

Upper Murrumbidgee Waterwatch

Dickson Wetland Nearing Completion

By Edwina Robinson

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The ACT Government is nearly done constructing an off-line wetland on the Dickson tributary of Sullivans Creek. The wetland will help improve water quality of Lake Burley Griffin. The benefits of retrofitting wetlands into urban areas include:

- ◆ water quality improvements including the uptake of nutrients and interception of sediments
- ◆ flood detention
- ◆ increased aquatic and terrestrial habitat in urban areas
- ◆ provide an oasis in the suburbs
- ◆ create new recreational, volunteering and educational opportunities
- ◆ supply stormwater to irrigate playing fields.

The project manager of the wetland design, Elliot Hannan from URS says one of the most common causes of poor water quality is suspended solids. Urban wetlands slow

the flow of water through the system allowing solids to settle, as opposed to fast flowing concrete channels. In addition, wetlands plants help improve the water quality by their uptake of phosphorous and nitrogen, removing these contaminants before the water is discharged.

The first Community Planting Day was held on 4 June 2011 with over 200 volunteers turning up to plant native grasses, reeds and trees. More than half indicated they wanted to become a member of the Dickson Wetland Carer Group.

Not only are the community excited about the wetland. Maned wood ducks eagerly await the end of the day when the site is closed and have shown preferences for mowing freshly planted *Juncus*, *Carex appressa* and *Lomandra longifolia*. The ACT Government and the landscape contractor are investigating ways of protecting around 20,000 plants with a combination of tree guards, flapping tape and protective netting.

Volunteers planting out the Dickson Wetland



ACT Environmental Flow Guidelines Available for Comment

The draft 2011 ACT Environmental Flow Guidelines are available for comment. *The Draft Environmental Flow Guidelines (2011)* set out the environmental flow requirements needed to maintain aquatic ecosystems in the ACT. *The Draft Environmental Flow Guidelines (2011)* are a revision of the 2006 Environmental Flow Guidelines, updated using scientific knowledge gained during the past five years.

Copies of the *Draft Environmental Flow Guidelines (2011)* are available from the Department of Environment, Climate Change, Energy and Water website at www.environment.act.gov.au, or from all Canberra Connect shopfronts. For further information please call the Canberra Connect on 13 22 81.

Written submissions on the *Draft Environmental Flow Guidelines (2005)* should be sent to: Environmental Flow Guidelines, Water

Resources Unit, Department of Environment, Climate Change, Energy and Water, PO Box 158, Canberra ACT 2601. Comments can also be emailed to WaterResources@act.gov.au or faxed to (02) 6207 6084.

Submissions close 1 August 2011



Stormwater ponds have a conservation role

Although natural wetlands have been largely replaced by stormwater ponds and other artificial water bodies in urban and suburban landscapes, the extent to which artificial wetlands function as breeding refuges for amphibians and other aquatic animals hasn't received much attention. While the total area occupied by stormwater ponds in urban environments can be significant, it's possible that their tendency to accumulate pollutants and to dry out periodically means that they act more like ecological traps than ideal breeding habitats.

To shed light on this issue, 71 suburban and forest wetlands in Maryland, U.S.A. were surveyed repeatedly for amphibian calls, egg masses and larvae over two reproductive seasons in 2007-08. The wetlands ranged in size from 12 to 59 ha. Six amphibian species - five frogs and one toad - were found. In both suburban and forested watersheds, most of the sites where amphibian

breeding activity was recorded were artificial wetlands, and late-stage larvae were found only in these habitats. Natural wetlands were relatively small in size and didn't hold water long enough to support amphibian development.

Although some urban wetlands may act as ecological traps, the results suggest that artificial water bodies can play an important role in amphibian conservation, and therefore that it's worth including ecological considerations in the design and management of stormwater ponds. Because permanent water bodies are rapidly colonised by fish and other predators, the value of artificial wetlands as amphibian nurseries is likely to be greatest when they retain water on a seasonal, but not a permanent, basis.

Reference: Brand, A.B. & Snodgrass, J.W. 2010. Value of artificial habitats for amphibian reproduction in altered landscapes. *Conservation Biology* 24 (1), 295-301.



Waterwatch Fridge Door

(All programs are free and open to the public.)

Macroinvertebrate Training

28 August, 2011 2pm

Murray's Corner, Paddy's River

Platypus Walks

6 August 2011 4:30 pm

Mittagang Rd. Cooma, NSW

3 September 2011 5 pm

Q Performing Arts Center. Queanbeyan

Rapid Assessment of Riparian Condition Training

17 September 2011 10:30am -2:30pm

Coppins Crossing

Macroinvertebrate Training

Join faculty from eWater for a macroinvertebrate training afternoon at Paddy's River. Trainers Sue Nichols and Evan Harrison will walk new bug watchers and seasoned old hands through identification and collection techniques.

Sue is a research fellow at the Institute for Applied Ecology, University of Canberra with particular interest in biological assessment of river condition. She has worked extensively on the development of the Australian River Assessment System (AUSRIVAS), which comprises of standardized macroinvertebrate sampling methods, predictive models, and software to assess the biological health of Australian rivers.

Evan is a postdoctoral researcher at the Institute for Applied Ecology, University of Canberra and manager of the freshwater ecology laboratory. Evan has played a central role in running the Institute's AUSRIVAS training program over the past 3 years. He has also been involved in studies investigating the effects of environmental flows on stream ecological condition in the Cotter River.

Bring your own waders and boots if you have

them – we have some class sets. As usual, wear warm clothes.

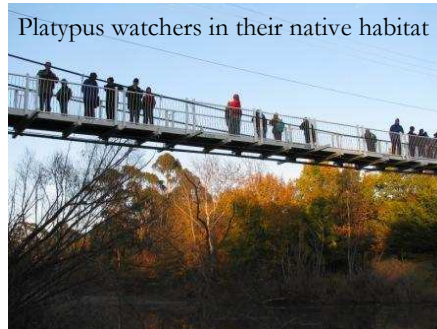
Waterwatch will provide hot drinks and a snack.

Platypus Walks

If you've been looking for a chance to see a platypus and learn more about these fascinating creatures, join Waterwatch Facilitator, Tanya Noakes for a guided walk two of the region's platypus hot spots, at Mittagang Rd. on the Murrumbidgee near Cooma, or deep in the wilds of urban Queanbeyan.

"Platypus are low-key, but not really shy. It's all about learning what to look for, and training our eyes, to see what's secretly going on right under our noses." said Noakes.

The program is free, suitable to all ages and physical abilities, and no booking are required.



Rapid Assessment of Riparian Health Training

All Landcare/Waterwatch members and anyone interested in riparian assessment are invited to attend this combined catchment event.

Leading the training this year will be Fleur Flanery, ACT's Urban Forest Program Manager. Learn to quickly assess riparian health and target works for the strongest benefit of biodiversity as well as take the opportunity to learn about the Urban Forest Renewal Program which will develop a plan and process for the replacement of the aging urban forest.

Places are limited and lunch provided so book early with Tanya Noakes by emailing her at tanya.rucoskynoakes@act.gov.au

News from the Cooma Region

Monaro High School students Conduct Riparian Assessments

by Antia Brademann

In April, the Monaro High School Environmental Group assisted Waterwatch by conducting riparian assessments (also known as RARC) along the Murrumbidgee River. This information is used to record riparian condition along our rivers and is an important indicator for identifying factors which may be contributing to river health. RARC assessments are repeated yearly to monitor change over time, and look at factors such as vegetation cover, levels of native vs exotic plants represent, habitat availability etc. The sites monitored by MHS students had never

been surveyed before and so the students have helped to gather important baseline data for the Waterwatch program on that part of the river. The students involved in this survey were fantastic and worked really diligently to generate some high quality data. Thanks to all those involved...Waterwatch would love to have you along to help again at anytime!!!

Numeralla River In-Stream Works Project

by Antia Brademann



A contractor has now been appointed by the Murrumbidgee CMA to carry out the in-stream structural works component of the Numeralla River In-stream Works project, which will see

erosion control structures put in place on two eroding stream banks on the Numeralla River upstream of the Kybeyan River confluence. The contractor will begin work at the end of June.

After the structural works are complete, the site will be revegetated over the coming months by the Numeralla Landcare Group, which is a partner with the Murrumbidgee CMA in this project. If you would like to participate in the revegetation works by coming along to a Numeralla Landcare Working Bee in spring, please contact Jim Wharton on 64533254.





News from the Cooma Region

Leaky Weirs Go in at Scottsdale



The catchment



The trench



Surveying the site



Building the weir

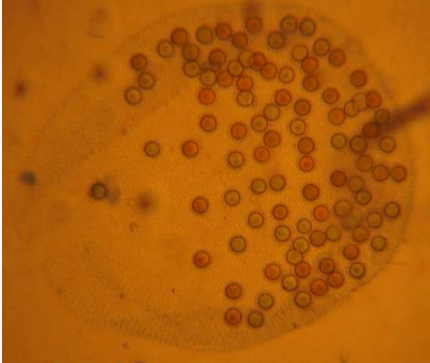


All done



Phytoplankton, the Unseen Oxygenators

By Stephen Skinner



The rafts of silkweed floating round the edge of some wetlands at present actually bring the dissolved oxygen level down. While much of the raft is healthy and happily turning sunlight and CO₂ into sugar and oxygen, parts of the raft are busy making ladders of spores for the winter. There are bacteria consuming the yellow sunburnt threads, chitrids are infecting the sugar rich ones and caddis and midge larvae are chewing and pooing their way through the raft. The net effect of all this activity is a **drop** in escaping dissolved oxygen from the rafts.

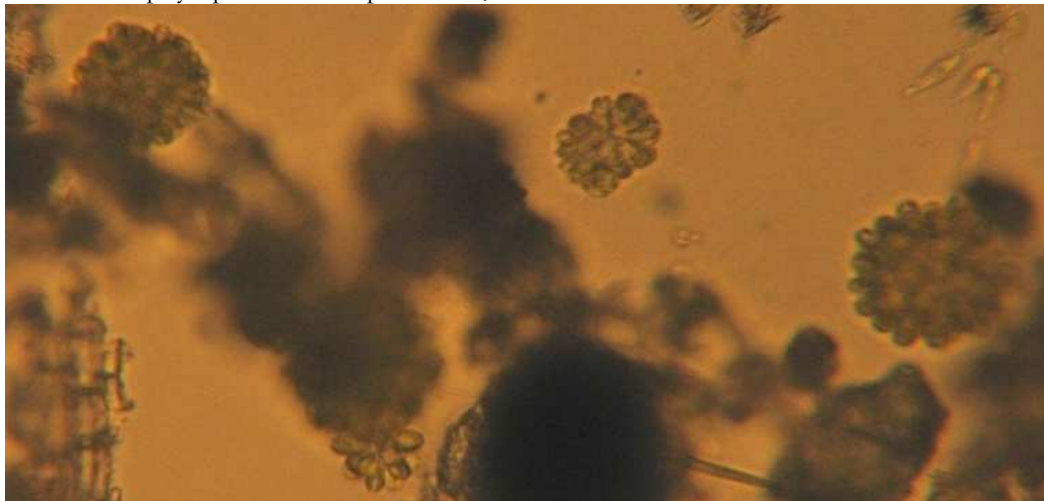
In other places, especially some of the other wetlands, but sluggish rivers and creeks do it too, in spring and autumn there is a flush of planktonic algal activity. These suspended producer organisms, called phytoplankton, are in their growing phase, and so produce more oxygen than they consume (for daily life or reproduction). The animalcules that feed on them, the zooplankton, don't yet have such large populations that they are using oxygen faster than the phytoplankton can produce it,

so just now, for no visible reason, many sites in the catchment have pleasantly elevated levels of dissolved oxygen, and the cooler water temperatures support its retention: DO is elevated, % saturation is up too.

Sometimes this flush is visible. The tea coloured waters of some of the pools in the rivers is a good indication that the golden green algae are present in significant numbers. *Synura* species are the most frequently encountered. Just too tiny to see, they may appear as golden brown streaks or clouds in a bottle of the tea coloured water left to stand in the sunlight. There are four clumps of *Synura* among the grit here.

More spectacular are the famous *Volvox* species. *Volvox* means the roller, and that is just what these balls of green cells do. They are around 1mm in diameter and you really can see them. They are common in Jarramlee Pond at Dunlop at present, and are often in Lake Burley Griffin. Are they in your part of the world? The one in the picture is full of spores for next spring.

Both *Volvox* and *Synura* are pursued and eaten by the tiny wheel animalcules or rotifers. There are even a few rotifers that have adapted to live within the *Volvox* spheres and wait for them to mature, and then eat them. Rotifers in turn are the food of the water fleas and other micro-shrimps, and so the chain of life goes on.



Platypus Page

Queanbeyan Platypus Recover After Flood

Queanbeyan's platypuses appear to have survived last December's severe floods with relatively few ill-effects. As the waters rose, displaced platypuses were observed in all sorts of unusual locations, including one swimming around the 16th tee of the golf course and another at the entrance to the Leagues Club, raising serious concerns for the population's survival.

Fortunately, the *Platypus Count* project administered by the Australian Platypus Conservancy in partnership with Upper Murrumbidgee Waterwatch has provided an excellent opportunity to study how this unique aquatic mammal copes after rivers are turned into raging torrents.

The good news is, that based on the data collected by the dedicated volunteers who watch for platypus (and Australian water-rats) along the river, the number of platypus and water-rat sightings made in the post-flood period (December 2010 to February 2011) were generally slightly higher than the number

of sightings recorded in the corresponding period one year earlier.

Australian Platypus Conservancy biologist, Geoff Williams, said that although the findings were very pleasing it does not necessarily mean that the flood had no effect at all. For example, some *Platypus Count* participants noticed changes in where animals were most likely to be observed, particularly in the first few weeks after the flood. This may reflect the fact that aquatic insects (the main platypus food supply) are more likely to be washed away at some spots than others. The post-flood quality of feeding sites may also change because of localised erosion or deposition of sediment.

If you are interested in becoming involved as volunteer in *Platypus Count* contact:

Telephone: (03) 5157 5568 Email:
platypus.apc@westnet.com.au or
tanya.rucoskynoakes@act.gov.au

Free Platypus Application

Platypus sightings have traditionally been forwarded to the Australian Platypus Conservancy by post, email or via the online reporting facility at www.platypus.asn.au.

Now, thanks to the help of Robert Ewing in Canberra, there is a new method – a platypus sightings app that can be downloaded for free at the following link:

<http://itunes.apple.com/au/app/platypus-sighting/id434192866?mt=8>





Fish Facts

What's Going on with those Gambusia?

If you've been involved in the gambusia surveying that went on last autumn, or have just been following our progress, here's what's happening.

We were pleased to see that the distribution of gambusia around the region is patchy, and tends to be associated with the level of access children have to the sites. That leads us to conclude what we've suspected, that children fossicking around in the waterways are moving gambusia. If your child brings home gambusia, be aware it is illegal to keep them in a tank. Please euthanize them humanely, do not return them to 'the wild.' Fish can be humanely killed by immersing them in an ice slurry bath.

We were also pleased to see that gambusia are very poor swimmers, and have a hard time colonizing up stream. Thus, if we can work them down a catchment and discourage re-introduction, we could actually clear and keep

clear, many of our urban ponds and dams. This is excellent news for our local frogs, many of whom are unable to successfully breed in ponds dirty with plague minnows.

Upper Murrumbidgee Waterwatch Coordinators are training now in the use of the nets, pending ethics approval, we will then be engaging with land managers, and taking on the removal of animals from all ponds found to contain gambusia last the autumn.



Illegal Fishing Reported

In June a contentious angler end removed a gill net from under the foot bridge at Yerrabi Pond.

Gill nets are prohibited in all states and territories in Australia and are exceptionally deadly to non-target species such as platypus and waterbirds. The net had over 30 fish in it predominantly undersized native Golden perch.

Hopefully, it is a one off but please be on the lookout of illegal fishing activity in the lakes and rivers as there are also reports of activity at night at Kambah pool and elsewhere on the Murrumbidgee with one angler reporting cutting a Trout Cod from a set line recently.

If you see any nets, please remove them and give Canberra Connect a call at 13 22 81.

Drowned platypuses in a gill net and opera house trap





Bits and Bobs on Birds

Ducks Threatened by Fish



thirteen Swedish lakes containing fish (mainly pike and perch) with those in twelve fishless lakes. The fishless state was due to low-oxygen conditions under the winter ice, or to periods of high acidity.

Lakes without fish supported higher abundances of invertebrate prey, more species of water birds, and higher rates of breeding success for two focal duck species

Although ecological studies on fish and birds have a long history, many aspects of the ways in which birds and fish interact remain obscure. For

(goldeneye and teal). Because duck breeding success was better predicted by the presence of fish than by food abundance, it seemed likely that predation was more important than competition.



This study shows that the population dynamics of lake birds and fish can be inversely linked, which means that management designed to assist one group can disadvantage the other.

Reference: Elmerg, J., Dessborn, L. & Englund, G. 2010. Presence of fish affects lake use and breeding success in ducks. *Hydrobiologia* 641, 215–223.

example, while it's been noted that the breeding success of ducks is often poorer in lakes with large fish populations than those without fish, the reasons for this have been unclear.

Two alternative explanations are that fish compete with ducks for aquatic food, or that fish take ducklings as prey. These possibilities were examined by comparing environmental conditions and invertebrate prey populations in



Upper Murrumbidgee Waterwatch

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What is Waterwatch?

Waterwatch is a national community water quality monitoring program that encourages all Australians to become involved and active in the protection and management of their waterways and catchments.

Who is Waterwatch?

Waterwatch involves local community groups such as Landcare, Park Care and Catchment groups, as well as residents, schools and landowners who regularly monitor the water quality of local creeks, wetlands, lakes and rivers.

Why monitor?

Healthy catchments produce healthy ecosystems with happy fish, frogs, birds, plants, macro-invertebrates and people. Waterwatch aims to create awareness of water quality issues by involving all members of the community and by forming partnerships between the Waterwatch group and water authorities, resources management authorities, business and industry.

First step

If you are interested in improving the health of your waterway and meeting or forming a group of like-minded individuals, you should begin by contacting your local Waterwatch Coordinator.

Making a difference

Water quality information collected throughout a catchment provides a picture of the health of your waterways. Waterwatch groups have initiated many positive, community based conservation activities such as creek restoration, willow removal, removing litter from waterways, eradicating weeds, development of habitats, and reducing the use of pesticides and other pollutants.

Waterwatch is proudly supported by:



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Sustainable Development



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Volunteers work for free
but not for nothing!
Our Vision—
Healthy Waterways

ActewAGL



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