

Catchment Update



2013

In General:

We live in interesting times for Waterwatch in our region. Two opposing forces are working to give me (and the other coordinators) a bit of a head ache. The shining pluses this year have been the terrific work of **Woo O'Reilly** and **Peter Brenton** to get all 4 Waterwatch networks on the Atlas of Living Australia (ALA) data base . We also had confirmation by **Dr Evan Harrison** of the University of Canberra, that our data correlates closely to the government collected figures. (You know this already thanks to Woo's 'Spring Newsletter', which of course you have *all* read from cover to cover. ☺). The ALA data base is still at the tailors getting the seams straightened and we (your smiling professionals) all appreciate your infinite patience.

On the down side, 'Waterwatch' has not officially been recognized as a priority by our federal government funding, as a result we are not actually being 'paid' to run the program. You are now part of an exciting underground black market network- (*now there's something to boast about at parties this Christmas!*). I'm putting in an order for balaclavas. Hopefully this situation will change. (*Late breaking news: The good folk at ACTEW Water have offered to fund some Waterwatch activities in the southern catchments next year.*)

The QA/QC field trip to Scottsdale had an impressive turnout from the southern crew. **Well done gang.** We had a great time on the river too.



The Murrumbidgee at Scottsdale's QA/QC event. Weren't there? Hope you're jealous. Photo: Woo O'Reilly

The way our data is synthesized to provide a health score in our catchments has also been reviewed with the help of the team at the Department of Applied Ecology at the University of Canberra. This has been quite involved and I will produce an explanation in a separate Catchment Health indicator Program (CHiP) report soon.

Here's the summary of measured parameters.



Winter:

Water Temp: Bogong Ck in Namadji NP got down to a bracing 0.6°C mid winter. McQuoids Dam on Westwood Farm was a warm bath by comparison at 17°C.(20°C in August).

pH: Westwood Farm had the only readings of concern this winter with caustic readings of 9.7 in both the dam and creek in June.

E.C: The only reading of concern this winter was Wanniasa Creek near Lake Tuggeranong (again). 1020µS. Although there are a few other sites around that have reasonably high readings as well. More below.

Turbidity: Most ponds, lakes and dams had high readings over winter. There were extreme spikes in turbidity in the lower Cotter and Paddy's rivers after some rain events. Murray's Corner scored an unprecedented 270NTUs mid winter.

Dissolved Oxygen: No readings of concern this winter.

Total Phosphorus: Ponds and dams were high as usual. The worst was Point Hut Pond with an extreme reading of 3mg/L in August. Higher than normal turbidity would not have helped this problem.

Nitrates and Nitrites: No readings of concern. The new Nitrate kits are now revealing much lower background readings in Nitrates right around the region than we previously recorded.

Algae: In early winter it was mostly diatoms benefiting from the low flows around the region. This trend continued through until late August when some high rain fall events seemed to flush the algae from many sites or just make it impossible to see through the turbidity.



Spring:

Water Temp: It's quite interesting. The urban bodies of water are up to 3 times warmer than the mountain streams at the start of September. By the end of spring there is very little difference between them, with the urban areas staying fairly constant over these months while the upland streams warm up.

pH: Westwood Farm got the gong again in October with a reading of 9.9 in the dam. This is a caustic as borax and may be the result of plant decomposition releasing ammonia into the dam.

E.C: No readings of concern this season.

Turbidity: The dams stayed turbid as did the urban ponds, especially Point Hut Ponds. Another massive spike in turbidity occurred at Casuarina Sands (80) and the Lower Cotter (30) after a week of solid rain in September. The same thing was seen in the Paddy's River. More on this below.

Dissolved Oxygen: There is a gross pollution trap in Monash at the north end of Isabella Ponds that is tested by Kath from the Lake Tuggeranong team. Twice during spring the readings were as I have seen. Her lowest reading was just 1.8mg/L. A stinky stew of rotting material.

Total Phosphorus: No surprises. The dams on Coleman Ridge (0.2mg/L), the urban lakes and Casuarina Sands all had higher than healthy readings.

Nitrates and Nitrites: No readings of concern.

Algae: A mixed bag this season. Many river sites had a good flushing removing all visible buildups of diatoms and other fringe forming algae. Other sites recorded persistent fringes of algae and other forms throughout spring.

Spring macroinvertebrate monitoring.

Signal 2 (macroinvertebrate) scores were generated for **20** sites. A big push by the Upper Murrumbidgee Waterwatch network this spring was to have as many sites and possible surveyed for macros in the lead up to our data handover and revised catchment health analysis. For this report rather than calculating an average each of the 7 sub-catchments I will give the best and worst scores for each, where available. Greater detail will be provided in the CHiP report.

Big 'thankyou's go to **Fiona Spier** and **Josh Moloney** for taking on extra survey duties as well as the enthusiastic Year 8 students from **Melrose High School's Ace program** and **Calwell High School's Yr 7's** for braving the monster leeches of Tuggeranong Creek



Best score



Worst score

Lower Murrumbidgee:

(Includes Murrumbidgee sites and tributaries from Uriarra Crossing to Casuarina Sands as well as the Cotter Camp ground site.)

A warm welcome to **Judy Middlebrook** and her son **Nick** from the **Canberra Ornithology Group (COG)** who have adopted Uriarra Crossing and have added Swamp Creek, a small tributary flowing in near the crossing, to the data base.

The Cotter Dam was completed in June and the Sands and Paddy's River teams reported some restoration work (planting and weeding) happening around the Cotter camp ground and at Casuarina Sands. Maree and Fleur even saw a pair of emus at the car park near the bridge.

Significant rainfall in early spring brought a turbidity spike to both the lower Cotter and Murrumbidgee. This cleared by October.



Wendy from 'Sands' demonstrating the correct water sampling technique.

While the completion of the Enlarged Cotter Dam made a huge increase to the ACT's water holding capacity the ESSD Minister Simon Corbell told the Canberra Times in August that '...we need to be wise about how we use water'. We have a net allocation of 40.5GL under the MDBA plan and most of this is returned via the Lower Molonglo Treatment plant. The more we conserve, the more freshwater can flow past Uriarra Crossing to dilute our treated effluence.

The completion of the project has apparently allowed planners to concentrate on water quality instead of just quantity. Waterwatch teams from SACTCG provided significant feedback on the draft water plan to this end, for the ACT back in August. Any actions, including improvements to the southern ACT's waterways are mostly beholden to moneys being made available by the federal government. (Fingers are still crossed and it's nearly Christmas.)



Casuarina Sands Signal 2 score=2.9 with 10 bug types. *'Suggests high salinity or nutrient levels(may be natural)'* Survey conducted by a large combined group from **Weston Cub and Joey Pack** and **Waramanga Girl Guides**.



Cotter Camp Ground Signal 2 score=5.7 with 5 bug types. *'Suggests toxic pollution or poor habitat'*

The fallout from the activity in the Cotter shows up in this comparison. The Murrumbidgee scores below show comparatively good water quality flowing down the main river. The scores for the Cotter River too show a distinct change before and after the dam. Both indicate a definite reduction in water quality as a result of the activities in Cotter avenue.

Upper Murrumbidgee:

(All Murrumbidgee sites up stream of the Cotter junction. Includes lower Gudgenby River site and all creeks and dams east of the Murrumbidgee not flowing into Lake Tuggeranong)

More new Waterwatchers joined our ranks since the last update. **Pauline** teamed up with Alan to briefly form a Point Hut Ponds group, monitoring either side of the lake. Unfortunately, as sometimes happens, she was drawn away by life's priorities. An investigation into the turbidity loads into Point Hut Pond revealed no smoking guns despite substantial construction works on a new aged facility near Gordon Primary School. The view of the EPA is that the small lake is simply inundated by sediment from the surrounding suburbs. Given the 'state of the art' stormwater system with its extensively vegetated profile I am surprised. It raises questions for me about storm waterways and urban wetlands and what the limiting factors are in how well they can affect water quality.

Bruce Gibbs, inspired by the wonderful Rhonda from Cuppacumbalong, has taken on two sites with his son at Castle Hill Homestead (Geoff Hyles place) near Tharwa. His aim is monitor any possible affects from a free range chook venture on the property. Happy chooks and hopefully a healthy creek ☺.

Westwood Farm was a different story. **Wieslaw** recorded horror pH readings in 2 separate occasions. Breakdown of organic material can raise pH but I suspect there was something else happening. The difficulty with one off spike events is that by the time this issue is investigated the source has become diluted and it can be nearly impossible to locate the cause. On going readings of concern are easier to trace, but then of course often the 'source' of the pollution is vast as was the case with turbidity issue in the Murrumbidgee during the last drought.

The Murrumbidgee on the whole is a clear and healthy river at the moment. The Macroinvertebrate survey conducted by Melrose High School found a good number of stonefly larvae. This is the first time I have seen them in the 'bidgee.



Bruce Gibbs (at right) and some bloke admiring their reflections.

A good course of action for Waterwatchers when you encounter an unusual reading is to;

- 1. Double check your reading, (which of course you all do). Check the calibration of meters. Wash glass wear thoroughly with hot water and retest.**
- 2. If you are still getting odd readings collect a sample of the water (I have plenty of vials here) and get it to me the same day. If this cannot happen, freeze the sample.**
- 3. Email me asap. Don't wait until you have time to upload the data. This may be weeks after the event.**





August was also **Platypus month**, and almost on cue a dead one was removed from an enclosed trap at Kambah Pool by PCS rangers after a report by a 'keen fisherman'. Less news worthy but equally distressing were the 3 Murray Crayfish that also perished in the same trap. One was estimated to be up to 40 years old.

Many articles appeared in the media around this and our Woo O'Reilly even spent an entire day with 'Tim the Yowie Man' for his feature in the Canberra Times.

A weekend workshop was hosted by the CVA at Tidbinbilla with guest presenter Geoff Williams from the Australian Platypus Conservancy.

Waterwatchers are always encouraged to spend time looking for these little guys, completing a survey and keeping an eye out for those awful traps.



Saving our wildlife from death traps

Photo and Headline: Canberra Times 22.August



Pine Island Signal 2 score=6.1 with 8 bug types. *'Suggests good habitat and water quality'* Survey results from **Melrose High School's** advanced Yr 8 science. They really got into the river, wet sneakers and all, to produce a comprehensive survey. Their attention to detail was also refreshing.



Point Hut Crossing Signal 2 score=5.2 with 8 bug types. *'Suggests high salinity or nutrient levels(may be natural)'*

Tuggeranong:

(Tuggeranong Creek and all storm waterways flowing into Lake Tuggeranong.)

Caroline conducted a study of the lake for CIT this period and produced some terrific maps and graphs of data collected around Lake Tuggeranong. A study into Lake Tuggeranong's relationship with ground water was also conducted by ANU Student, **Yushan**, this period. She referenced a study by our own **Julia Banks** in addition **Ian Lawrence** and others and found evidence of ground water pollution occurring via the urban stormwater system. This has implications for how effective the lake is as a barrier to pollution into the Murrumbidgee river.

Development work began on the Greenway Lakeside Development opposite Bunnings Warehouse. Debate has ensued about what trees they plan to plant (deciduous vs native) and how interested the developers will be in being part of water quality improvement actions around the lake. The Tuggeranong Lake Carers group have grown in size recently after a flurry of media activity around the looming threat of our old friend blue-green algae this summer. They are planning a suite of activities for the coming year.

Speaking of action, below is a photo of an hour or so work by **Lake Tuggeranong College's Sustainability Unit** students. 13 trolleys in a 500m stretch of lake foreshore. They undertook Platypus Watch, Frogwatch surveys and participated in a clean up day this year in their own time. Frogwatch was conducted at 3 sites, 3

times during the census by the group. Data is available at www.ginninderralandcare.org.au



2 GPT's at either end the lake produced high EC readings regularly over winter and spring. **Kath's** site on the northern end of Isabella Pond produces EC readings as high as Wanniasa Creek.



Andre, Shaylee, Rhonda and Daniel. LTC



Upper Tuggeranong Creek Signal 2 score=4.1 with 7 bug types. *'Suggests pollution'*
Survey conducted by **Calwell High School** students from J Ackerman's Yr7 class.



Lower Tuggeranong Creek Signal 2 score=2.7 with 6 bug types. *'Suggests pollution'* Yep.

Cotter:

(All sites on the Cotter River upstream of the Cotter Camp Ground.)

Willow from ACT PCS has picked up the sites left vacant after the cessation of the Yurung Dhaura program. This is terrific news as it means I will have some thing to report under this heading!

Josh Moloney and I went and conducted macroinvertebrate surveys at Vanity's Crossing and under the Cotter bridge. An exciting (if, like me, you find these things exciting) find was a **horsehair worm**. First ever for me and I am surprised at how big it was. It looked like a small plant root slowly squirming in the tray. It took Josh's good eyes to spot that it was in fact some sort of animal before we cracked open the book.

Look at the difference between Vanity's Crossing macros results and those of the Cotter river after the bridge.



Horsehair Worm, Vanity's Crossing.



Vanity's Crossing Signal 2
score=6.0 with 9 bug types. *'Suggests good habitat and water quality'*



Cotter Bridge Signal 2 score=4.8
with 8 bug types. *'Suggests high salinity or nutrient levels(may be natural)'* (or caused by a huge lump of concrete wall.)

Daddy's:

(Includes Daddy's River, Gibraltar Creek in Corin Forest and all sites in the Tidbinbilla Nature Reserve)

As illustrated in my previous update much of the Paddy's river's upper reaches continue to suffer from soil erosion from massive washouts high in the catchment on private property. This was evident again in spring as some good rainfalls brought high flows down the river. **Fleur and Maree** saw 50NTUs flow past Murray's Corner in September. A stark contrast to the other creeks and rivers that form part of this sub-catchment.

Landslips on the Corin Road stopped access to the Gibraltar Creek sites for **Miranda** and **Liam** from October.

The Paddy's River catchment had the greatest number of macroinvertebrate surveys completed (6) for any of our sub-catchments this spring. Thanks to the Paddy's River group, Friends of Tidbinbilla and the Stream Team for their terrific response to our call to arms.



Murray's Corner, September 2013



Murray's Corner October 2013 Photos: Fleur Horan



Woods Reserve Signal 2 score=6.8 with 7 bug types. *'Suggests toxic pollution or poor habitat'*
This is a little unfair as it is one 1 bug off a good score.



Paddy's river at the Tidbinbilla Rd bridge Signal 2 score=6.5 with 6 bug types. *'Suggests toxic pollution or poor habitat'*

As you can see, here is not a lot between these scores. The scores for Tidbinbilla and Murrays' Corner all fall closely within this range.

Gudgenby:

(Includes all creeks and streams flowing into the Gudgenby River. Most sites are in the Namadgi National Park).

I had the considerable pleasure of baby sitting **Chalkies** sites in July. It was good to see Hospital creek was still a large boggy field. The photo below shows a sheet of ice covering the water on Bogong Creek. Water temp was 0.6°C. The Frogwatch survey this October showed a big decline in many species this year. Strangely it was common eastern froglettes that were conspicuously absent. **Martin** recorded good water flows and levels in his spring excursions.

Outwardbound Australia also had a burst of school activity over spring in the region as well as at their sites on the Murrumbidgee, with **Pabitra** submitting reams of valuable data for Honeysuckle creek and the Orroral river in this catchment.



Ice sheet on Bogong Creek, Namadji NP in July



Gudgenby river at the Naas Rd bridge Signal 2 score= 6.0 with 8 bug types. ‘*Suggests good habitat and water quality*’

Thanks to **Fiona** for assisting with this survey. This is possibly the best score for this site. Maybe the farmer has finally kept his cows out of the river?



Hospital creek, lower site Signal 2 score=8.7 with 5 bug types. ‘*Suggests toxic pollution or poor habitat*’

Martin suggested high flows may have sent some of his bugs down stream. Maybe that’s why the score above is better, hey Martin?(tehe)

Naas:

(Includes all creeks and streams flowing into the Naas River).

A quiet couple of seasons saw no Waterwatch data collected for this sub-catchment.



Caloola Farm Signal 2 score=5.8 with 7 bug types. ‘*Suggests toxic pollution or poor habitat*’

Thanks again to **Fiona Spier** for assisting with this survey. Once again we were only one bug off an acceptable score, so this rating maybe taken with a pinch of salt (or phosphate or cow dung).

A huge thank you to all those groups and individuals involved in collecting data for this update. Waterwatch volunteers provide vital and immediate information on the state of our waterways which is being increasingly used by government and corporations locally and nationally. For more information contact the SACTCG Waterwatch Coordinator on 62966400 or at waterwatch@sactcg.org.au

Martin Lind.

