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Issue No. 13

The CODLine

Incorporating NEWS of the Mary River Catchment Coordinating Committee

Mary River Catchment Coordinating Committee - 100 General Meetings

11,000 trees feed koalas by Walli Ck

Doc Eckley
Kenilworth

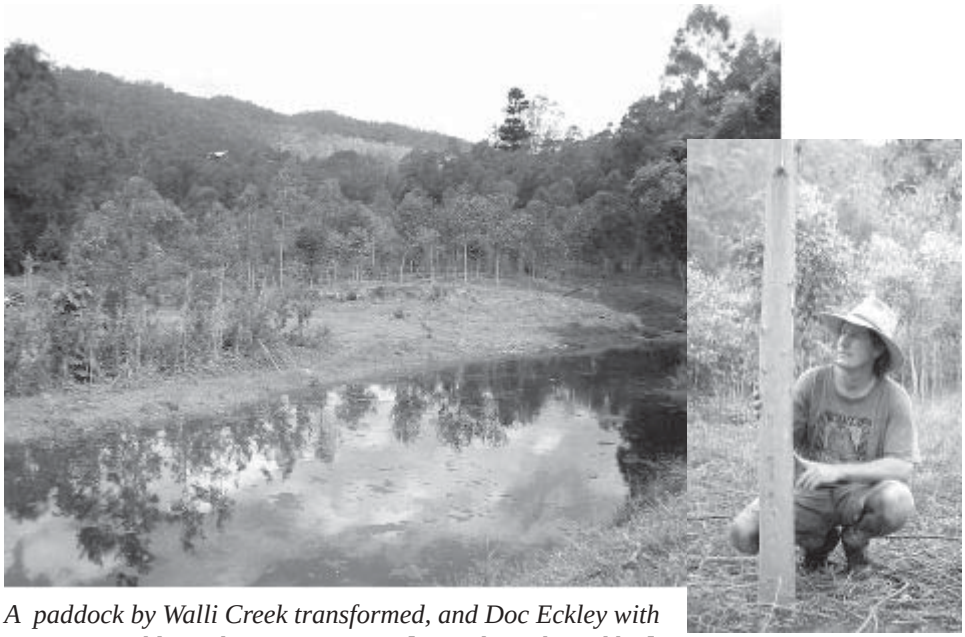
G'day. Five years ago I bought a 100 acre property near Kenilworth. I had always wanted some land to run my horses and some beef cattle. So for the first four years I went about cutting down trees, building yards, fixing fences and breeding cattle.

At the same time I started working as a Wildlife Ranger, firstly for Bunya Park and then later at Australia Zoo. During my time as a ranger I worked mainly with koalas. When I left the zoo it gave me more time to spend on the farm. Also it gave me more of an appreciation for our vanishing wildlife. That's when the tree planting started.

My first idea was to turn seven acres of creek flat back into koala habitat. But I still needed to make money. I decided to plant 5000 eucalyptus trees at about 1.5 metre spacing. Of course this is way too close, but the plan was to harvest a lot of the trees and sell the leaf back to wildlife parks to feed their captive koalas.

Well, the plan worked just fine. Some species reached 3 metres in 7 months; at 3 metres they are ready for harvest. The rest of the trees just keep growing, and eventually they will shade out the trees that I harvest. At the end of the day I will have created a koala habitat that will have paid for itself. Not bad huh?

About this time I joined the MRCCC and that's when everything went downhill. Well, what I mean is that when you don't know what weeds are on your property you don't see them and don't worry. Also you think your creek banks look great and the riparian vegetation is just fine. Warning! The more you learn, the more you care, and the more problems you will see.



A paddock by Walli Creek transformed, and Doc Eckley with a two-year-old eucalypt. [Darryl & Silvi Eckley]

After my basic environmental education from the knowledgeable, helpful and enthusiastic team at the MRCCC, we decided it might be good to plant a lot of other species of trees so that we could create a natural riparian zone for all wildlife.

The Frogitat. That's the name I gave to the new project. Another 5000 trees, only 2000 eucalyptus this time. The rest of the trees were supplied by the MRCCC under Threatened Species Network grants. Our aim to help local frogs by recreating good habitat.

This is the first time I had planted rainforest species, and after working with fast-growing tough eucalypts it was quite a shock. Well, I mean some of these trees died if they saw me walk past just holding the Round-Up. And what a joy to see them grow, not 3 metres in 7 months like the eucalyptus, more like 3 centimetres.

I have learnt that rainforest trees like to live in rainforest. Sounds simple, but

... continued on Page 2

11,000 trees

... continued from Page 1

when you are trying to turn grazing area back to rainforest the trees don't like the harsh conditions and grow very slowly. On my farm I combat this problem using the fast growing eucalypts. Firstly I plant an edge of euc's to protect the other trees from the sun, wind and frost, then as the trees get stronger I remove some euc's to make more room and allow more light in. A eucalyptus tree costs less than a dollar so don't be afraid to plant them close and then remove some later. This system is great for me, the rainforest trees are growing, and the Frogitat is working. I see new species arrive all the time.

Just as importantly, I have made walking tracks and areas to sit and enjoy the habitat. This helps attract people to see what can be done and inspires them to do some tree planting of their own.

All up, my revegetation projects now take up 10 acres. We have planted nearly 11,000 trees, and fenced and weeded 1 kilometre of creek line. These acres were used previously for grazing cattle. Ten acres of flats which frost in winter really only support one horse or two cows. Now the area can support a large number of our native wildlife. It produces an income through the koala leaf and through the B&B that we run on the farm. And let's not forget the warm fuzzy feeling you get from seeing your own forest grow.

If you do have some creek flats of your own on which cattle or horses graze, then compare it with an area of creek that is not grazed by stock and has some remnant vegetation. If you really have an honest look, you will see the impact cattle and horses are having. There are many new opportunities out there. Tourism, bush foods and flavours, native flowers and even farm forestry.

I would like to thank the MRCCC staff for their practical help, experience and enthusiasm. This project would not have happened without them. I highly recommend to anyone with a creek in the catchment to give them a call for information or advice on the health of the riparian zone, and what you can do to help.

Rivercare GST for the Mary River's future

Angus Hutton, President
Gympie & District Landcare Group

Do we want to leave future generations with a healthy river and sustainable primary production or with something approaching a polluted drain? If it is the former then we need to start making the sort of investment which will make a difference, which will turn around the damage from the past and help underpin our future prosperity.

The Mary River and its tributaries are the arteries of the land. In this, the driest inhabited continent, it is vital we look after our waterways. Decades of ill-conceived clearing, along with woody and viny weed infestation and neglect, have left much of the river, especially the middle reaches, in a very sorry state. We need to ramp up efforts to revegetate the creek and river banks, but it's a time-consuming and costly business.

The question we have to ask is who should be paying for it?

Currently the Sunshine Coast urban communities of Noosa, Maroochydore and Caloundra consume 40 per cent of all the water extracted from the Mary River. In the next 20 years this population is predicted to double, and demand for water might too. Where will that leave irrigated agriculture in the Mary catchment? Fairness and equity demand that the urban water users on the Sunshine Coast contribute more financial resources to this important work.

We suggest a 'Catchment Repair Levy', applied to all users of reticulated water that comes from the Mary River, should be introduced to help fund riparian revegetation works along the Mary River and its tributaries. To be fair it should be directly linked to the amount of water used, applied as a percentage of the water usage charges levied by Local Government Authorities. In his acceptance speech at the Sunshine Coast Environment Awards last year, our Operations Manager, Paul Marshall, received a thunderous applause when he introduced this concept of a Catchment Repair Levy. This demonstrates to us that it is a concept whose time has come.

We think the proposed Catchment Repair Levy should be pegged at 10 per cent, like the GST, but it could be phased in over a number of years. The most efficient way to collect the Catchment Repair Levy would be through Local Government but the funds raised should be passed on to a Catchment Repair Trust managed by a body such as the Mary River Catchment Coordinating Committee.

I know there will be people who will say, 'Oh no, not another levy!' However, it should be viewed as an investment in the future of our river and in the quality of our water supply. As water extractions from the Mary River increase, all the environmental problems caused by degraded riverbanks become more serious. If the river is allowed to degrade further and blue-green algae outbreaks become commonplace, Local Government Authorities will need to start investing in activated carbon treatment of reticulated water, which is very expensive.

Some years ago I visited the Columbia River in Washington State USA. It had been turned around from a highly polluted and almost sterile river to one that is again healthy with salmon spawning, thanks to a major focus on riverbank revegetation and the installation of well-designed fish ladders. So I know it is possible if there is enough political will and adequate funding.

It all comes down to how much we value our river.

To discuss these ideas further, contact Angus Hutton on 5482 6388 or Paul Marshall on 0408 925 725.

MRCCC to celebrate 100 General Meetings

MRCCC to receive telegram from the Queen?

On Wednesday 16 February 2005, Delegates, Proxies and Special Guests of the award-winning Mary River Catchment Coordinating Committee will meet at the Gympie Civic Centre for the group's historic 100th General Meeting.

The MRCCC's first General Meeting was held at Garapine on 23 November 1993 and today much remains the same, including the representation of various stakeholders on the Committee, all of whom share a common interest in aspects of the Mary River and its environs.

This catchment-wide organisation involves representatives from the Mary's headwaters in Maleny to Hervey Bay where the river flows into the Great Sandy Straits.

Invitation to attend

In traditional fashion, the MRCCC's 100th General Meeting is scheduled to start at 9.00 am for Coffee and Conversation, with the first item on the Agenda scheduled for 10 am. As this will be a special meeting, the Agenda will include presentations from founding members and staff of the MRCCC, who will enlighten Delegates and Special Guests about some aspects of the history of integrated catchment management in this region. The MRCCC is also producing a commemorative booklet for the occasion providing information on the Committee and its achievements over the last decade.

As is the case with all MRCCC General Meetings, interested members of the community are invited to attend as Observers. If you would like to come along or would like more information on the MRCCC, please contact the Mary Catchment Resource Centre on 07 5482 4766.

... And to contribute

As a community-based organisation, the Committee appreciates the views of people other than regular Committee members. Within time constraints, the Chair may offer visitors and non-voting proxies the opportunity to participate in discussions, or it may be possible to arrange to have an issue placed on the Agenda by contacting any of the Delegates on the Committee.

MRCCC General Meetings are held every six weeks in Gympie and the dates for 2005 are as follows:

Wednesday 16 February
(100th meeting,
Gympie Civic Centre)
Monday 14 March
Wednesday 27 April
Monday 6 June
Wednesday 20 July
Monday 29 August
Wednesday 12 October
Monday 21 November.

Belli Bolstered

Eva Ford
Catchment Officer
Mary River Catchment
Coordinating Committee

On 6 December the sleepy section of Belli Creek at Crossing No. 2 was awakened to the spreading of mulch and the swinging of mattocks as 16 Green Corps members from two local teams came together at the site. The aim of the day was to plant 250 native trees along a bare creek bank to recreate a healthy riparian zone to protect the banks from erosion, maintain good water quality and create habitat for fauna.

The effort of the Green Corp teams and their leaders was mighty that day with all trees in the ground and watered. The event was also a chance for the teams to come together for social interaction as they usually work on different sites around Gympie and the Sunshine Coast. A picnic at Belli Creek Crossing No. 1 and a kick around with a football was a fitting end to a good day's work. The Green Corps members are aged between 17 and 21 and undertake six months of training to help them enter the workforce with some environmental skills and credentials under their belts. With only 3 weeks left of their training, an excuse for a bit of socializing was most welcome after a job well done.

This area at Belli Creek has been the target of Rivercare work for a number of years. The Mary River Catchment Coordinating Committee (MRCCC) has joined forces with Greening Australia staff based at Maroochy Shire Council and the Gympie and Caloundra Green Corp teams now and in the past to regenerate this area. This site has experienced tree clearing for various reasons in the past but is now recognised for its environmental significance and high recovery potential. MRCCC volunteers and staff monitor the site for water quality on a monthly basis and it is also a fauna monitoring site.

The tree plant is part of an MRCCC project that is working towards connecting Belli Creek with a section of Kenilworth State Forest.

Eva Ford can be contacted on 5482 4766 or via mrccc@ozwide.net.au

Mary River Catchment Coordinating Committee - 100 General Meetings

MRCCC hits a ton!

Steve Kelly
Gestational ICM Coordinator
1992-1997

Hearty congratulations to the MRCCC! Not only have they received the 2004 National Rivercare Award for groups but they have reached an historic milestone… 100 General Meetings.

There was a time when we didn't look like hitting four let alone a 100! Who can forget the large public meeting at Kenilworth State School in early 1993 when a conservationist in the audience suggested there were too many farmers being nominated for the selection committee? You could have heard a pin drop.

In the early days many people held assumptions about others' roles and intentions that were undeserved. Many of the farming community have been the backbone of the MRCCC and have been a continual source of practical ideas for implementing environmental solutions. It was a matter of engaging them in culturally appropriate ways.

The MRCCC worked tirelessly at focussing on the *processes* needed to introduce catchment management in a very diverse and often diametrically opposed community. Anything else would have left people taking up staunch positions with little room for moving ahead on the many complex natural resource management issues in the Mary. It is testament to the passion, patience and perseverance of individual members of the MRCCC that they made it through the first few years.

Since the early days the MRCCC has gradually increased its skilled paid staff through various funding programs to bring other ways of managing natural resources into the Mary arena. Community-based water quality monitoring, dairy effluent management, riverbank fencing, whole river rehabilitation planning, Mary Cod recovery, revegetation for biodiversity all brought an essential blend of new thinking and local knowledge. But testing and pushing long-held views, in both the community and in government agencies, was no mean feat and required the MRCCC to become involved deeply in the world of attitudinal change. Strategies involving paradigm busting, adult education, people's world view, strategic alliances, brokering and mentoring come to mind.

At a recent meeting of landholders in the Upper Mary I heard words like fluvial, biodiversity and riparian in the same breath as ecosystem, rehabilitation, and natural capital. The MRCCC's programs and those of the Landcare movement in the Mary must take a bow, for the words people use in everyday life indicate a substantial ripple effect, permanent change and strong foundations for future MRCCC work.

Many MRCCC general meetings occurred against a background of controversy, which doubtless forged the MRCCC into a tight unit, but also threatened its existence at times… the erudite, vociferous and passionate debates between the pro-dam and anti-dam factions on the early MRCCC… the infamous ROSS meeting in Cooroy … breakaway groups in Maryborough and the bush lawyers carping and threatening to bring the whole shebang down… not to mention the suspicion surrounding the fact that *The Government* had initiated the whole process.

And think of all those OTHER meetings held before and after General Meetings to actually reach agreement on what to do… working groups, reference committees, executive meetings, special strategy meetings (you know the kind). Now add all the telephone calls, emails and conversations required to do the job of the MRCCC. Anyone who has ever been in a nonprofit community group will relate I'm sure. It was truly the most enjoyable and personally rewarding period of my working life.

100 general meetings is a seminal signpost to the massive effort, motivation and commitment displayed by community volunteers, paid staff and many local and State Government workers who believe in the MRCCC cause… and still do.

It's amazing what can be achieved when you do two fundamental things together with people: create the conditions in which people want to participate, and provide them with opportunities to be positive and make a contribution… and that's the simple 'secret' behind the MRCCC work.

Waterwatching

Ian Mackay

Ladies and gentlemen… in water… a toast
… The magnificent rivers… of the Sunshine Coast.

Maroochy's wide mouth… the pelicans wheeling,
Mooloolah… less known… yet every bit as appealing.
Noosa's dual nature… tea-tree lakes and reflections,
Her mouth densely settled… two different complexions.

The Mary headed northwards into Hervey Bay,
Ancient lungfish give way to giant whales at their play;
Waterfalls at beginnings… mangroves near the sea,
Marine fauna spawning… in quiet estuary.

But our rivers… alas… have long been neglected,
Just dumped in, and pumped from, and poorly protected;
Far too often they're treated as just… natural drains
… that funnel the run-off whenever it rains.

Waterwatch volunteers… they monitor… they measure,
They keep track of the pulse of this living treasure.
They are folks of all ages… who reflect on the river,
Sharing the joys that such places deliver.

Though diverse be their background… yet their goal is the same,
Caring for rivers… the Waterwatch aim.
Despite Nature's forgiveness, we all need to care,
To value our rivers, our forests, our air.

So look after it all… you know that you oughta…
For every thing… in the catchment… reflects in the water.

Mary River Catchment Coordinating Committee - 100 General Meetings

More homes for our Cod

Dale Watson
Mary River Catchment Coordinating Committee

Snags are Good

It is not breaking news that our endangered Mary River cod depends on snags in creeks and rivers for its survival, spawning sites, protection and cover. Large woody debris also provides

- critical habitat for many other aquatic species
- a bridge for a range of animals to enter and exit the water
- small local scour and deposition areas, providing variety in depth and habitat
- protection from erosion for stream banks and beds.

The list of benefits goes on.

So what's the problem?

Many of our streams now contain very little LWD. Throughout Australia in the 1950s, streams were desnagged – that is, LWD was removed – on the understanding that snags 'clogged up' the waterways and increased flood impacts. We now know LWD is crucial to stream stability and healthy instream habitat, and recent studies have shown that the effect of LWD on flood levels is insignificant. And there are less trees along the banks to become snags when their time comes.

Excavator placing habitat logs with boulders attached by steel cable into deep pools for fish habitat. [Dale Watson]

The first of three engineered log jams constructed at Amamoor Creek to protect the bank from further erosion. [Dale Watson]

What are we doing about it?

The Mary River Catchment Coordinating Committee and DPI&F, with funding assistance from the Maroochy Shire Council, Cooloola Shire Council and Department of Natural Resources and Mines, has recently completed two LWD re-introduction projects on the lower Obi Obi Creek and on Amamoor Creek. At both sites the aims are to provide habitat for the cod and other aquatic species with instream LWD, and to counter local bank erosion by diverting the flow with engineered log jams.

A detailed plan of where to place the LWD was developed for each site, with Griffith University assisting with the many calculations to ensure the logs would be stable and not move during floods. QDPI Fisheries has provided significant support, monitoring the fish species at the sites both before and after the LWD was introduced. Logs for the projects were sourced from a local road widening, the Cooloola Shire dump and a house block clearing. Landholder involvement in the projects has been very enthusiastic, and invaluable!

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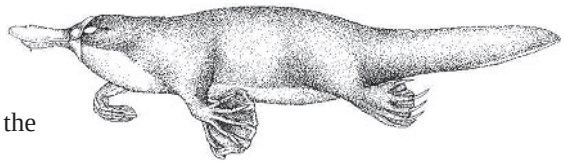


Joel Bolzenius
Noosa & District Landcare Group

The platypus has established itself as the world's weirdest animal.

A report in the international journal *NATURE* has revealed the platypus has not just one x and one y chromosome determining sex like everyone else, but five x and five y chromosomes produced by an oddly complicated process.

When platypus sperm are produced, the chromosomes line up in a long chain x,y,x,y,x,y etc. Then the x's and y's separate and move to opposite poles. Instead of producing sperm with a mixture of x and y chromosomes like most animals, this process produces what is, in effect, a female sperm with five x chromosomes and a male sperm with five y chromosomes.

So while the human system is described as 'xx/xy', the platypus is described as 'xxxxxxxxxx/xyxyxyxyxy'.

To top it off, the chromosomes at one end are similar to bird sex chromosomes (thought to be quite primitive), while those at the other end are similar to human sex chromosomes (which are relatively recent)!

The reasons or benefits for this complicated process are still unknown. Maybe aliens really are living amongst us!

Joel Bolzenius is available to discuss matters platypus on 5485 2468.

Fish & turtles recover before re-release

Lynn Klupful
Tiaro & District Landcare Group

The cool overcast conditions were welcomed by everyone at the Tiaro Catch & Release Fishing Competition in late 2004. More than 200 people registered, coming from Bundaberg, Buxton, Eidsvold, Monto, Broweena, Kilkivan, Hervey Bay, River Heads, Maryborough, Gympie, Conondale, Kilcoy, the southside and northside of Brisbane, and all around Tiaro Shire.

David Whelan, fishing writer for *Bush 'N Beach* magazine, supplied three recovery tanks which gave the fish the opportunity to 'catch their breath' before being returned to the river. Forty-five children attended David's Learn to Fish clinic to become better fisherfolk.

Two magnificent five-year-old Mary River cod, weighing about five kilos apiece, were released back into the ponded reach of the river by Noosa Community Fish Hatchery representative, Mr Vince Collis, in the hope this species will continue to thrive.

Our group, Tiaro & District Landcare Group, has been concerned about the turtles caught each year. Fifteen turtles were brought in during the competition, measured and checked for injuries before re-release. No injuries were found. Very few people had ever seen a 4.6 kg Burnett River snapping turtle.

The proceeds are providing ongoing support for the Mary River turtle and Mary River cod recovery projects.

Fishing Station & Widgee Cks 30 yrs ago

Gordon McIntosh
Widgee

Living on the banks of Station creek, fishing was always going to be part of the McIntosh boys' life. The illusive cod (Murray, as it was then known) was always a hot topic when the local creeks were running a banker.

My father, the late Inky McIntosh, had hundreds of fishing yarns. They generally ran along the lines of 'big hook, big bait, plus 200 lb green cord line equals big cod'. Using this method in the early 60s, we did catch a lot of fish – mainly eels, eel-tailed catfish, and the odd cod.

I kept records from 1967 to 1989 of the 34 or so cod we caught. The heaviest was 11 lb 4 oz and the lightest was 2 lb. The average was 4 lb 5 oz.

There seemed to be quite a variation in the appearance of the cod we caught. Some were short and deep in the body, and others were longer and more 'slender'. I thought it had something to do with their territory – how long and deep the stretch of creek was, whether it was sandy or rocky, the holes small or large etc. Maybe not. I would be interested in hearing other people's views on this variation.

I still live at Widgee, and I've noticed many changes in our creek systems over the last 40 years. There's less mullet, the holes are shallower, and there are less large floods to keep the holes deep, mainly in Station Creek because it's more sandy. Fishing is down 70 per cent.

On the other hand, Station and Widgee Creeks have more vegetation these days, but of course cats claw creeper is a major problem in lower Station Creek.

From the thousands of fingerlings tagged and released into Widgee Creek in recent years, we should see the numbers of cod increase hereabouts in time.

Stocking in 2004

Bob Simpson
DPI & Fisheries

The Lake Macdonald Fish Hatchery has once again raised the bar, with a record 78,203 Mary River cod fingerlings reared and released in the 2004 breeding season. This tops the previous best of around 63,000 cod released in 2001, and brings the total number produced at the hatchery since 1998 to 390,000.

This has been a monumental effort on the part of the Noosa District Community Hatchery Association who manage the hatchery and, in particular, Darren Knowles who runs the daily operations.

Most of the cod produced in 2004 found their way into creeks, rivers and dams outside the Mary River catchment. The Mary system has been the focus of cod stocking for a number of years now, but the focus for the next few years will be other south-east Queensland streams where cod used to occur. This is an important step for the cod recovery program, which has always operated with the aim of restoring cod populations throughout the south-east.

Here's a rundown of the numbers of Mary River cod released throughout south-east Queensland in 2004:

Mary River and tributaries	13,067
Lake Macdonald (Mary River system)	14,436
Lake Borumba (Mary RS)	2100
Lake Samsonvale (North Pine RS)	3900
Brisbane River and tributaries	9000
Stanley River and tributaries	5400
Somerset and Wivenhoe dams (Bris/Stan RS)	5400
Cressbrook Dam (Bris/Stan RS)	4500
Lake Moogerah (Bris/Stan RS)	750
Albert and Logan Rivers	10,000
Lake Maroon (Albert/Logan RS)	750
Coomera River	4400
Hinze Dam (Nerang RS)	4500

Mary River Catchment Coordinating Committee - 100 General Meetings

Cod in the Coomera River

Michael Hutchison
Freshwater Fisheries Research Coordinator, DPI&F

A species of cod, most likely the Mary River cod, occurred in the Coomera River until the 1940s or 50s. It is not known what caused the cod to become extinct here, but it was probably a combination of dynamite and net fishing, drought, and bush-fires with toxic ash runoff.

Since 2002, DPI&F have been stocking cod into suitable habitat in the Coomera River as part of the Mary River cod recovery program.

The Coomera River is relatively short and flows from the Lamington Plateau to the Gold Coast. The river is generally in good condition with extensive areas of intact riparian vegetation and plenty of large woody debris in parts. The mid-section of the river, which flows through uncleared Army-controlled land, has rocky gorges and deep pools with overhanging vegetation – ideal adult cod habitat.

However restoring the riparian zone in the lower and upper sections of the river and providing fish passage past a couple of elevated road crossings and small weirs will considerably improve the cod's chances of reclaiming the river.

3000 cod were released in December 2002 and another 2000 in 2003. In December 2004 we released 4400 cod.

Unfortunately the summer after the 2002 stocking was very dry and there was little flow in the river. However the 2003 and 2004 stockings were followed by wet summers with good flows.

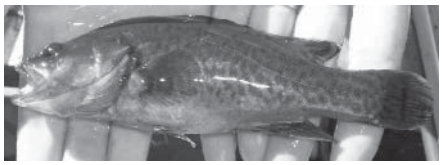
In August-September 2004 DPI&F did a fish biodiversity survey in the freshwater reaches of the Coomera River. We captured six cod, all from the 2003 stocking, which was encouraging. These fish were about 17 cm long. We found them in either shady undercut banks under lomandra or in rocky crevices in less than one metre of water.

As well as cod, we caught 18 other native fish species. Shrimp were extremely abundant and no doubt are a major food source for juvenile cod.

In 2005 we plan to revisit the Coomera River and sample just for cod.

Finding stocked cod in rivers like the Albert-Logan, Mary, Stanley and Coomera rivers is an encouraging sign for the recovery program, but we can only claim complete success when we can prove these fish are breeding in the wild. This can be done by using pole-mounted underwater cameras to examine hollow logs and rock overhangs for cod nests (which is what the East Coast Cod Recovery Program is doing). Or plankton drift nets or towed plankton nets can be used to sample for cod larvae (which is what the Trout Cod Recovery Program in the Murrumbidgee River is doing).

Michael Hutchison holds a lungfish (above) and juvenile cod (below) caught when sampling the Coomera River. [DPI&F]



Cod from early stockings in the Mary and Albert-Logan Rivers should now be close to breeding size. These Coomera cod may need another three years.

We can compare nesting rates and larval counts in the restocked areas with those in Tinana and Coondoo Creeks, which have good populations of wild cod. And we will need to monitor over several years to account for seasonal variation and increasing numbers of stocked cod reaching maturity.

Hatchery to close?

Darren Knowles
Hatchery Manager, Noosa & Dist. Community Hatchery Assn.

With another record season – 79,000 fingerlings released – one would think the hatchery's future would be assured, but that is not proving to be the case. It seems the lack of funding, mainly from the federal government, may bring an end to the hatchery and therefore severely jeopardise the future of the Mary River cod recovery program. This all seems quite trivial when you consider that for the $70,000 or so that it costs to run the hatchery for the year, fish worth around $140,000 are produced.

So this year's record season was up 16,000 on the previous record. These fish were produced from five spawnings in the early spring and stocked into the hatchery troughs.

The fingerlings were fed their usual diet of zooplankton and jet-setting black worms from Victoria. These worms are the major food for the fingerlings during their 12 to 16 weeks at the hatchery, and are very expensive to boot. The worms, the size of a pin and produced in troughs in the cold mountain waters of Victoria, are worth $42 a kilo. The fingerlings can go through 24 kilos a week at peak times, so this is a major expense. We are currently looking for ways to lower this food bill, hopefully with some kind of local product.

The fingerlings were released throughout south-east Queensland (see Bob Simpson's stocking report). There aren't funds available at the moment to undertake a proper survey of how the fingerlings are going, but word-of-mouth reports are very encouraging.

Cut & paint your way to happiness

Woody weed control

Greg Brown
Pest Management Coordinator
Caloundra City Council

Controlling woody weeds – like camphor laurel and large leaf privet – can be a costly and time-consuming exercise. The last thing you need after spending a whole weekend dealing with these invaders is to see them coming back.

Here are some suggestions for making one of the more popular methods of woody weed control – cut and paint (or cut-stumping) – more effective:

- Make sure the time between when you cut the plant and when you apply a herbicide is no longer than 15-20 seconds. Any longer and the plant has already started to seal over its sap vessels and you could be wasting your time.

- If you did cut something down but didn't apply the herbicide within 15-20 seconds, all you need to take with you is a tomahawk. Use the back of the tomahawk to bash the rim of the stump and then immediately paint with the herbicide mixture. This re-breaks the sap vessels and allows the herbicide to be taken in and moved to the roots.

- Notice I said to paint the **edge** of the stump with the herbicide? The outer section is where the vessels that take sap to the roots are located. Treating the rest of the stump won't make any difference and is a waste of herbicide.

- If you use a chainsaw to do the cutting, you can run into another problem. The chainsaw leaves a thin film of chain oil on the cut surface. Because oil and water don't mix, when you put the herbicide and water mixture on top it may not be able to get into the plant vessels through the oil film. Again, use the tomahawk to unblock the sap vessels.

- For this reason, it's not a good practice to make cuts into the trunk with a chainsaw and then paint the cuts as a way of stem injecting. Not only do you get a layer of oil, but also the cuts tend to be sloped and the herbicide just runs out and is wasted.

- Don't be tempted to make deep cuts across the stump and fill these with herbicide – it's a waste of time and money.

- The most commonly used herbicide is one of the glyphosate products. The label gives the recommended mixing rate – so that's the rate to use. Anything stronger is wasted money, anything weaker may not work. And don't use diesel or kerosene with glyphosate. They don't mix and they aren't any more effective. Water is what mixes with glyphosate – nothing else.

- Dirt and organic matter are the enemies of glyphosate. They both combine with the herbicide and make it unavailable for the plant to absorb. Make sure you keep the cut surface clean and your equipment free of dirt. If you're using a paintbrush to apply the herbicide mixture, keep the brush off the ground. Make sure the water used in the mixture is clean. Don't use dam water unless you can see the bottom. Don't use bore water if it has a high iron content. Don't use creek or tank water if it has organic matter floating in it.

- It's best to cut the stump at about halfway from your knee to the ground. Cutting it too low means you might get dirt on the surface; cutting it too high means the herbicide may not be moved to the roots.

- I find a 5-litre spray bottle is good for applying the herbicide. Use low pressure and a coarse jet spray – not a fine mist. Alternatively, you can use one of those cheap hand-held bottles that cost about $1, or you can use a paint brush and a tin (kept them out of the dirt). You can even use a clean shoe polish bottle – the kind with the foam applicator on the top (they don't leak and you can clean it off in water).

Follow these simple suggestions and you'll have no problems killing off your woody weeds using the cut and paint technique.

For more information on this and other woody weed control techniques, check out the DNRM&E website at http://www.nrm.qld.gov.au/pests/environmental-weeds/pdf/generalinfo.pdf or call into Barung Landcare – or contact Greg at Caloundra City Council on 1300 650 112 or 5420 8200.

National strategy for aquatic weeds

The National Aquatic Weeds Management Group was formed in 2003 to formulate a national strategy to combat three aquatic weeds from the 20 Weeds of National Significance: cabomba *Cabomba caroliniana*, salvinia *Salvinia molesta*, and alligator weed *Alternanthera philoxeroides.*

The aim of the group is to raise awareness and understanding of the problems posed by aquatic weeds, and to improve cooperation between agencies working on these weeds.

The Group's Coordinator, Andrew Petroeschevsky, NSW Dept of Agriculture, can be contacted on (02) 6640 1618.

Phillip Moran (NDLC/LMCCG/MRCCC) is also a member of this group and can be reached on 5485 2468.

Members of the NAWMG watch the cabomba weed harvester in action at Lake Macdonald. [LMCCG]

Why did the fish cross the road?

Because it was actually easier than getting through the causeway...

Brad Wedlock
Mary River Catchment
Coordinating Committee

Just imagine being a small fish in the Mary River. Much of the riparian vegetation cover has been washed away so the water temperature is warmer during the day and colder at night, there aren't as many underwater snags to hide in, and introduced species such as mosquito fish want to compete for your food or eat you! And there just aren't as many fish anymore, which means less fish to play with.

Then humans build barriers which prevent migration throughout the catchment. It's enough to make you pack up and go.

Fish move widely in waterways, to breed, feed, escape predators or find new homes. Many fish species found in the Mary catchment, like barramundi (we hope!), move between marine and freshwater habitats, while fish like the Mary River cod stay in freshwater but move widely when they can.

Barriers, such as causeways, can severely restrict fish movement, particularly for species that spawn in marine environments. Barriers can be physical, such as a dam or causeway, and also hydraulic or behavioural. High water flows or turbulence (e.g. fast flows through narrow pipes) create hydraulic barriers. Turbulence such as 'white water' or water filled with bubbles is difficult for fish to swim through, particularly juvenile fish, because white water is mostly air. Long dark tunnels passing under a road crossing create behavioural barriers. Species such as gudgeons and spangled perch, both native to the Mary catchment, will not enter darkened passages.

So when is fish passage impeded or prevented by a waterway crossing?

When:

- the water velocity is too high
- the water turbulence is too great
- the culvert is too dark
- the culvert is too long
- the culvert is narrow
- the water in the crossing is too shallow
- there is a drop on the downside
- the crossing has been placed at too great a slope
- the crossing has not been maintained and is full of debris.

Worst Causeway Award goes to: Pages River, Hunter River catchment. Two small culverts are used to pass water from a river 50 metres wide. Note the 'waterfall' on the downstream side, darkened tunnel, white water and increased water velocity.
[B. Wedlock]

Won't the fish wait until the causeway floods to swim upstream?

Fish tend to wait until after a flood to move. Water velocity of 0.3 metres per second or less is ideal for many fish. If water velocity reaches one metre/second, fish are unlikely to be able to migrate upstream. Fish generally get washed downstream during a flood, rather than move up.

Won't they jump over the barrier?

Most native fish cannot jump barriers. Most don't jump at all, as they are relatively weak swimmers. Fish ladders built before 1985 in Queensland were based on North American designs for fish that jump, such as salmon and trout. These designs are ineffective for native fish species because they are either too steep or too turbulent.

So what is an ideal crossing?

An ideal crossing is one which spans the width of the waterway and doesn't alter the water flow, such as a bridge or open-bottom culvert.

Piped causeways are the least preferable option because the pipes used are generally narrow (40cm pipes) and don't span the width of the waterway. Where two or three pipes are used and the approaches are concreted to the bank, a funnel effect of high water velocity forms on the downstream side creating, in time, a scour pool. This can undermine the causeway structure and lead to greater fish passage problems as a small waterfall is produced where the water runs off the causeway. Small pipes also get clogged during flood events, creating more erosion and scour problems.

In addition to all this, causeway pipes are mostly placed in the middle of the creek, but fish tend to swim upstream along the edge of a creek, in the slowest flowing water.

A causeway is a nightmare for a fish.

Bridges and open bottom culverts that retain natural features such as waterway width, streambed material and cross-sectional area are preferred. Culverts that are countersunk below the streambed with natural stream bed materials on the base of the culvert to increase roughness are also a good option. Bridges can also provide access during flooding, when causeways are unsafe to use.

For more information on crossing design and barriers to fish movement, contact Brad Wedlock at the MRCCC Resource Centre on 5482 4766.

Nature is Beautiful, Not Neat

Tips for Bush Regeneration

Phillip Moran
Noosa & District Landcare

Bush regeneration is **not** landscaping or gardening. The aim is to

- create conditions conducive to natural regeneration
- create conditions suitable for native wildlife.

The Australian bush is **not neat**.

Step one: Observe. Have a good look around, in all weather conditions… drought and flood. Look for degrading factors – stock, erosion, fire, weeds. Remember people can never do a job as well as Nature, so check which species she puts where. And have a thoroughly good look at those weeds.

Step two: Try to halt, or at least slow, the degrading factors. Fence the stock out, or stop burning. Burning is easy, but it's no good for revegetation.

The best way to cope with weeds is to get 'em before they establish. Keep observing. If you recognise weed seedlings early on and rip 'em out, you will have saved yourself many hours of pain in the future. The price of weed freedom is eternal vigilance!

Step three: Identify an area to work on. Don't set your goals too high. When you're 'budgeting', remember that you – your time and energy – are a resource. If you lose the will to keep going, your whole project will stop.

Wherever possible, work with Nature, not against her. If you're fencing a remnant off from stock, include a bit extra so you can capitalise on the existing seed bank. Removing weeds can often activate an existing seed bank too.

Step four: Time for the Primary Weed Clearance. If you have big camphors, masses of privet etc, you have to get rid of them. Consider killing large trees in situ. This is a good idea because light levels change gradually, giving existing vegetation time to adjust, and because dead trees continue to provide perch sites and hollows. But it's also a bad idea because from now on you'll have to watch out to avoid getting whacked on the head with dead branches. Consider leaving any cut wood on site… it's all valuable habitat.

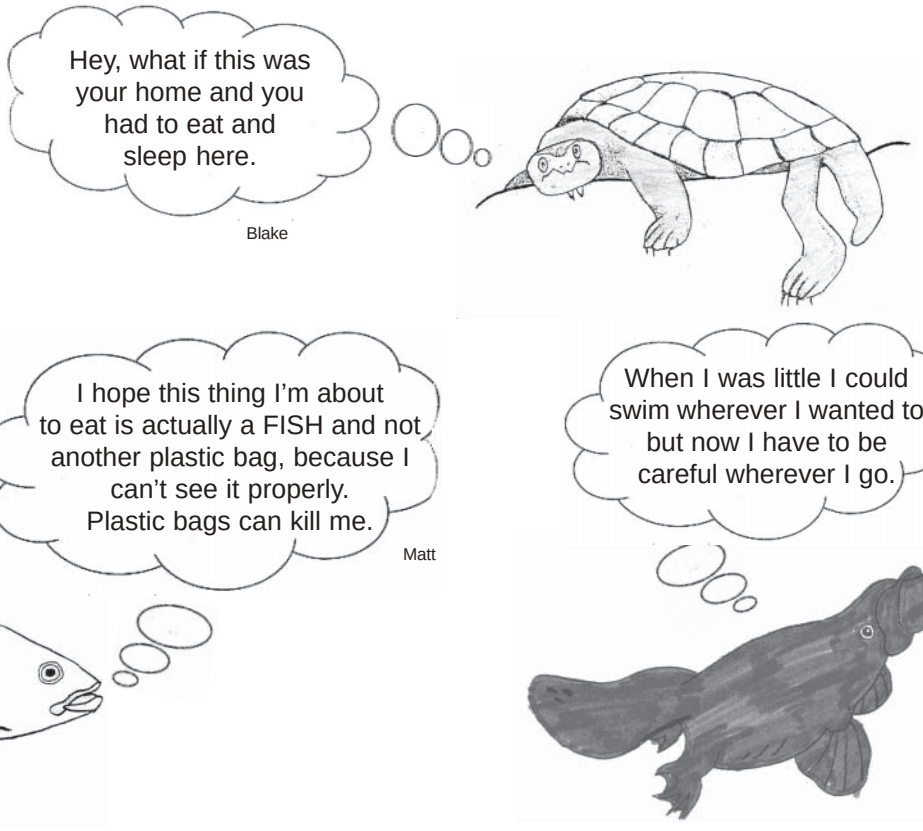
Step five: Natural regeneration or assisted regeneration? If you are working on a bare paddock, you will need to get some trees up and going as quickly as possible. Pick quick growing, tough species, and incorporate some eucalypts. Consider marking access tracks now. Pedestrian traffic, however friendly, can account for many new native trees!

Having disturbed the soil, you'll now be getting more weeds, maybe new ones. Time for a Secondary Weed Clearance. Watch out for naturally seeded natives!

Step six: Maintenance… This will be ongoing. Keep an eye out for new weeds and kill 'em! Mark your new native seedlings, and mulch them if you can. Go walk your new tracks, and stop and sit for a while. Observe, and enjoy the wonder of our Australian bush.

Imagine ...

The 2004 Year 6/7 class at Yarrilee State School, near River Heads, imagined what they'd have to say if they lived in the Mary River. Their teacher, Damien Lynch, said the class had been learning about the influences on and of the Mary River and the subsequent consequences for the Great Barrier Reef. The children's comments generally reflected their concerns with pollution of the natural environment.



Mary River Catchment Coordinating Committee - 100 General Meetings

Prizes for knowing your catchment

Eve Witney

How well do you know your Mary River catchment?

This crossword includes the names of all the major creeks of the Mary, plus the major impoundments, plus one town (that isn't also a creek name), plus a few generic terms (you know, like 'river', but that's not one of them). The second set of clues below will help if you're searching through maps.

Send your completed crossword to the editor (contact details on the back page) and the first correct entry from each of the lower, middle/west, middle/east and upper regions of the catchment will receive a $20 voucher for plants generously donated by

- Barung Landcare Nursery (Maleny)
- Gympie Landcare Nursery
- Noosa Landcare Nursery, and
- Tiaro Plants Nursery.

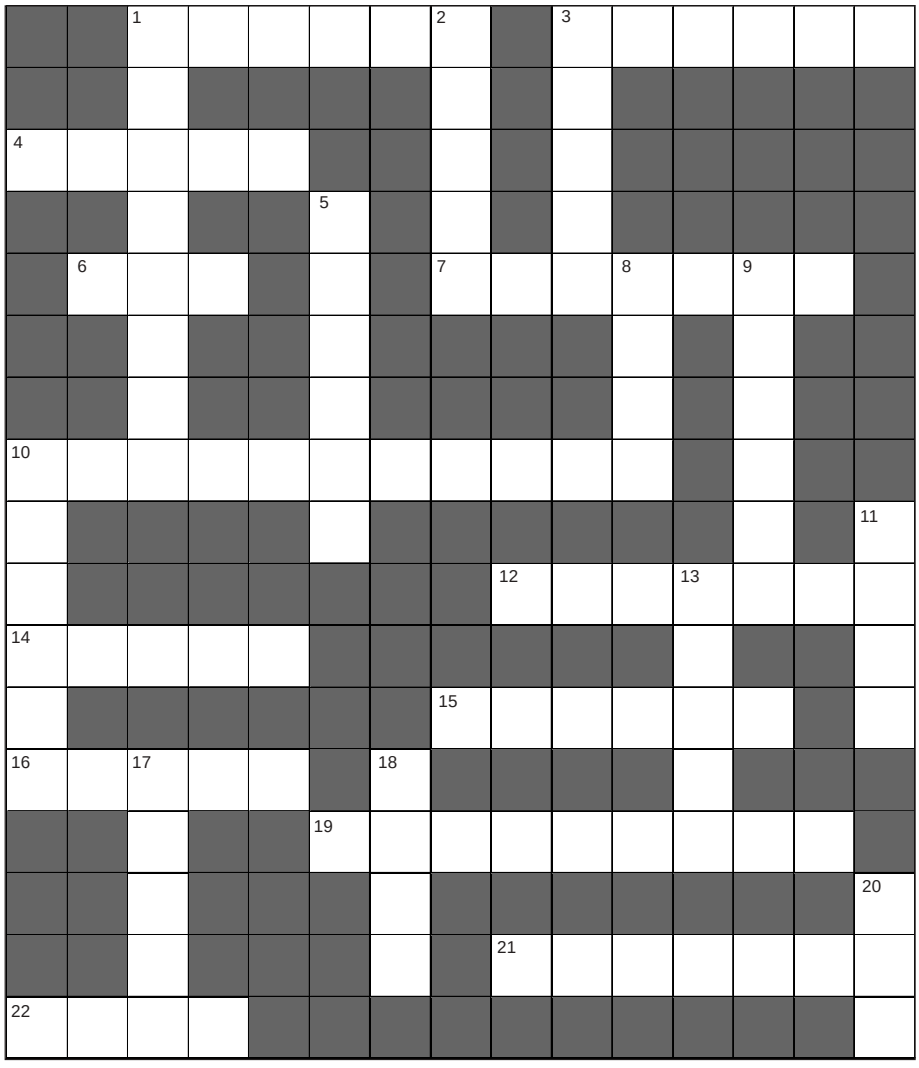
The solution will be in the next issue of the CodLine, or contact the editor if you'd rather not wait that long. Good luck!

Across

1. Creek of many names by permaculture village (6)
3. Once the name of a Shire (6)
4. Nature's way of holding water, with one each side (5)
6. Built by people to hold a lot of water (3)
7. Hosts the Muster (7)
10. English version of Woodford Folk Festival (11)
12. Distance between bullock camps (3,4)
14. Not yet a river (5)
15. Almost rhymes with banana (in a tin) (6)
16. End of the line for the Rattler (5)
19. Home of the hatchery, second part of name (9)
21. End of the road after the end of the line for the Rattler (7)
22. Built to hold less water than 6 across (4)

Down

1. The Rattler stops here
2. Fred Flintstone says this (5)
3. Butterflies like this vine (5)
5. Tucked in a Pocket (6)
8. The main stream (4)
9. Double-barrelled name (3,3)
10. Near a town named for a nut; You might say this to a baby ie (6) goo
11. Not shallow (4)
13. Said once or three times, sounds like songs by Pink Floyd and Abba (5)
17. A way of dancing (5)
18. Home of the hatchery, first part of name (4)
20. End of the line for the river; Hervy (3)



Second set of clues:

Remember, the upper catchment is in the south, and the lower is in the north.

ACROSS

1. creek, upper
3. creek, middle west
4. generic
6. generic
7. creek, middle west
10. creek, middle west
12. creek, middle east
14. generic
15. creek, lower east
16. town, middle west
19. impoundment, middle east
21. impoundment, middle west
22. generic

Down

1. creek, middle west
2. creek, middle west
3. creek, middle west
5. impoundment, upper
8. river
9. creek, upper
10. creek, lower
11. creek, middle
13. creek, lower west
17. creek, upper
18. impoundment/generic
20. generic

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is gratefully acknowledged.

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Barung Landcare

WORKING FOR OUR FUTURE

CATCHMENT COORDINATING COMMITTEE

Newsflash!

18 baby Mary River turtles, artifically incubated at the QPWS Mon Repos turtle hatchery, were released into the Mary River at Tiaro on Thursday 20 January 2005.

A similar number are off to teach researchers just how baby turtles dive, after which they too will be released into the river.

One egg from each of the 55 nests located during Tiaro Landcare's Mary River turtle project was sent to Mon Repos for identification. About 70 per cent hatched successfully.

This issue ...

The CODLine

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