

At the end of the survey period (Autumn 2004) some sites will be selected for longer term monitoring as all frogs face an uncertain future due to environmental changes and attack from the introduced *Chytrid* (pronounced kit-rid) fungus.

If you are interested in joining evening frog surveys in the coming months, contact Eva Ford at MRCCC on 5482 4766. You must be prepared to get a bit wet and have a high level of patience!

COD contacts

Upper Mary, Gympie, Amamoor, & Munna Creek Waterwatch Networks
Ph: 5482 4766
email: mrccc@qldwide.net.au

Maryborough Waterwatch Network
Lee Field, MRCCC Project Officer
Ph: 4121 6546
email: clinkerfield@big.net.au

Friends of Kilcoy Creek
Dale Watson, MRCCC Project Officer
Ph: 5482 4384 or 0438 177 054
email: mrcccdale@qldwide.net.au

Burnett Mary Regional Group for Natural Resource Management
Brad Wedlock, Community Support NRM Gympie
Ph: 5482 4384 email: brad.wedlock@burnettmarynrm.org.au

Mountain to Tap bus tour

Phil Moran
Noosa & District Landcare Group

Friday 22nd August saw State Landcare Delegates, Councillors and interested observers from the State Landcare Conference touring our Shire, viewing various environmental projects. The tour commenced in Gympie, where tour guide Conor Neville, resplendent in his new shirt, met the guests. Conor regaled the crowd with his vast knowledge en route to the first stop, the Kin Kin Arboretum.

Here Paul Steels outlined the history of the Arboretum and Landcare's involvement in the site. I bet Paul did not mention the hours of work he has put into the site, over many years. Numerous people have worked at the Arboretum, with Ron Phillips, Ray Dark, Barry Craig and Paul having done most of the work.

Next stop, the futuristic Rural Futures Centre, where 'tourers' were fed and watered, preparatory to the main event, Landcare's Farm Forestry Program. The Damien Morley-run Farm Forestry Nursery is indeed futuristic … real flash, even roll-through benches for direct seeding. Gary Clarke, Farm Forestry Project Officer, explained the multi-facetted operation and its outstanding on-ground achievements, leaving the assembled crowd flummoxed!

Back in the bus, but not for long. Next stop, the Aquatic Nursery operated by the Lake Macdonald Catchment Care Group. This operation, run by tour guide Conor Neville and occasionally attended by the author, has some interesting stuff going on … growing native underwater plants, and seeing if earthworms can help turn tons of cabomba into something useful. Plenty of questions, and a lot of interest shown in these projects.

Next up, a drive around Lake Macdonald to the Gerry Cook Fish Hatchery. Council's Environmental Services Department, assisted by Noosa Landcare Trainees, managed to turn the humble sausage into a memorable and enjoyable lunch!

Ross (the Terminator) took the weed harvester for a spin, attracting the usual admiring crowd. Cr Lew Brennan and Raul Weychardt (Council's Director of Planning and Environment) fielded questions, framed by the magnificent backdrop of Mount Cooroy over Lake Macdonald. As erudite as these two speakers are, it was the typically laid-back talk by Tom Anderson (Alan Fletcher Research Station) that had the group transfixed. No padding, just the facts, delivered with relevance and humour. Darren Knowles then showed the guests around the Fish Hatchery, with the Mary River cod as star of the show.

As time was short, we had to miss our tour of Cooroy Mountain Spring Water (sorry Kim!), and headed straight to the Cooroy Wetlands. Here, within a stones throw of the happening town of Cooroy, lies one of Noosa Council's best-kept secrets. The Cooroy Wetlands are operated by the knowledgeable Tommy Russell and represent the future in wastewater treatment. Nature (this time through plants) is quietly and effectively dealing with any nutrients and returning much-needed clean water to the Six Mile creek system.

While Conor Neville's font of knowledge continued to bubble, an informed but exhausted group relaxed on their way back to Gympie with, I hope, their thought processes stimulated.

Noosa Council partners with the community

Raul Weychardt
Director - Environment & Planning
Noosa Shire Council

Residents in much of the Lake Macdonald catchment don't rely on the lake for their water supply. However the community is genuinely interested in a healthy catchment for the lake and have contributed positively to improving water quality in the lake.

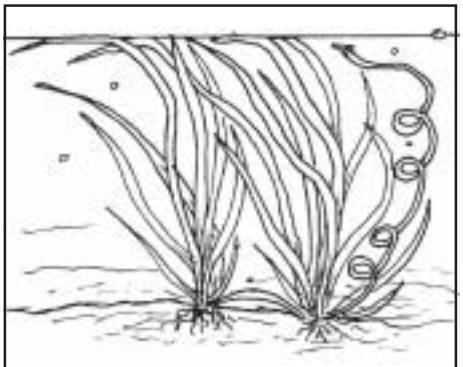
We at Noosa Council are finding that partnerships with the community effectively progress the rehabilitation and management of natural areas.

We are supporting community action in four significant areas toward improving water quality and catchment health:

- supporting the Lake Macdonald Catchment Care Group, which has overseen the implementation of a Cabomba Action Plan (described in more detail in other stories)
- supporting the Gerry Cook Fish Hatchery on Lake Macdonald
- supporting riparian restoration schemes undertaken by landowners in conjunction with Noosa & District Landcare and the Department of Natural Resources & Mines, and
- undertaking appropriate natural resource management practices, for example, removing exotic pine plantations, undertaking weed management and supporting other bushland rehabilitation projects including Fig Tree Lane Park.

The CodLine also acknowledges Noosa Shire Council's financial support!

For more information on Noosa Shire Council's community partnerships, contact Raul Weychardt on 5449 5266.



Vallisneria nana (ribbon grass)

Four-pronged attack on cabomba

Conor Neville, Lake Macdonald Catchment Care Group

The Lake Macdonald Catchment Care Group (LMCCG), with funding from the Federal Government's Envirofund and Weeds of National Significance (WONS) and in partnership with Noosa Shire Council, Alan Fletcher Research Station and Mary River Catchment Care Committee, are pioneering ways to rid Noosa Shire of cabomba.

Worms at work, converting cabomba into something that may be of use [Phil Moran]

1. Remove & replace

This strategy is to weaken the cabomba mass by removing the canopy with the Aquatic Weed Harvester and then revegetating with the vigorously growing native plants *Hydrilla verticillata* (hydrilla) and *Vallisneria nana* (ribbon grass) before the cabomba grows back. However while cabomba has no predator (apart from the Harvester) the native plants are being devoured by lake-dwelling critters, perhaps turtles, fish or diving birds.

2. Worm farm

What do you do with 90 tonnes (per hectare) of cut *Cabomba?* Cabomba contains up to 14 per cent protein, but because cabomba accumulates heavy metals (manganese, magnesium and lead in particular) the harvested material cannot be used as a mulch. A worm farm is being trialed at Noosa Landcare's Riparian Nursery at Pomona to see if the harvested cabomba mass can be turned into a usable product, i.e. a soil conditioner, pellets or liquid. Firstly we will see if the worms survive their cabomba-eating experience, then we will check their bioaccumulation rates.

3. Mapping

Mapping the extent of cabomba infestation in the Noosa and Maroochy Shires will allow the group to define its focus when biocontrol comes along.

4. Biocontrol

Biocontrol is the last resort. The lack of a predator in Australia is allowing the cabomba population to increase unchecked. Cabomba biological control agents and their impact on Australian ecosystems is the next project to be investigated by the Lake Macdonald Catchment Care Group with the support of Mary River Catchment Care Committee.

For more information, contact Conor Neville on 0416 200 254 or Phillip Moran on 0412 507 363 or at futurescentre@spiderweb.com.au

Community group hunts worldwide for cabomba enemies

Tom Anderson
Alan Fletcher Research Station

The Lake Macdonald Catchment Care group has initiated biological exploration for the enemies of cabomba in its countries of origin – Argentina, Paraguay, Uruguay and Brazil.

This is the first time cabomba's fauna has been investigated. The agents found will probably not even have names. This is exciting stuff for anyone who believes the natural world holds the key to the world's environmental problems. Also it's the first time an environmental group has provided the money and leadership to make a scientific venture like this possible.

Long-term natural control is the aim of the Lake Mac group. Cabomba has no natural enemies here in Australia, a fact that allows it to thrive and choke out our water flora. Biological control involves finding the plant's natural enemies and then establishing which of these are safe agents in Australia. This method has a good track record on plants such as salvinia, water hyacinth and alligator weed.

The world's leaders in biological control of aquatic plants are based at the CSIRO facilities in Brisbane. So the Lake Mac group has formed a partnership project with Sunshine Coast Councils, the water industry, CSIRO, Environment Australia and QNR&M to carry out the first phase of the biological control program, i.e. overseas exploration to identify what control agents Mother Nature has in her extensive cupboard.

Funding for the project is about $270,000 at this time, which will cover about two years' overseas work. How long it will take, however, is uncertain, as many factors can affect the outcome – seasons, money, politics, wars …

Conservation through education – COOLOOLA NATURE at Wolvi Primary

Kelvin and Amelia Nielsen
COOLOOLA NATURE
Education, Gympie

COOLOOLA NATURE Education is a not-for-profit entity, providing environmental education in Primary Schools and at public venues and offering day excursions, school camps, in-school activities and environmental information kits.

Wolvi State Primary is a small rural school of sixty-five students. A nearby watercourse is fringed by riparian vegetation, and areas of remnant bushland adjoin Goomboorian State Forest, soon to be a National Park.

Wolvi School has accepted three of our projects: a frog pond habitat, a freshwater fish and waterways project, and a butterfly garden and butterfly house. A successful grant application to the Gaming Community Benefit Fund is providing funding. These three projects in combination offer excellent opportunities for students to develop an overall understanding of the environment.

The butterfly house is 8 m across and 3 m high. The enclosure is circular and rises smoothly to its domed apex with no corners so that butterflies cannot become trapped, 'panic', and damage themselves. The house has double doors to limit the possibility of butterflies escaping, and more importantly, to limit the possibility of parasitic flies and wasps entering. It is covered half by 50 per cent and half by 30 per cent shadecloth, catering for the habitat requirements of a broad range of butterflies. Timed sprinklers, a gravel floor, ornamental pond and fountain will help to retain humidity.

In-house plantings will mimic a range of habitats, from rainforest to open forest and plains. Caterpillar food plants will be potted so they can be rotated and rested outside to prevent individual plants from becoming overeaten.

The Butterfly House under construction [Photo courtesy of Wolvi State School]

The butterflies in the butterfly house will be local species 'harvested' from the school grounds by catching adult females or collecting caterpillars or eggs on leaves, which will be relocated and attached to an appropriate food plant in the house with staples or paper clips.

Students will be taught to monitor and record the progress of the butterflies' life cycles.

Students will also maintain a healthy environment within the enclosure, carrying out population control by removing excess larvae for release outside in the school garden, destroying diseased or parasitised specimens to prevent further infection, and rotating food plants as needed.

The house and school grounds will be landscaped with locally occurring species, where possible from the local gene pool, including those termed 'weeds' and exotics if appropriate as food plants, taking care not to include plants with weed potential. Similarly, those that could cause problems within the school grounds, e.g. with rampant growth, poisonous sap or spines, will be avoided. 'Weed' species will be discouraged from flowering and seeding.

Future opportunities for the students and school include

- developing student social skills, as students lead pre-arranged public tours through the projects
- interacting with students from other schools by offering Open Days, and with members of the local Landcare group in revegetating the riparian corridor
- financial opportunities for the school & P&C Association through donations from visitors on public tours, and from frog/fish/butterfly-themed market days at which students sell craft and butterfly food plants.

For more information, contact Kelvin & Amelia Nielsen, COOLOOLA NATURE Education, on 5482 6721 or email cooloolanature@spiderweb.com.au

Students' comments

I can't wait until everything is ready. Having a butterfly house is great and having a frog pond at Wolvi State School is excellent. Instead of watching caterpillars, chrysalis and butterflies and frogs on TV, we will be like mini-scientists.

Jack Brookes Year 3

I am really excited to have a frog pond and butterfly house. My favourite butterfly is a monarch butterfly, it has orange wings and white spots with a little bit of black. I can't wait to see the different colours in there. We will be young scientists. I can't wait to see the shapes and sizes of the frogs. They will be so cute. I can't wait to see all the species of frogs that we will get from our environment.

Grace Sleeman Year 3

I like our school because we are the only school that's getting a butterfly house. I can't wait until it's fully built, so we can see the colourful butterflies. What I like about the frog pond is we can attract lots of frogs to stop toads harming them. I'm very excited.

Michael McCord Year 4

Cod food hiding!

Karen Shaw
Brush Turkey Enterprises

A food source for the Mary River cod is hiding. Colour all the shapes with a dot and see what you've got!

'Unfathom the words' results

Many thanks to Max Davis and Nola Fitch of Widgee, who supplied 118 words of three letters or more using the letters in 'Mary River cod', and Gillian Crossley of Wonga, whose 'quick list' of 50 added 17 more words.

Now use the words!

Below are listed words of one letter or more that come from the letters in 'Mary River cod'. Here's the challenge. Can you compose a poem or yarn using as many of these words as possible, and/or as few other words as possible, with a catchment care theme?

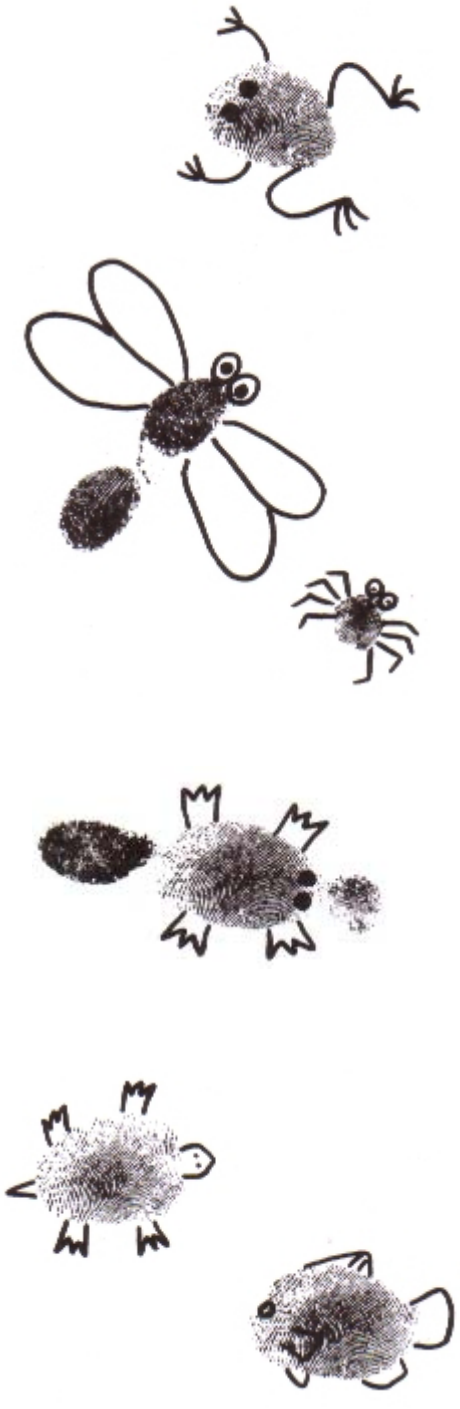
Send your composition to the CodLine (contact details on the back page).

a	are	code	dame	dray	mad	mover	ride
ace	arm	co-ed	dare	dream	made	myriad	rider
acid	army	come	dear	dreary	maid	ode	rim
acme	array	cord	decay	drive	mar	or	rime
acre	arrive	core	décor	driver	mare	order	river
acrid	aver	corm	decoy	drove	marred	over	road
admire	avid	cove	diary	drover	married	race	rod
adore	avoid	cover	dice	dry	marry	raid	varied
advice	came	cram	dime	emir	Marc	ram	vary
aero	cameo	crave	dire	err	Mary	rare	very
aim	car	craved	dive	I	mead	rave	via
aimed	care	cray	diver	i.e.	medic	raver	vicar
air	cared	cream	dome	ice	mercy	ray	vice
aired	carry	cried	doric	id	merry	read	vide
airy	carve	crime	dormer	idea	mire	rear	video
am	carver	cry	dory	ire	mode	red	vie
amid	cave	dairy	dove	ivy	more	rice	vim
arc	cod	dam	dram	mace	move	rid	voice
							void

Thumb prints

Karen Shaw
Brush Turkey Enterprises

Use your thumb and little finger to make some freshwater creatures. These look good on bookmarks or cards for your friends.



The COD Line

is hosted by **Barung & District Landcare Group.**

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Barung LANDCARE

WORKING FOR OUR FUTURE

MARY RIVER CATCHMENT COORDINATING COMMITTEE

NOOSA

MARYBOROUGH CITY COUNCIL

Maroochy Shire Council

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