

Catchment Connection



Autumn 2009/10 — Regional Update

Hi everyone

Hope you are all keeping well and enjoying the wet weather we have had over the past few months. I am very happy about my new position with the North Central Catchment Management Authority (CMA). For those of you who haven't heard, I have been successful in my application for the Regional Waterwatch Coordinator position. I started in this position as of 31 May 2010. I am now able to work more independently and make decisions for Waterwatch. I am looking forward to this being a positive and exciting new journey for all of us!

A quick update on activities I have been involved in for the past couple of months. I have delivered several presentations on Waterwatch to a number of Landcare Groups across the North Central region and attended the *All Level Taxonomy (ALT)* water bug workshop held by John Gooderham and Edward Tsyrlin (the two water bug gurus). I helped Strathfieldsaye Primary School with their challenge to construct a water bug for the Crafty Design-RACV Energy Breakthrough Challenge, ran a water bug workshop for 150 students at Echuca Primary School and ran Saltwatch sessions with our River Detectives! Phew! And it doesn't stop there, I have also been to Clunes to deliver water bug workshops to Wesley College year 8 students, and ran a water quality monitoring session at Bendigo Regional Institute of Tafe.

I am having a great time and feel I have been welcomed into this position by all the Waterwatch monitors I have met, spoken to or emailed over the past few months. I would like to say a big thank you to all of you and look forward to meeting those I haven't met yet - with QA/QC (Quality Assurance/Quality Control) Week fast approaching, I'm sure it won't be too long before we all get together and have a good yak face to face!

April Curatolo is back at North Central CMA and has joined the team, helping to deliver and support Waterwatch and Landcare. April has some great ideas and a strong background knowledge of the organisation and industry. I feel April's support will help me in my role to support you. You will notice a few new changes over the coming months, starting with a fresh new look to our newsletter, fact sheets and our web pages. Your ongoing support will help to make this happen. I will also do my best to ensure you all get the support you need. With careful planning over the next few months more time will become available to spend with our very important volunteers, as without you this program would cease to exist!

We will also be concentrating on running a few 'special events' towards the end of the year, which will be very exciting and educational, so keep your eyes and ears open!

I would also like to welcome aboard three new volunteers to the Waterwatch Program, they are Shane Elmore, who will be monitoring a site along Spring Creek; Marilyn Tulloch, she will continue to monitor Fred and Dot White's site along Bendigo Creek; and Kira Meeks, who will be monitoring a site along Sheepwash Creek. Its great to have you guys on board and we look forward to working with you all.

To wrap up the regional update, lets all make it work by working together one step at a time.



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NORTH CENTRAL
Catchment Management Authority
Connecting Rivers, Landscapes, People

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Landcare

Waterwatch and Landcare are now doing our best to work together. As many of you may know, Jodie Odgers is our new Regional Landcare Coordinator for the North Central region. Mel Taube is now on maternity leave, with only a few days till she has her new little button! As I was saying, in working together I have attended a few Landcare meetings (some with Jodie too) over the past month and delivered presentations on Waterwatch. I feel this is a positive approach to broadening the Waterwatch Program and supporting Landcare groups along the way. Delivering these activities has led to new monitors joining the Waterwatch Program as either water quality monitors or frog monitors, and also members showing an interest in fish, platypus and water bug monitoring.

If you are interested in having a presentation at your meeting please feel free to call or send an email through, I am always happy to help out where I can.

Or you can contact Jodie on:

T: 03 5440 1883

E: jodie.odgers@nccma.vic.gov.au



Upcoming Waterwatch Events

Quality Assurance/Quality Control (QA/QC) Week 21 – 26 June 2010

QA/QC week is one of our most important activities for the year, as it is a time when all Waterwatch volunteers across the North Central region gather together, eat some food and conduct our annual QA/QC event.

As a part of QA/QC Week, Waterwatch Victoria will produce chemical 'mystery samples' which are distributed across Victoria. Waterwatch Coordinators and Volunteers across the state will test the mystery sample at a QA/QC event or in a one to one session, this is to assess the accuracy of equipment used, and to monitor skills and testing methods.

The mystery samples are prepared in a lab with a certain pH level, Electrical Conductivity level, Turbidity level and Reactive Phosphorus concentration. Each monitor will use their own equipment to test each of the mystery samples provided. Your results (yes even the coordinator has to be tested) will be sent back to the lab where they will be analysed. A report detailing the actual value for each sample will be sent back with our results. Upon review your coordinator will be in touch to inform you of your results and discuss whether they are within an acceptable range.

If your results do not fall within this acceptable range we will organise another session where your coordinator will shadow test you to see if it is our methodology or equipment that needs further attention!

QA/QC is also a great opportunity to bring your Waterwatch kit along to your closest event, so your coordinator can give it a service, clean and update any of your monitoring equipment.

North Central Waterwatch QA/QC events this year are:

St Arnaud – St Arnaud Sports Club, Tuesday 22 June

Lord Nelson Park, Charlton Road – Vic Roads, edition 5 Map Ref: P 220 G 8

Castlemaine – Ray Bradford Room, Wednesday 23 June

Pyrenees Hwy, Castlemaine – Vic Roads, edition 5 Map Ref: P 287 Q 6

Huntly – North Central CMA Boardroom Thursday 24 June

628-634 Midland Highway, Huntly – Vic Roads, edition 5 Map Ref: P 277 N 7

Time – 6.30-8.30pm (all events)

Dinner will be provided for all those attending (please inform us of any special dietary requirements)

Please Note: If you are unable to attend this event, please contact us to arrange a one-on-one QA/QC session.

Cass Davis
T: 03 5440 1863 or
E: : cass.davis@nccma.vic.gov.au

Nicole Bullen
T: 03 5440 1877
E: nicole.bullen@nccma.vic.gov.au



Regular Catchment Connection Features

Creature Feature

Grey-headed Flying-fox (*Pteropus poliocephalus*)

The Grey-headed Flying-fox has made its way in to our town, so I thought it fit to tell their story in the Creature Feature section of Waterwatch. Here is some information I have found out about them:

Flying-foxes are nomadic animals; their movement patterns and local distribution are determined by variations in climate and the flowering and fruiting patterns of their preferred food plants.

Flying-fox numbers and distribution in Australia have changed markedly since European settlement. Loss of natural habitat and food supply in New South Wales and Queensland due to land clearing and human culling in the past has rapidly reduced numbers of some species in eastern Australia.

Grey-headed Flying-fox numbers have decreased to such an extent that they are listed as threatened under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.

This loss of habitat and the creation of new habitat and year round food supply in suburban areas over the last 30 years, has meant changes have occurred in Flying-fox distribution. For example, the range of the Grey-headed Flying-fox has contracted in the northern area (southern Queensland and northern New South Wales) and expanded southwards into Victoria.

Flying-foxes roost (rest hanging upside-down) in a wide range of warm and moist habitats, including gullies in lowland rainforest, coastal stringybark forests and mangroves, often beside a creek or water.



Grey-headed Flying-fox

Flying-foxes prefer blossom, nectar, fruit and occasionally leaves of native plants, particularly eucalypts, tea-trees, grevilleas, figs and lilly pillys. They will also take the fruit of cultivated trees, particularly during periods of shortage of their preferred food

Flying-foxes prefer to feed close to where they roost. So most feeding is done within five to 15 kilometres from the campsite. However, they can travel up to 50 kilometres (100km round trip) in search of native nectar, blossom and fruit.

When a productive food source is found, individuals establish and defend their feeding territory, returning night after night to the same trees for up to a month or more or until the food source is depleted. Feeding groups vary from single individuals up to half a dozen or more in a single tree

This information was sourced from: www.dse.vic.gov.au

Photo of the quarter — Spot the Go-nanna!

By Robyn McKay

My site is on the Bendigo Creek which borders our family's farm at Drummartin, north of Bendigo. My two girls and I were lucky enough to see a large goanna (or as my youngest daughter says - a go-nanna) on a Yellow Box tree near our house. We couldn't work out why we were able to take his photo without him running up the back of the tree as they usually do, until we noticed another two goannas higher up that were not too pleased about company! We sometimes see their tracks in the dirt, often in the direction of rabbit burrows!

If you have a photo you would like to put in 'Photo of the Quarter' please forward to Cass with a little story, and I will put it in an upcoming edition of Catchment Connection



What bug am I?

I have seven pairs of walking legs

I am flattened from the sides and have a rounded profile

I come in a variety of colours

I live in the edges of water

I am a small shrimp-like crustacean

I predominately feed on decaying vegetation; though opportunistically will feed on other animals

When I move, I can walk using most of my legs but this is very slow, I can also swim in jerking motion flicking my bum

I am a S_ _ _!



Water Weed of the quarter

Water Hyacinth *Eichhornia crassipes*

Family: Pontederiaceae

Origin: Native of tropical South America

Flowers: flowers in clusters on stems mostly taller than leaves. Flowers can get to 7cm wide, and last for 1 – 2 days and when all flowers on spike have matured the spike turns down to the water.

Description: Is free floating perennial to 65cm tall. Leaves basal, young plants with leaf stalks to 25 cm long and inflated at the base and older plants with leaf stalks to 60cm long without inflated bases. Roots feathery, black to purple, to 1m long; usually short if nutrient rich. Seed ovate-oblong, ribbed, about 1 mm long.

Distinguished by pale blue-lavender flowers with darker purple and yellow blotch, and some leaves with a swollen, buoyant base of leaf stalk.

Notes: Attractive but troublesome plant that has spread worldwide, obstructing waterways, reducing fish production, harbouring mosquitoes, and severely disrupting life in some communities along rivers and lakes, mostly between latitudes 35° north and south of the equator. Luxuriant growth is usually a symptom of nutrient enrichment (eutrophication). Water Hyacinth will not thrive in good quality tap water. Biological control has been effective in some regions, particularly in tropical areas.



References:

Noxious Weeds of Australia. W. Parsons and E. Cuthbertson, 1992; pages 139–144. Biology of Australian Weeds. R. Groves et al. Vol. 1, 1995, pages 111–121.



A Waterwatch Monitors' Story

Story by Tamsin Byrne

Why do Waterwatch? Naturally it's good to do your volunteer bit for the local Landcare or even more generally for the environment. All that scientific and chemical statistical data must be useful to someone somewhere! But perhaps there are many other reasons why Jennifer Schatzle, David Merrick and I test three sites on and around the Sutton Grange end of Axe Creek on the first Monday of every month... and when that Monday falls in the school holidays, Jennifer and I ensure that our children and partners come along to join the expedition.

It's a chance to slow life down; share good coffee and an excellent morning tea; and to just spend some time together with friends and neighbours, walking in the bush to do Waterwatch whether it's in the blazing sun, or scrunching across the thick Sutton Grange frosts or through drizzling rain.

We test three sites, one on Axe Creek which does not flow all year round. The other two sites are on tributaries of Axe Creek which are spring fed and flow out of the Sutton Grange granite all year round. Ideally we would like to test the water in the pool which is created where the more northerly tributary (locally named 'Contribution Creek') flows into Axe Creek. When it's cleared of Gorse and Blackberry, we will get to it!

This pool was surely once an excellent waterhole filled with pure clear water. Nearby, barely 100 metres away, is the site of the old Rams Horn Inn. This Inn survived the heady goldrush days as it was built on the road from Sawpit Gully (Elphinstone) to Bendigo. Its owners were held up by bushrangers. Children were born and died there. It was more than a shanty. It boasted a well stocked bar, victuals and a bagatelle-room. It was burnt down and rebuilt once before being burnt out in the 1944 bushfire that destroyed most of Sutton Grange.

And the Waterwatch connection? The pool of water where Contribution Creek meets Axe Creek must surely have been the source of water, particularly in the early days, when no doubt it was the women who walked down and back to collect the water. They were possibly breeding and with toddlers in tow, all dressed in thick, long skirts. They walked through cold frosts which reminded them of Home, or the hip-high stipas which in summer would have been full of those vicious spear-grass seeds.

Perhaps they met or saw some remnant of the local Jaara people. They of course knew about this pool – and the pure water and also the other pool, where we test water on Contribution Creek. Here the water trickles over a great granite slab. This pool is not so deep but overhung by a wall of granite, which shades the sun for most of the day. In this pool tiny fish flicker and dart so fast we have to ask ourselves if we really saw something.

Just a little further up Contribution Creek reveals itself as a jewel. Even though it's been mistreated by sheep hooves in places, if you can look through the scars you can perhaps glimpse just why it was that the local Jaara people decided to make this an excellent place for a meal. In the creekline we still find cumbungi today growing next to the grinding hollows where the women would have pounded the starchy root prior to cooking it. We've found yabbies there, and I'm sure they found more, bigger and healthier specimens than ours! And just a few meters away from the creek we see their midden, next to the big rock slab, where they would have sat in the sunshine to eat, and for many, many years – for the midden is deep and black. And when we test the air temperature here – we always find that it is a few degrees warmer – a bit of a suntrap, sheltered out of the wind. Just the place I would choose to rest and eat too!

Is this all part of Waterwatch? Of course. A reading of the landscape around us. A slowing down so that we can do this, and a passing on of the scanty information we think we have gleaned to our children who learn almost, it seems by osmosis. They are the ones who find the miniscule fish in tiny rock pools. They ask about the frog noises (which is the maniacal-cackle frog?). They write the bird lists. And so we learn that the environment isn't scary and that everything has something to teach us, if we can learn to observe.



North Central Autumn Waterwatch Events

ALT Water bug workshop (April)

In April 2010, the state Waterwatch team met up in Warburton for the final ALT water bug workshop. 'ALT' what does this mean? All Level Taxonomy.

The boys (water bug gurus) who compiled *The Waterbug Book*, John Gooderham and Edward Tsrylin, have been meeting with state Waterwatch representatives to identify how they can develop a 'people-friendly' key to identifying water bugs. The idea is to make identifying water bugs as easy as possible, so Waterwatch volunteers can take part in the opportunity to not only monitor water quality but include macroinvertebrate surveys into their monitoring regime. Don't stress, this is optional! However, with this in mind more ground can be covered to help CMAs across Victoria to identify priority asset areas, by providing more information about our waterways.

Sounds like fun and you would like to be involved? Unfortunately it has not been released yet, but hopefully in the next few months it will be released and we can set you up with a bug net in hand and some waders to go in search for those fascinating creatures that live in our waterways!

Saltwatch Week (May)

Saltwatch Week has been part of the North Central Waterwatch program since 1993. The North Central CMA considers Saltwatch Week to be a very important part of the Waterwatch program as it provides the community with an opportunity to learn about the effects of salinity and its impact on the environment.

In May 2010 Saltwatch Week was run throughout the state. In the North Central region Waterwatch engaged over 150 Waterwatch participants including Landcare members, volunteers and primary schools in taking part in educational programs and quality assurance by sampling a mystery sample that are made in lab by Waterwatch Victoria.

Volunteers and Landcare groups took part by conducting their usual testing at their site, along with testing a mystery sample. This was to ensure their electrical conductivity (salinity) meters were working at a level to obtain usable data – it was also a bit of fun. The North Central Waterwatch Program entered results from all sites monitored into the Saltwatch interactive map on the Waterwatch Victoria website.

Primary schools also took part in interactive education sessions. Waterwatch facilitators visited schools across the region to engage students in activities about salinity. The students learnt how salt gets into the natural environment and how to manage salt affected areas. Students also brought along samples from their dams, bores and tanks to sample. All the students' data has also been placed into Waterwatch Victoria's interactive Saltwatch map.



Kerang Primary School (tasting the salt)



Strathfieldsaye Primary School (playing the 'salty game')

To view your site details go to www.vic.waterwatch.org.au



Campaspe Wonderland (April)

Parks Victoria, along with North Central CMA and the Department of Sustainability and Environment (DSE), delivered an environmental education activity to Echuca Primary School on 29 April called *Campaspe Wonderland*. 150 grade 3/4 students were involved in the activities which ran throughout the day.

Shane Warne (ranger) from Parks Victoria brought some interesting friends along such as a Tree Goanna, Koala, Possum, Brown Snake and even a feral Cat! He introduced the students to the different animals and explained to the students where each animal lives and what it likes to eat... oh, did I mention the animals were Taxidermies? Sorry about that, I bet you were thinking 'oh dear a brown snake'!

Terri from DSE came along to be part of the Campaspe adventure; she brought lots of information for students on flora that is found along the Campaspe River, just behind their school. The students got to go for a walk along the river with Terri and identify plants along the way; they also got to draw pictures of different plants.

I conducted a water bug workshop, looking at and identifying different species of water bugs that were collected from the Campaspe River. Students also got a chance to assess the health of the river by using water bugs as an indicator and we discussed how we can enhance the abundance and diversity of water bugs found in the river.

Students found a range of bugs, and they also had a chance to win Waterwatch bottles for groups who identified the most bugs. They found the activity to be very inspiring and also helped them to identify environmental issues in their section of the Campaspe River.



Students from Echuca Primary School investigate what bugs they have in the Campaspe River

Strathfieldsaye RACV Energy Breakthrough Challenge (April)

The Strathfieldsaye Primary School has been involved in the River Detectives Program for the past few years. The School in previous years has also entered in the RACV Energy Breakthrough Challenge, last year winning the Moving Water Challenge. This year the school will be taking on the Crafty Design - Challenge 1.

This challenge is open to primary and secondary school students. The idea is to design a craft that will resemble and macroinvertebrate. Waterwatch ran a workshop with the school in April; the bugs used were collected from Sheepwash Creek (just behind the school). Three workshops throughout the day were held with 50 students in each workshop. Students got to watch the water Bugs swimming in trays, pick the bugs out and put them under a microscope where they could identify characteristics of different water bugs. From here they were able to identify each water bug using the ID charts provided. The students also identified sensitive species from the more tolerant species and were able to score the overall health for Sheepwash Creek using the aquatic invertebrate data sheet.

Now that the students at the Strathfieldsaye Primary School are able to identify water bugs and have studied how they move in the water, the students will attempt the RACV challenge later this year.

The students will use a range of materials to construct the water bug chosen for the challenge; materials that can be used are TEKO, LASY and LEGO along with scrap materials. The idea is to design a stable craft that will run on its own power along a 9.4m x 81.5cm channel – the craft must be able to support a full soft drink can. The fuel source for the design must be alternative to fossil fuel, with no batteries or capacitors permitted. The craft is expected to maintain its direction along the course and must complete the course in less than three minutes!

WOW, sounds like these guys have a lot of work ahead of them! We will keep you posted about the progress and the final results of this challenge.



Strathfieldsaye Primary School Students (Checking out the Bugs!)



Waterwatch at Birch Creek (Wesley College)

Story by Jessica Barnes

On Wednesday 19 May, Cass Davis and I headed down to Birch Creek near Clunes in the Upper Loddon program area, to run a Waterwatch session with a group of 18 year 9 students from Wesley College. As part of completing year 9, each student from the college has to select an 8-week program in which to take part – one of which is an environmental program.

The students live on campus at Clunes for eight weeks, and complete various onground environmental works around the Birch Creek. As part of this program they have planted trees, and have looked at various environmental issues in the area. Cass and I went to visit the group to run the session to give the students some understanding of the importance of monitoring water quality to measure the health of the catchment.

Cass outlined what Waterwatch is, and the different sorts of programs and ways in which to monitor the health of your local creek or area, including listening out for different frog calls.

The main activity of the day, though, was all about macroinvertebrates. After getting a bit of a run down on what we can learn from macroinvertebrates or ‘water bug’ samples – that they can indicate the health of a waterway based on the types of bugs present, their abundance, and their relative sensitivity to pollution – we got stuck into sampling and having a look at what water bugs were present in the part of the creek that the students have been working around.

Although they were at first a bit apprehensive to get into some waders, the students soon got excited about the idea of getting into the creek, with one lucky student getting to have a go at collecting some water bug samples for the group to have a look at. After looking through their samples, and sorting what bugs were present, the groups calculated the score for the stream condition, and we collated that as a group. The score was ‘fair’ however we explained that a larger sample and a combined score may have given better results given that the diversity of bugs that were found was quite low.

The students were interested in understanding how this relates to the work they have been doing, and we discussed that the improvement of the riparian area around the creek would most likely improve the health of the creek over time.

It was a great day, and although they were a different group from what Cass is used to (compared to her usual primary school kids) it was definitely a great learning experience for all involved. The environmental program coordinators were keen to keep collecting the data for Waterwatch into the future, and to give them a real measure of the benefits of all of the hard work the students have been doing in the area.



Jess helping to identify bugs



Cass showing the students how to collect bugs from the creek



The Frog Blog



Source: www.frogs.org.au

Our froggy enthusiast Mel Watts is now off on maternity leave. While Mel is off being a new mum, I will be doing my best to deliver the great support Mel has offered to frog monitors over the past few years! So if you're into frogs and have a recorder, and feel you need a refresher or would just like me to come and check out your froggy habitat, give me a call.

ARE YOU: interested in making your backyard frog friendly?

There are so many resources out there to help you attract frogs to your backyard, but the best one I have found is the Frogs Victoria <http://frogs.org.au/> website. Select the region you are in to bring up a list of common frogs for your area. You can check out breeding cycles, listen to frog calls and look at pictures of frogs that may be lurking in your backyard. Fact sheets for many species are available on the North Central CMA website www.nccma.vic.gov.au, or can be posted out by request.

WHY?

Frogs are important indicators of the health of our environment – they live in both aquatic and terrestrial environments and their porous skins make them susceptible to pollutants. Scientists have noticed dramatic declines in frog numbers in recent years, even in areas of little human impact. One of the reasons suggested for frog declines is a disease caused by the chytrid fungus, which can wipe entire frog populations out. Happy, healthy frogs may demonstrate a happy, healthy environment for us too!

There are over 200 frog species in Australia with different forms and behavior, requiring different habitats. Some frogs require permanent water; some prefer temporary pools, while others require streams and/or rivers. However big or small your garden is at home, you may already have frogs living there. Although most frogs need water to breed, they will spend the rest of their time out and about. By taking advantage of other habitats when they aren't breeding, frogs are increasing the size and durability of their populations, therefore needing a lot more diversity than just breeding habitat.

It is illegal to move frogs or tadpoles. This may be damaging to local gene pools and a removal of species even a few kilometers outside their home range can impact on other species in their local area.



Know your frogs

The best way to find out if you have frogs, or to find out what sort of frogs you have, is to go out at night and look and listen. The best time is just on dusk, especially after a rain event. You can check out your local creeks, dams and ponds as these are most likely places to find frogs after rain. You can use your mobile phone or a frog recorder to record frog calls at your sites (make sure you identify your sites in the daylight before heading out at night so you know where you are going). You can then use the Frogs Victoria website to identify your frogs, or call your local Waterwatch team on 03 5440 1863 to help.

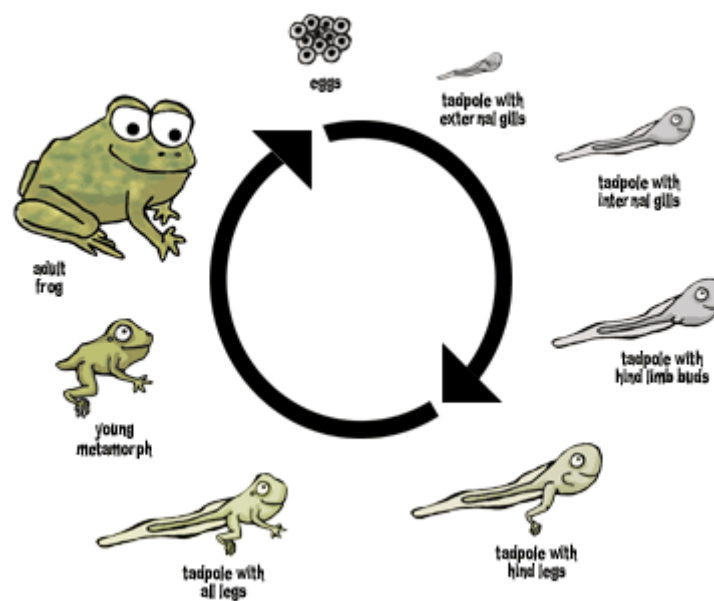
Try to ensure that your shoes and any equipment are clean, as tiny amounts of soil contamination can spread the chytrid fungus. Sick or dead frogs should not be moved to avoid spread, but could be collected in a plastic bag, sealed and disposed of in the rubbish bin.

Check out this site for more information about the chytrid fungus: www.amphibianark.org/chytrid

When you have identified what frogs you have in your local area, check out their breeding cycles so you can get your site ready to go before the next breeding frenzy... bonk! Take care if you are modifying an existing breeding site, so as not to disturb froggy breeding time. Use local plants where possible. If you are creating a pond it is best to find a site that is partly shaded as this will help in keeping the surrounding land moist while also providing warmer and cooler areas, allowing tadpoles to seek out their preferred temperatures. It is good to remember frogs like shallow areas when building your pond. In these areas semi aquatic and or bog plants are also preferred as frogs will use these as protection from predators such as water birds and fish. Frogs will also use these as areas for calling and depositing eggs. Don't forget that frogs can drown, so your pond will need a gentle slope for easy escaping! Pets and chemicals such as herbicides should be kept away, and don't be tempted to introduce fish as they may predate the frogs' eggs and tadpoles.

This is only a quick brief in the life of froggy ponding in your backyard; if you feel inspired by this you should visit the Frogs Victoria website and read more detail about frog friendly backyards! You could even start your own Urban Frogs Group and look at local wetlands that could use some froggy love'n... bonk! Waterwatch is keen to support frog monitors and anyone who is interested in taking further action!

Froggy life cycle



Special features

Farewell for now...

By Melanie Watts

Well it has come time to say a farewell for now...as I prepare for the arrival of our new little addition to our family. A very exciting time indeed!

Clearing out the cupboards, desk and inbox over the past few weeks has brought back many happy memories of the amazing people I have worked with and the projects that I have worked on in almost five years with the Waterwatch Program. One particular highlight of my work with schools was working with Natte Yallock PS on the creation of a river health claymation for the River Health conference. The claymation was developed by the students and teachers after a series of investigations into the Avoca River and its health. I was amazed at how well the students took on the messages that I shared with them to create such a fantastic animation. It's a must see. You can watch it at www.natte-yallock-ps.vic.edu.au/ under the 'Claymation' link. I think we can all take away some great river health messages from this.

Working on the frog program was always a lot of fun...especially when it lead to the discovery of new populations of threatened species! Thank you for your dedication to this program – the data you have collected (whether it was for a threatened species or not) has been provided to DSE for inclusion into the Victorian Wildlife Atlas.

I have thoroughly enjoyed my time with Waterwatch and am continually surprised by the enthusiasm of the community volunteers. I encourage you to keep up the hard work and commitment to monitoring changes to our waterways and biodiversity.

I will be taking 12 months leave to enjoy motherhood, but would like to continue contact with many of you. My personal email is aaronmelanie@harboursat.com.au so please keep in touch.



A message from our sponsors..

'Taps and Toilets' Water Systems Design Game

Story by Rob Krober

Coliban Water conducts an education program for all schools in its service region from primary through to tertiary level.

'Taps and Toilets' is an engineering role play activity which has become a core activity. Key concepts for the game complement the Waterwatch program.

Using small sections of coloured straws placed on a map, students work in teams to design three water systems for a hypothetical community.

Each student group must minimise costs and follow environmental planning guidelines while 'constructing' potable water supply, sewerage and recycled water systems.

Through this hands-on approach students gain a better understanding of the role of Coliban Water and the importance of transporting water through pipes to protect community and environmental health.

Arrange to have 'Taps & Toilets' conducted at your school by contacting

Rob Krober Education Officer ph 5434 1248 or Email robk@coliban.com.au



Cameron Hird, senior project manager with Coliban Water, discusses environmental, cultural and heritage considerations in placing pipes when designing water systems, with students from St Francis of the Fields Primary School

Please Note: Water Authorities in Victoria run their own education activities, if you are outside the Coliban Water boundaries you made need to check out www.vicwater.org.au for your closest water authority

Water authorities found in the North Central CMA region are; Lower Murray Water, GWM Water and Central Highlands Water.



What Bug am I?



I am a Scud (Amphipoda)
[Source: photobucket.com](http://photobucket.com)

Information and Partner Agencies

North Central Waterwatch
c/o North Central CMA
Contact Cass Davis
t: (03) 5440 1863
m: 0434 730 526

waterwatch@nccma.vic.gov.au or
cass.davis@nccma.vic.gov.au



CITY OF GREATER
BENDIGO



**Rochester Campaspe
Water Services Committee**



NORTH CENTRAL
Catchment Management Authority

Connecting Rivers, Landscapes, People

