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The CODLine

Incorporating NEWS of the Mary River Catchment Coordinating Committee

Seeing the forest for the weeds

Jason Flynn, Landholder,
Chinaman Creek, Cambroon

We live on a ten acre block bisected by Chinaman Creek (a tributary of the upper Mary River) near Cambroon. When my wife Carey and I bought the block in 2003 it was predominantly cleared with the exception of the riparian zone. Along the creek the area was completely dominated by Madeira vine (*Anredera cordifolia*) covering most of the *Waterhousias*, black tea-tree and other rainforest trees. I immediately took on the task of researching and developing an on-going strategy for managing this very invasive vine from South America.

From the beginning we aspired to having a weed-free creek zone. We also wanted to encourage natural regeneration of the endemic species in the riparian zone and to revegetate the edges and open areas around the whole property.

We applied for Land for Wildlife status and achieved registration in 2007. This put us in contact with weed management contractors and provided us with information on how best to control invasive weed species. It also gave me the opportunity to get involved in the bush regeneration and weed management industry in this area.

Consenting landowners along Chinaman Creek have been fortunate in having Council- and MRCCC-funded contractors controlling Madeira vine on their properties for a number of years now. One upstream landowner had fortunately identified the species on his property and contacted council project officers well before Madeira Vine became a well-known weed.

Carey and I were reluctant to use chemicals at first and initially tried the physical removal method. Because of the nature of this vine and the way it regenerates (vegetatively and by producing masses of potato-like tubers), this approach proved to be counter-productive.

Effective management

I've found the best method for managing Madeira vine is to minimise its disturbance and spread. One small tuber can produce up to eight new vines, so it's important to keep as many tubers as possible up in the canopy until they are no longer viable, and not on the ground. Tubers on the ground can remain viable for many years, even if buried deep, and can be redistributed by seasonal flooding and associated soil movement.

To kill the vegetative material and tubers in the trees, the basal bark technique of painting the large vine stems with a mixture of diesel and Starane herbicide is most effective. This distributes the herbicide throughout the whole vine – and tubers. Follow-up work is crucial.

Cutting the treated vines away from the ground (at shoulder height) will stop new growth re-climbing and provide you with visibility and access into and under your remnant trees.

Once you have dealt with the vines in the trees, it's time to start on the seed supply and vegetative growth on the ground. Here applying a foliar spray from a knapsack is recommended. I use Starane 200 because this selective herbicide is somewhat 'friendlier' to the native species compared to non-selective herbicides such as Glyphosate or Round-up.

Jason Flynn tackling Madeira vine from ground to canopy. [Photo: Eva Ford]

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Seeing the forest ...

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Realistically, this vine will never be completely eliminated because of the long-term viability of its tubers and the action of floods redistributing buried and fresh tubers and vegetative material, so on-going vigilance is the only way to keep Madeira vine under control.

Light on the other side

On our property, we are now at the stage where all the vines and tubers in the trees have been treated. All the treated vines have been cut away from the base of the trees and any new growth is treated by foliar spraying during the growing season. For the most part we now only need to hand weed around the remnant trees and emerging seedlings.

The remnant trees in our creek area have had a weight lifted from their shoulders (literally!) and are all thriving with the newly available light and room to grow.

It is rewarding to see the changes in our creek and its growing potential as a healthy ecosystem. If we encourage the natural ecology by reducing the competition from introduced species and promoting natural regeneration, the native insects, birds and animals will follow.

It has taken some hard work but, I have to stress, nothing too hard.

It takes a community

The most important thing is enthusiasm and perseverance. I have had landowners tell me 'you're wasting your time'. Not the right attitude in my mind. One day a month committed to weed control and bush regeneration will give you results.

Start now and look up the various organisations offering information and assistance to landholders, such as the Mary River Catchment Coordinating Committee and your local Regional Council. Make some enquiries!

The future health of Chinaman Creek depends on the current landowners. Collectively every little bit we do each month on our own places makes for a healthy tributary that can only benefit the Mary River catchment system.

Jason Flynn is a private contractor working on bush regeneration, weed management and revegetation projects and installs wildlife nest boxes. Jason can be contacted on 0416 170 238 or via totemfauna.flora@hotmail.com

MRCCC into 2010

Deb Seal
MRCCC Resource Centre

Following the Traveston Dam proposal era, organisations in the Mary Catchment are collaborating to develop a Mary Valley Renewal Proposal, which is focused on making sure that the community voice is heard and acted on by the Queensland Government.

The MRCCC believes there is now a unique opportunity for setting a world-class example of sustainable, community-driven river and landscape management.

Over the last four years, public recognition of the Mary River and its exceptional natural values has grown immensely, as has the level of scientific knowledge and international interest. To this end, the MRCCC is looking forward to continuing to work with Waterwatch volunteers and landholders involved in sustainable production, water quality improvement and threatened species habitat rehabilitation and protection projects.

The MRCCC is also establishing a working group to look at future water planning proposals including the Queensland Government's draft SEQ Water Strategy, the Wide Bay Burnett Regional Water Supply Strategy and the Mary Resource Operations Plan. For more information or to become involved, please contact the MRCCC.

Community representation

Well-known Landcare personality Phillip Moran has been elected Chair of the Mary River Catchment Coordinating Committee for the coming year, and Maleny dairy farmer Margaret Thompson has been re-elected as Secretary. Brooweena dairy farmer James Hansen was elected Treasurer and Kilkivan farmer Brian Thomas is the group's Deputy Chair.

Sector representation has also been expanded, and the MRCCC welcomes Ian Mackay as the group's new Waterwatch Delegate and Di Collier who represents small landholders who have undertaken on-ground works on their properties. We are also hoping to bring a representative of Seqwater onto the Committee in the near future.

A full list of Delegates is available on the MRCCC's website under the tab 'Contacts'. The MRCCC's Annual Report is also available at the website.

Quoll info at upper Mary meeting

The MRCCC's first General Meeting for 2010 is planned for Tuesday 9th February. The guest speaker will be Scott Burnett of the Quoll Seekers Network. Scott will present outcomes from the 'Quolls in the southern Mary River headwaters' surveys and discuss future research in the Mary and Burnett catchments. This meeting is to be held at the new Hollow Log Homes conference room at Cambroon. Numbers are limited so if you would like to attend please book by contacting the MRCCC.

Phone the MRCCC on 5482 4766 or visit the website at www.mrccc.org.au

The new conference room at Hollow Log Homes, Chinaman Creek Road, Cambroon, is the venue for the first meeting of the Mary River Catchment Coordinating Committee in 2010.

Growing trees and catching fish

Chris Mangold, Landholder, The Dawn

Chris Mangold, the new Fishing Sector proxy on the MRCCC, is Vice-President of the Borumba Fish Stocking Association (BFSA) and an ex-sawmiller from Kogan, west of Dalby.

Margaret and I started our farming activities at our Calico Creek property, near Gympie, by planting persimmon trees and buying some cattle around 1998.

At first we were unsure how to set about rehabilitating our property, but we knew we wanted to protect the habitat of the platypus and Mary River cod in the creek and preserve the remnant vegetation and timber on the block. So we began by controlling weeds such as giant rat's tail grass, cat's claw vine, balloon vine, lantana and groundsel, and fencing off sections of Calico Creek and some of the remnant vegetation.

In June 2008, I attended a Waterwatch and Aquatic Plant ID Workshop and Field Day held by the MRCCC at the Long Flat Hall and on another Calico Creek landholder's property. After this, we were invited to apply for funding from the Better Catchments program, which enabled us to continue the fencing and to start revegetating. After a visit from Marc Russell in 2008 we registered for Land for Wildlife. Marc discovered giant ironwoods and four *Flindersia* species in one remnant area on our property.

Margaret and I are regular visitors to Borumba dam. Each year, the Fish Stocking group releases a total of 100 000 bass, golden and silver perch and Mary River cod fingerlings into the dam. The BFSA buys these fingerlings with funds raised from the Queensland Government through the Stock Impoundment Permit System and from the Gympie Regional Council. The group also puts $10 from fishing competition entry fees towards dam restocking. Each month the group has a get-together which can attract up to 30 or 40 participants. All competitions are catch and release; the fish must be able to swim away.

Borumba Dam covers an area of 500 hectares and is up to 40 meters deep in places. It includes the headwaters of Yabba and Kingham Creeks and some magnificent areas of rainforest in amongst the grazing land.

Chris Mangold (at the wheel) recently guided a group of catchment care and departmental staff on an expertise-sharing survey of the native vegetation and pasture communities upstream of Borumba Dam.

The group included Eva Ford (Catchment Officer, Threatened Species, MRCCC), Ernie Rider (Senior Conservation Officer, DERM) and Graeme Elphinstone (Grazing Lands Extension Officer, DPIF). [Photo: Eve Witney]

Enquiries about the Borumba Fish Stocking Association can be directed to Harry Houston on 5499 6262 or to Chris Mangold on 5483 2823.

Wet season spelling for healthy pastures

Brad Wedlock, MRCCC and
Graeme Elphinstone, DPIF

Many local graziers from the Mary Catchment have discovered one of the secrets to healthy pastures: wet season spelling. Wet season spelling is a very effective way of allowing pasture paddocks to recover after winter / dry season grazing.

Wet season spelling is the complete destocking of cattle from a paddock from the first significant spring storm through to the end of summer. By spelling the pasture while it is actively growing, a more substantial body of grass can become established.

Wet season spelling also allows grasses and legumes to set seed for seedling recruitment and rebuild extensive root systems which make the plants more resilient to drought.

Resting paddocks during the wet season also builds up soil organic matter levels, improving soil health and ecosystem function.

The presence of good groundcover levels, composed of deep-rooted 3P grasses (see *CodLine* Issue 19 for more information on 3P grasses) and good soil organic matter levels significantly improve the ability of the soil to soak in rainfall.

Winter or dry season rest can be used to maintain groundcover levels but does not provide the deeper benefits.

Sufficient paddocks need to be established to allow for regular wet season resting. All your paddocks need occasional wet season spelling, but those in most need should be targeted first. More frequent wet season spelling is essential for recovering the soil health and 3P grasses on land in poor condition.

To make the most of the precious rain that falls, your paddocks need to be managed in ways that improve condition. This not only keeps sediment and nutrients in your paddocks; it also ensures good pasture and animal production.

What's all the fuss about weeds?

Phil Moran
Natural Resources Manager,
Noosa Landcare Group

Weeds… why are some people really passionate about picking on these sometimes beautiful plants?

Basically, a 'weed' is a plant growing where it is not wanted. A plant becomes a *serious* weed when it affects the balance in nature. Weeds can have negative effects on environmental, cultural, social or economic values.

Environmental values can be altered by the invasion and replacement of the native plant community, which can alter habitat and change nutrient cycles, water cycles and quality, and fire regimes.

Cultural, social or recreational values can be severely affected with access, camping, bushwalking, boating and fishing amenities are downgraded by terrestrial and/or aquatic weeds.

The economic impacts of environmental weeds are hard to quantify, but are generally recognised as costing Australian agriculture around 4 billion dollars annually. Some of these impacts include weed treatment costs, stock illness, reduced water availability, contamination of agricultural crops, and increases in feral animal populations which find refuge in the weeds.

Controlled by law

In Queensland, pest plants can be declared under the *Land Protection Act (2002)*. This legislation lists three categories of pest plants.

Class 1 pest plants are ones that have the potential to become serious pests. It is a serious offence to introduce, keep or sell Class 1 pest plants (fines of up to $60 000 apply). In our region examples of Class 1 pest plants include alligator weed (*Alternanthera philoxeroides*) and glush weed (*Hygrophila costata*).

Class 2 pest plants are ones that have already become established but their impact is so serious that we need to contain and control them. Landowners have a legal responsibility to keep their land free of Class 2 pest plants. Examples include groundsel bush (*Baccharis halimifolia*), Olive hymenachne (*Hymenachne amplexicaulis* cv. Olive) and salvinia (*Salvinia molesta*). Council officers can issue a notice to landowners to control these plants on their land. Fines of up to $30 000 apply for transporting or selling these species.

Class 3 pest plants are often called Environmental Weeds. They are commonly established and whilst landowners do not have to control them (unless they are adjacent to an environmentally sensitive area such as a National Park), it is an offence to sell or introduce them. Examples of Class 3 pest plants include Dutchman's pipe (*Aristolochia elegans*), camphor laurel (*Cinnamomum camphora*) and Singapore daisy (*Sphagneticola trilobata*). Fines of up to $15 000 apply for selling or introducing plants of these species to new areas.

Take action on weeds

The species I've mentioned above are just the declared species; many more species have serious impacts on our environment. They may be okay in the garden but they often don't stay behind the fence.

Indeed, most of our weed species are garden plants that have 'jumped the fence'. Birds, wind and water often spread the seed beyond the garden boundary where, once established, they take over their environment.

Some of the exotic plant species have disastrous effects on our native fauna. The exotic vine Dutchman's pipe , which looks similar to the native Richmond birdwing butterfly vine (*Pararistolochia praevenosa*), also attracts these now-endangered butterflies, but the exotic vine is toxic to their larvae...

So, what do we do about weeds?

Learn about the species that you should not be planting. Jump on a weeds website and see if you recognise any of the plants in your garden. Plant local natives where possible.

Join a local a Catchment, Landcare or other local environmental group and learn a bit about weeds. Know the plants before you go around killing them…you may be killing the host plant for a beautiful butterfly!

Noosa Landcare

Noosa & District Landcare Group

Contact details

RESOURCE CENTRE

Where: **Station St, Pomona**
When: **Mon–Fri 9am–5pm**
Phone: **07 5485 2468**
Fax: **07 5485 0413**
Email: **admin@noosalandcare.org**
Web: **www.noosalandcare.org**
Post: **PO Box 278, Pomona Q 4568**

NURSERY

Where: **Pomona, via Resource Centre**
When: **Wed–Fri, 9.30–2.30 and Sat 9–11am**

CONTRACTING SERVICES

Phone: **07 5485 2468**

Services & Activities

- integrating diverse areas of expertise to manage and implement catchment-based projects; advising on property planning and integrated property uses
- delivering a wide range of environmental education, training and awareness raising programs
- working directly with landholders to enhance investment through partnership arrangements, create wildlife habitat and vegetation corridors, and undertake sustainable farm management options by increasing biodiversity, addressing erosion and helping to reduce carbon emissions
- offering commercial environmental services operating on a fee for service basis
- propagating and selling native plants for local revegetation activities.

Our River Community

Glenda Pickersgill
President, Save the Mary River Coordinating Group

The Traveston Crossing Dam proposal brought us all together with unnecessary stress and uncertainty but out of it has risen a strong sense of the Mary River community. Through it all we've built wonderful friendships and networks and gained the motivation to protect what is uniquely special here in the Mary River catchment.

Moving forward

Since Environment Minister Peter Garrett's initial decision rejecting the dam proposal, it has been a busy time for working together with other groups and setting up structures to foster a positive way forward for the Mary Valley and our community.

The Save the Mary River Coordinating Group and the Greater Mary Association are involved in the Mary Valley Renewal team and are focused on making sure the Queensland Government hears and responds to the community's voice. After what the community has been through over the last three and a half years, we deserve to have a say in the future vision for the Mary Valley.

Managing water better

There are many lessons to be learnt from this Traveston debacle, in particular the need for proper consultation and negotiation with communities over water use and supply.

The draft 50-year SEQ Water Strategy is now open for comment. Here we are still seeing a high target of 230 L /p/day and the statement, 'options to make use of strategic reserve in the Mary Basin will be investigated, including an upgrade of Borumba Dam and water harvesting. These options will need to address the same issues that were raised in relation to the proposed Traveston Crossing Dam.'

It would appear that there is still a threat of more inter-basin transfer out of the Mary catchment. The Northern Pipeline Interconnector (NPI) stage 1 takes from Lake Baroon and the still-to-be-federally-approved NPI stage 2 would take from Lake McDonald and the Mary River at Coles Crossing.

Closing date for submissions to the 50-year SEQ Water Strategy is 12th Feb 2010. I encourage everyone to provide your feedback by: calling the QWC feedback hotline on **1300 789 906**; using the web feedback form at **www.qwc.qld.gov.au**; emailing submissions to **qwcenquiries@qwc.qld.gov.au**

As well, we need to urge all three regional councils in the Mary catchment to be educating, assisting and planning toward being 'water wise'.

In the face of climate change with predicted higher temperatures, more evaporation and lower flows in the Mary River combined with increasing population in our catchment, we need to be looking at every way we can be more efficient in our water use in the home and in agriculture: retrofitting tanks and water-efficient appliances and ensuring that housing or rural developments capture water where it falls rather than relying on taking more water from the river.

Changing the laws

The Save the Mary River Coordinating Group's objective has always been to prevent the damming of the Mary River at Traveston Crossing, now and forever. We've achieved the 'now', our focus is now on the 'forever'. This is the third time the Traveston Crossing Dam has been announced and we want to be sure it never gets announced again.

The legislation that was used to justified the proposed dam – the Mary Basin Water Resource Plan – must be revised. This plan is a farce, created to make the dam look feasible with a strategic reserve that has no scientific basis or community endorsement – it doesn't protect the Mary River or the Mary Estuary. We must get the proposed dam removed from state legislation, including from the *Water Act* where it is listed as a drought measure.

Community members celebrating in the waters of the Mary. [Photo by Arkin Mackay, www.stoppress.com.au]

People on the land

The social impact of this debacle has yet to be fully considered, and no doubt this will come into greater focus as we approach May 2010 when previous landholders will be indicating whether they will be buying their land back from QWI.

There is a lot of uncertainty in the community at the moment and people want answers. People are in so many different situations regarding buying back, not being able to buy back, and leasing, and people's businesses and livelihoods have been affected in so many ways.

As far as we can tell, the Queensland Government is still working out what they will do. At this stage, the Government has made no statements about how they will be helping to rebuild the community or protect the river.

Voice of the people

There's a lot of healing still to happen but this community has shown itself to be both resilient and committed, and more than eager to be involved in the way ahead.

Our members say our community needs to have a say in the future vision for the Mary Valley. There are lots of good ideas out there that people are wanting to contribute toward moving forward.

Our community now has a great opportunity to be involved in the rebuilding process, caring for the river environment and our river community.

Keep up with the news at ***www.savethemaryriver.com***
Glenda Pickersgill can be contacted on 0411 443 589.

World-famous turtles

Marilyn Connell
Tiaro Landcare Group

For just over three weeks in August, I was in America being immersed in international chelonian culture. Chelonians include all turtles, tortoises and terrapins. Turtles live their lives in water, tortoises on land and terrapins in brackish water.

I was invited to give two presentations on Tiaro Landcare's Mary River Turtle project to the 7th Annual Turtle & Tortoise Conservation & Biology symposium. The symposium is the largest non-marine turtle and tortoise symposium in the world. Where else on earth would one find the academic world merging with zoo professionals, NGOs with field researchers, conservationists with biologists, private keepers and breeders, all raising their glasses and talking turtle.

The presence of key global turtle conservation groups created a summit-like opportunity for networking, planning, and strengthening the commitment to a global and unified approach to chelonian conservation.

I wondered why the international community were so interested in a small rural community working quietly away on conserving an endangered turtle.

The Mary is significant within the Australian rivers for turtle species richness. It accommodates six turtle species, which is only surpassed by the Daly River with eight. One of these six is a turtle with a huge, thick ossified tail which attains more than half the length of the entire animal and has another uniquely Australia trait of being a 'bum breather'. Two of the three 'bum breathing' turtle species live in the Mary River. Most chelonians have been known for over a century. We have a 40 cm diameter turtle that was discovered just 15 short years ago, and which was so different from any other known turtle that a new genus had to be created for it. So I began to discover why there is such international interest in the Mary River turtles.

It was an opportunity for me to meet and create friendships with the world's leading chelonian conservation biologists and to meet the Chairs or Presidents of a number of international organisations.

We are now cemented in as part of the international turtle community. I was overwhelmed by the hospitality of the Americans and welcomed into their homes and lives. Everyone I spoke to was deeply concerned about the effect of the proposed Traveston Dam. Many of the international organisations wrote letters to our state and federal politicians.

It was an honour to be the international face of Tiaro Landcare.

For more information on Tiaro Landcare's Mary River turtle project visit www.maryriverturtle.com

Or purchase a copy of their book, Mary River turtle, yesterday, today, tomorrow, *available from MRCCC, Cooloola Art Gallery, Tiaro Tourist Information Centre or direct from Tiaro Landcare.*

Tiaro Landcare

Tiaro & District Landcare Group

Contact details

Phone: **07 4129 6206**
Fax: **07 4129 6638**
Email: **tiarolandcare1@bigpond.com**
Website: **www.mrccc.org.au/tiaro.html**
Post: **PO Box 6, Tiaro Q 4650**

Activities & Services

- Mary River turtle conservation activities including *in situ* conservation of wild turtle nests; PhD scholarship for new research; publication *Mary River turtle, yesterday, today, tomorrow*; site **www.maryriverturtle.com**
- conducting education and awareness activities with schools, community groups, Council, NGOs etc; display at the Tiaro Tourist Information Centre
- selling chocolate turtles for to raise funds for turtle conservation
- conducting the annual **Tiaro Catch & Release Fishing Competition**, a family-focused fun-filled weekend
- running the biennial **Tiaro Farming & Lifestyle Field Day** which includes demonstrations, workshops, trade displays and community stalls.

LANDCARE
Tiaro & District

Another season in the hatchery

Vince Collis, Noosa & District Community Hatchery

The new building is up and operational. The individual filter systems for the broodstock tanks are working which means instead of using 82 400 litres of water a week we now use 8240 litres.

Not a good breeding season this year. The pond temperatures only went down to 11.5C on the morning of our only frost; most of the time the temperatures were around the 13C to 16C mark.

The fish enjoyed their stay outside in the ponds as they put on weight, but we were looking for more than that and they didn't come through with the goods. The broodstock are back in the hatchery now as the pond temperatures are up around 30C plus.

Top predators abound at this Mary River cod release site at Tiaro. [Photo: Vince Collis]

Wetland for the birds (& runoff)

Rosemary and David Burnett
Landholders, Sexton

A few years ago we received some funding through the Federal Government's Envirofund programme which enabled us to fence off about one kilometre of the Mary River and put in watering troughs for the cattle, as we mentioned in the last issue of the *CodLine*.

We became enthused to do more after a visit from Mary River Catchment Coordinating Committee (MRCCC) project officers when they saw this low-lying area near the river flats.

We now have a wetland project taking in around two acres of land. This year we have sprayed out the water hyacinth which came in with the last big river flow and fenced off the area from cattle.

As well we have planted extra trees, sedges and lomandras. The eucalypts are doing well despite the dry; we have mulched well and watered occasionally.

One of the exciting things is watching the regeneration of the sedges; these were already there but always chewed down by the cattle. The sedges have really grown without extra rain or watering.

Earlier in the year we were enjoying the bird life on the water, lovely little pairs of stints … At the time of writing the dry season is still upon us and the area has almost completely dried up, so we are looking forward to the start of the wet.

This wetland project area will intercept runoff into the Mary River, reducing sediment and nutrient loads in line with our Land and Water Management Plan. The project work has been partly funded though the Queensland Wetlands Programme. We have provided almost all the labour.

As with any new project, we've learned a few lessons along the way. The first thing that comes to mind is that we sprayed out all the water hyacinth before planting any trees but we didn't tackle the scotch thistles which have come up in abundance over the last three months, along with a few other weeds. This will be our greatest challenge.

Adam Logan (FarmFlow Project Officer, foreground) and David Burnett (property owner) planting trees to shade the the wetland's edges. The area has been fenced to manage cattle access and groundcover around the wetland has already improved. [Photo: Rosemary Burnett]

Our suggestion is to get on top of all the weeds first and keep the trees well mulched. We also used water crystals on planting so that could be helping us get through these dry times.

Future directions will depend on finances but the main thing will be to maintain and develop what we have started with both projects and to do a smallish job well. Looking ahead, we're thinking the area could be expanded with some creative earthworks…

Managing orchards to reduce erosion

Adam Logan
FarmFLOW Extension Officer
MRCCC/QPIF

Macadamia growers in the Gympie district are working to reduce erosion in their orchards as part of the MRCCC and QPIF FarmFLOW project.

Orchards are susceptible to erosion for several reasons:

- Where the macadamia canopy closes over, low light levels at the orchard floor limit grass growth, resulting in bare ground.
- Trees channel water down the trunks, concentrating water flow.
- Orchards are often on undulating country, planted up and down the slope for safe machinery operation.

Best Management Practices for combating soil erosion in orchards are:

1. managing the canopy to allow light into the orchard floor
2. profiling the soil to direct water out of the tree line
3. planting shade-tolerant sweet smother grass to improve groundcover.

As part of the FarmFLOW project to improve horticultural practices, a workshop on Canopy Management was held recently in Gympie at an orchard that is demonstrating these best management practice principles.

At the workshop, producers were provided with training in effective macadamia canopy management through selective limb removal. Selective limb removal has several benefits:

- allowing more light into the trees
- increasing photosynthesis and crop-bearing potential
- improving the penetration of pesticides into the interior structure of the tree
- creating trees of a more manageable height.

Growers attending are saying the workshops are helping them to improve their orchard management.

FarmFLOW project support through future workshops and incentive funding will help farmers to reduce sediment and nutrient run-off to local waterways, and increase the fertility and water-holding capacity of soils by increasing groundcover and organic matter.

For more information on this project contact Adam Logan on 5482 4596.

Water bug sleuthing

Dale Watson
Project Officer, MRCCC

What exactly are aquatic macroinvertebrates and why are they important?

Aquatic macroinvertebrates are small animals that can be seen with the naked eye (macro), without backbones (invertebrates) living in most freshwater systems (aquatic). Commonly they are called 'water bugs'.

Macroinvertebrates cycle energy though ecosystems by breaking down organic material, harvesting algae, feeding on other invertebrates and being eaten by larger vertebrates like fish and platypus. Without them, the system may start to fail. Although macroinvertebrates don't have a backbone, they can be viewed as the backbone of the aquatic ecosystem.

Due to the abundance, diversity, range of habitat preferences and sensitivity to water quality, their presence or absence provides an excellent indication of past and present water quality.

During 2009, MRCCC field staff undertook many aquatic macroinvertebrate studies from which we learnt a great deal about these incredible creatures.

MRCCC field staff use the 'Australia-Wide Assessment of River Health: Queensland AusRivAS Sampling and Processing Manual, NRWM, 2001' for sampling and processing methods and selecting habitat types (riffles, runs, pool beds, edge/backwaters and macrophytes). Firstly, areas with good macroinvertebrate habitat (stones, logs, vegetation) are sampled. Next, the samples are spread out on trays and at least 100 macroinvertebrates per sampling area, of as many types as possible, are picked out.

We use our new Prism Optical Stereoscope to identify the specimens to the family and genus level, using the dichotomous key *Identification and Ecology of Australian Freshwater Invertebrates* (produced by the Murray-Darling Freshwater Research Centre) and the *Colour Guide to Invertebrates of Australian Inland Waters* (produced by the CRC for Freshwater Ecology).

The MRCCC uses the SIGNAL (Stream Invertebrate Grade Number – Average Level) assessment and scoring method. Each family of macroinvertebrates has been assigned a 'grade number' between 1 and 10, reflecting the family's tolerance to a range of environmental conditions, including forms of water pollution and environmental change. A low grade indicates a high tolerance and a high grade indicates a low tolerance. These ratings are also adjusted for abundance. Overall, the SIGNAL score gives an indication of water quality and general stream health.

While sampling the aquatic macroinvertebrates of the Mary River Catchment we learnt some intriguing facts about these incredible creatures, some of which are listed below.

SECRET LIVES OF Aquatic Macroinvertebrates

WATER MEASURERS

(Order: Hemiptera, Family: Hydrometridae): Predators that timidly approach their prey, waving their long antennae (with specialised sense organs at the tip). The prey is speared with a long and slender rostrum and usually carried to land where every juicy bit is sucked out.

CADDIS FLIES

(Order: Trichoptera): Sometimes called 'sticks that walk' or the 'hermit crabs of the creeks'. Many larvae construct portable cases, often incorporating organic and inorganic materials bound together with silk.

WHIRLIGIG BEETLES

(Order: Coleoptera, Family: Gyrinidae): Eyes divided into dorsal and ventral portions (they have four eyes!). And just in case that's not enough, they can locate prey using a specialised organ which is sensitive to surface waves.

YABBIES, SHRIMPS & CRABS

(Order: Decapoda): Maintain balance with a sand grain structure (called a statolith) inside a sensory organ (called a statocyst) at the base of antennae. When the animal is horizontal, the statolith sits squarely on a set of hairs in the base of the statocyst. As the animal moves around so does the statolith, helping the animal to know which way is really up.

DRAGON & DAMSELFLY LARVAE

(Order: Odonta): Have a 'prementum' or mask covering their head and attached to the neck which can be flicked out at amazing speed to catch prey.

MAYFLY LARVAE

(Order: Ephemeroptera): Have abdominal gills that appear to 'flutter' like feathers, enabling them to obtain oxygen from the water. Adults have no functioning mouthparts with which to feed, their only purpose being reproduction and dispersal.

Images are from "Identification and Ecology of Australian Freshwater Invertebrates (2006) by Hawking, Smith, and Le Busque, published by The Murray-Darling Freshwater Research Centre.

Frogging in the wallum

Eva Ford
Catchment Officer (Living with Threatened Species), MRCCC

The wallum country is a wonderful environment to dive into. It is full of variety, minute treasures, and unique lifestyles. The frogs of the wallum are highly specialised – often to their detriment when faced with pressures.

After an initial season of surveying the whereabouts and habits of the frogs of the wallum, I am gearing up now for a second season, hopefully to observe their continued success.

Forty-two initial surveys in the wallum environment have shown that wherever there is a water body, either temporary or permanent, and a reasonable amount of vegetation then at least one, and sometimes three, of the threatened wallum frog species will be present.

The focus of the initial surveys was the area east of Tinana Creek to Tin Can Bay, Cooloola Cove and Rainbow Beach. The species found in this area have been the wallum rocket frog (*Litoria freycineti*), wallum froglet (*Crinia tinnula*) and the wallum sedgefrog (*Litoria olongburensis*). All these species are listed as vulnerable under the state legislation (*Nature Conservation (Wildlife) Regulation* 1994) with *L. olongburensis* also listed as vulnerable under the federal *Environmental Protection and Biodiversity Conservation Act* 1999. The other wallum-dependant species, the Cooloola sedgefrog (*Litoria cooloolensis*), listed as rare under the NC(W)A, was not recorded during these surveys and appears to be confined largely to the Cooloola National Park and on Fraser Island.

When it starts to rain again I will push northwards into the country north of the Tin Can Bay Road and the Wide Bay (Military) Training Area. Having surveyed the WBTA extensively in the past I recognise the important link this large parcel of land provides between Cooloola National Park to the south and the mosaic of state, local and private land to the north. I am hopeful that the distributions and population levels of the wallum species will be more comprehensively mapped and will provide robust information for land managers and planners.

The three wallum frog species of this area are all listed as vulnerable for very good reasons, the main one being the progression of urban development along a very attractive eastern coastline.

The frogs happen to reside in country with features that attract humans too – good climate, sea views, water supply etc, between Coffs Harbour and Bundaberg. However this natural environment is very sensitive to changes in vegetation, hydrology (both underground and on the surface), and nutrient levels (in an environment that has evolved under nutrient-deficient conditions).

Wallum rocketfrog (Litoria freycineti) [Photo: Eva Ford]

And then there are the effects of feral animals which can gain access through disturbed areas to the wallum heath which is normally very hard to negotiate (believe me)!

When these changes occur, conditions for the frogs change. They may lose breeding habitat, become isolated into disjunct populations that are not sustainable, or be replaced by 'sibling' species that are more competitive under the new conditions.

Funding for biodiversity projects during this year has been generously provided by the Sunshine Coast and Gympie Regional Councils, the World Wildlife Fund Threatened Species Network (TSN) and the Burnett Mary Regional Group.

The first season of wallum frog surveys was conducted with seed funding from TSN to look at the wallum area to the east of Gympie from Kin Kin Creek to the Mary River. With the project active till April 2010 a great opportunity has been provided to expand the MRCCC's current biodiversity program and pave the way for future Waterwatch and Rivercare program extensions. The second season of surveys is benefiting from added input from the Caring for our Country Coastcare program.

Frog volunteers are always welcome to come along – expect to stay out late at night and scramble along creek banks and through wetlands. Contact Eva Ford at the Mary River CCC on 5482 4766 or mrccceva@ozwide.net.au

Lower Mary Landcare

Lower Mary River Land & Catchment Care Group

Contact details

Phone: **07 4128 1750**

Email: **dlmbrad@bigpond.net.au**

Post: **PO Box 915 Hervey Bay Qld 4655**

Activities & Services

- workshops, field days and information evenings on topics such as shorebirds, marine turtles, and weed ID
- tree-planting days and field days
- onground weed eradication and monitoring by volunteers at Sandy Cape and Big Woody Island
- ongoing education regarding environmental rehabilitation/monitoring, tree planting with local schools in Maryborough and Hervey Bay
- flora and fauna monitoring and data gathering programs, through affiliated groups and government departments.

Gympie Landcare

Gympie & District Landcare Group

Contact details

Resource Centre

Where: **5 Groves Rd, Gympie**
When: **Mon–Fri, 8am–3pm**
Phone: **07 5483 8866**
Fax: **07 5482 1096**
Email: **admin@gympielandcare.org.au**
Post: **PO Box 695 Gympie Qld 4570**

Nursery & Contracting Services

Phone: **07 5483 8866**

Services & Activities

- assisting landholders and community in acquiring funding for valuable environmental projects
- running field days and workshops to increase the skills and knowledge of the local community
- undertaking a suite of educational programs aimed at primary and secondary students, ranging from the annual **KidZone Environmental Expo** (attracting 1500 lower primary students each year) to classroom visits, tours of revegetation sites, and integrating exciting projects like the Cats Claw Creeper Biological Control program into the curriculum of senior high school students
- holding an annual tree planting for Clean Up Australia Day
- offering quality native plants for sale to the public through our nursery
- operating a contract and consultancy arm, offering environmental consultancy and contract works to developers, landholders, Government departments and regional industries.

Gympie & District LANDCARE

Soil health & weeds

The Mary River Catchment Coordinating Committee is pleased to announce that the second round of the Better Catchments project is ready to roll out in the Mary River Catchment.

This project, which will run from 2009 to 2011, builds on the achievements of the previous Rivercare, SuperGraze and Better Catchments projects delivered to landholders from 2005 to 2009.

This new round is aimed at the broad objective of improving catchment health. The focus will be on improving on-farm sustainability by managing erosion issues, improving soil health, developing strategic weed control plans and encouraging the adoption of best land management practices across the Mary River catchment.

The MRCCC project team will work with local landholders in two priority areas:

- Promoting the use of improved soil management practices by targeting organic carbon, soil acidification, hillslope erosion etc.
- Developing Property Pest Management Plans for Weeds of National Significance (e.g. lantana) and a range of other significant weed plants.

The Better Catchments project is an initiative of the Burnett Mary Regional Group and is funded by the Australian and Queensland Governments through the 'Caring for our Country' Program.

If you would like more information about the Better Catchments project and its planned activities, contact the MRCCC on 5482 4766 or mrccc@ozwide.net.au

Barung LANDCARE

WORKING FOR OUR FUTURE

Barung Landcare

Barung Landcare Association

Contact details

Resource Centre

Where: **Shop 3, Riverside Centre, Maleny**
When: **Mon–Fri, 9am–4pm**
Phone: **07 5494 3151**
Fax: **07 5494 3141**
Email: **info@barunglandcare.org.au**
Web: **www.barunglandcare.org.au**
Post: **PO Box 1074 Maleny Qld 4552**

Barung Nursery

Where: **26 Porters Lane North Maleny**
Farmgate Sales: **Wed–Fri, 9am–3pm**
Phone: **07 5494 3151**

Contracting Services

Phone: **07 5494 3151**

Services & Activities

- managing the Barung Nursery which specialises in local rainforest and wallum plants for revegetation and landscaping and offering free native plant and weed identification
- conducting a commercial Contracting Services arm which undertakes all aspects of revegetation, regeneration and weed control project planning, implementation, and maintenance
- offering event management and coffee cart services for festivals and events
- conducting the **Maleny Wood Expo** each May Day weekend
- assisting landholders with access to funding and management of projects relating to revegetation and sustainable land management
- visiting schools and community groups with educational presentations on local endangered species and sustainable land management
- conducting workshops in sustainable land management and topics such as native plant identification and propagation, weed control, revegetation and bush regeneration.

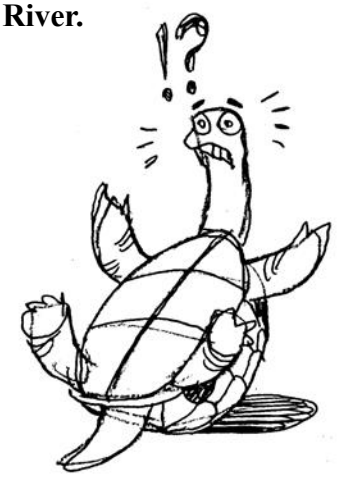
Mind over matter ...

Courtesy of Harmony Douwes and Jeff Douwes

By looking carefully, decode these words and phrases to do with the Mary River.

For example:

is **Mary River**



Now try these ones by yourself:

is _____

_____

_____

_____

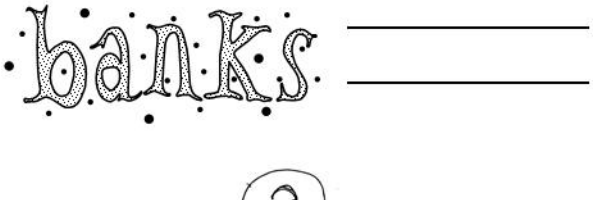
WfAiTsEhR _____

and _____

WATER fish

→ **FLOOD** _____

_____



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_____

ANSWERS: turtle shell, river crossing, fish in water and fish out of water, flood level, sand banks, picnic on the river.

The ***COD****Line*

Good news for the Mary River Cod and the Mary River Turtle

is hosted and suported by

Barung & District Landcare Group

and the

Mary River Catchment Coordinating Committee

WORKING FOR OUR FUTURE

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This issue ...

The CodLine can be viewed online (later editions in glorious colour!) at

www.mrccc.org.au/ newsletters.html

The ***COD****Line*
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