

January 2015 in our Catchment.

As promised we now have over 4,000 Waterwatch records from the Molonglo catchment! That is a very sizable chunk of data and we should all be proud of our part in this. The long term benefits of this monitoring are so important to help us identify changes and trends, and improve catchment health over time.

Apologies for noting last month that the Molonglo River at the Travelling Stock Reserve (MOL109) north of Captains Flat had no flow. This was clearly wrong: a moment of madness¹. The flow at sampling time was medium.

January had very similar rainfall and evapo-transpiration figures (see more below) to December, and all in all it has been an unusual summer so far with relatively cool weather and good rain, following a hot November. Of course, the rain is hit and miss, and some may only see the effects of rain falling higher up in our catchments.

At the time of January sampling, the drainage lines of Weston Creek and East O'Malley had no flow, nor did some of the small creeks. However, many rivers and creeks had high flows or showed evidence of recent high flows. A well vegetated catchment, with intact native forest, will be impacted much more slowly by high rainfall, so flows will more gradually increase and decrease and the effects of rain will increase flow for longer because the catchment acts as a sponge, soaking up water and releasing it gradually. In contrast, in "disturbed catchments", including urban areas and land cleared for farming, flows tend to peak higher, be shorter in duration, and quickly go back to low or no flow because there are more hard surfaces, with a reduced ability to soak up water.

Well vegetated areas, such as around the Queanbeyan River near Urila, mean that even when the river is in flood, turbidity will remain low, or will quickly return to clarity after rain.

Eddison Park pond and Telopea stormwater drain both had a pH well over 9, which would be alarming in more natural waterways, but here probably indicates "concrete contact time" again. And, as always, the usual suspects (Kelly's Swamp and Stony Creek for natural reasons) had very high electrical conductivity readings. All the highly urban catchments also had high ECs.

The only sites with unusual readings were 2 sites on Woolshed Creek, which had particularly low dissolved oxygen saturation. The low flows and lack of algae may be sufficient explanation for this. In contrast, Eddison Park pond and Telopea stormwater drain both had extremely high DO saturation and high algae abundance. Eddison Park's Waterwatcher recorded frogs there again in January, which is great.

A highlight for me in this month's data was finding out from the notes in a Waterwatch record about a congregation of 100 or so yabbies at a Waterwatch site. And John is hoping to identify the small fish which were not behaving like [introduced] *Gambusia* ("too streamlined and ... moving individually in the fast flowing stream"), so may well be native galaxias.

Waterwatch improvements and more information

We are continuing to improve our quality assessment and quality control processes, and in the future you will see a revised water quality monitoring manual which will include best practices from across the 4 catchments in the Upper Murrumbidgee Catchment. It will have some refined procedures, and good background information about each parameter we measure. We are also reviewing some of our equipment and tests, but I don't know what the outcome will be from that yet. Anyway, it's all part of a review that will result in clearer, more straightforward instructions for Waterwatchers for all tests, consistency across the 4 catchments, and more robust Waterwatch data - though it is pretty good already, as the University of Canberra study showed!

¹ *Madness combined with downloaded data that you need to be careful with. If you ever want to download data from the ALA website, ask me for the guide I wrote. The site location changes when you sort the data, unless you know how to get around it.*

But we need your help...

Can you please tell me what meters and test kits you are using (I will keep a record from now on). I need the full name on the box or meter, and any code it has on it (generally only the ones in big letters are relevant).

The reasons for this are: to help us to standardise and to work out what our error rates are. Some older meters or older kits will have different allowable error rates and, for example, if the Waterwatch allowable error rate is + or - 10%, and a meter is plus or minus 6% that doesn't leave much room for calibration solution "error" and user differences!

SO there are several ways to get your meter and test kit information to me: you could ring me up and read it out to me, or email it to me, or you could drop into the office with your kit and I will record it. I need the full name on the box or meter, any code it has on it (generally only the ones in big letters are relevant). Please provide as much information as possible. Thank you in anticipation!

And your reward is...

Well it's not exactly a reward, but it is the long awaited Catchment Health Indicator Program report, or CHIP report, which was finally released yesterday. This is OUR REPORT and it summarises information about water quality and catchment health in each "reach" of the Upper Murrumbidgee Catchment, including the sites that you sampled. The CHIP report is available for [download from the Upper Murrumbidgee Waterwatch website](#) (📎 3,088KB). Note that on the catchment map for each catchment (Molonglo, Southern ACT, Cooma and Ginninderra) the page number beside each reach is a link directly to the page which reports on that reach. Reaches with insufficient data have generally not been included.

RARC is coming

Although this sounds like a disease or new government scheme, as many of you know RARC stands for Rapid Assessment of Riparian Condition (or slight variations on that wording) and we plan to do RARCs at all our Waterwatch sites over the next 2 or 3 months. RARC provides another measure of site and catchment health, by looking at the habitat around the waterway, and lets us compare sites and monitor changes over time (we plan to do them every 2 years). They can show the need for improvements, or conversely the great benefits that arise from improvements in riparian condition. When combined with water quality assessments and waterbug assessments, they provide important and related information about our waterway and catchment health. Bare ground erodes readily and turns water murky, healthy native vegetation supports a lot of life, and these "conditions" are generally reflected in the waterbugs and water quality.

If you would like to be involved in doing RARCs at your Waterwatch site (or join us to do them at several sites), we would love to have you along. They are quick and easy when you get the hang of them, and Dan Starrs has produced a "cheat sheet" that makes it easy to do the RARC without lugging around a manual or wondering exactly which rule applies for each bit of the assessment. This all sounds rather dry but it is interesting and fun, and will be great to do with you, if you're interested to. Please let me know if you prefer a weekday or can only make it on the weekend, and I will try and come up with a schedule and suggest some dates for each area. I look forward to hearing from as many of you as possible.

Did you know?

The Molonglo Gorge was carved by the Molonglo River as the rocks were uplifted around it, beginning around 10 million years ago. Most rivers carve their way down over time, or get redirected as the geology changes, but the Molonglo River managed to hold its own whilst the surrounding area was slowly being uplifted by a rising fault block, and the Molonglo Gorge is the result. The other results of that tectonic uplift were the small mountain range called Cullarin Range, and Lake George, formed from a smaller river which failed to cut through and was effectively dammed.

Other News & Events

Spill in Queanbeyan River

I'm sure many of you would have heard about the fuel spill into the Queanbeyan River near the art

gallery on the 22nd January, from fuel leaking into a stormwater drain. The source of the spill was never found.

Queanbeyan Fire officers, Fire and Rescue ACT, Queanbeyan City Council, the EPA and Queanbeyan State Emergency Services were all involved, a road was closed for several hours, and floating booms were put in place to soak up and stop the spill spreading. The NSW EPA said “[petrol or diesel] in storm water can cause environmental damage and impact adversely on any ecology or animals that come into contact with it.” (*news story in The Queanbeyan Age*: www.queanbeyanage.com.au/story/2835979/source-of-queanbeyan-river-chemical-spill-remains-unknown/?cs=1529)

While this is a fairly extreme case for our region, it is a reminder that anything that goes onto roads or carparks or down the stormwater drains ends up in our waterways. Every cigarette butt, plastic drink bottle, dog poo, oil leak, and take away food wrapper. If you see someone dropping something, maybe you could remind them. I’m trying to get braver about doing this because I’m sure many people don’t actually realise that’s what happens to it. **“Drains are just for rain”**.

Drains are just for rain

From the NCA website, which targets only Lake Burley Griffin, but of course applies to all our waterways:

“Tips to improve water quality include:

- Wash your car on the grass. Do not let the soap enter the drains, or use a water-recycling car wash facility. Phosphates from detergents encourage algal growth. [OR don’t wash your car, let the rain do it]
- Do not flush chemicals or paint into stormwater drains. This means fresher water for fish, birds, frogs and for everyone else.
- Prevent leaves and grass clippings from washing down the drain. Use smaller amounts of fertilisers and garden chemicals.
- Put rubbish in bins, paper and plastics in the recycling and do not throw cigarette butts in the gutter. This helps to keep streams and beaches clean.
- Clean up after your dog. Animal waste promotes harmful bacteria in the water.
- Compost garden waste and use it to improve garden soil. Green waste when released into the waterways results in algal blooms.
- Clearing gutters and raking up garden waste to prevent them being washed down the drains.”

(from www.nationalcapital.gov.au/index.php/whats-on/2893-lovelbg-this-summer)

And if you ever see paint, oil or something else that’s noxious going onto a road or into a stormwater drain, please report it immediately:

- Canberra and the ACT: call Canberra Connect on 13 22 81 or (02) 6207 5111.
- Queanbeyan and surrounding NSW, call your local council:
 - Queanbeyan City Council on (02) 6285 6000 or on their after-hours emergency hotline (02) 6298 1234.
 - Palerang Council on 1300 735 025 (after hours too) or (02) 6238 8111
 - Cooma-Monaro Shire Council on (02) 6455 1777 or on their after-hours emergency number 0419 256 323

You can also contact the Environment Protection Authority:

- ACT: EPA are contacted via Canberra Connect on 13 22 81
- NSW: 131 555 or (02) 9995 5555

BOM does it again

As a follow up to the Australian Groundwater Explorer website mentioned in my last newsletter, there is another great new Bureau of Meteorology resource, this time giving us evapotranspiration figures

for sites across Australia. You can see daily and monthly figures and maps, and look at historical data www.bom.gov.au/watl/eto/tables/nsw/daily.shtml. Click on the location (Canberra Airport is our closest) to see the current month's figures and to download previous months and years.

From the BOM website: "Evapotranspiration is not the same as evaporation. Evapotranspiration is the term used to describe the part of the water cycle which removes liquid water from an area with vegetation and into the atmosphere by the processes of both transpiration and evaporation.

Evaporation occurs when liquid water is converted to water vapour and hence removed from a surface, such as a lake, soil or wet vegetation, into the air. Transpiration occurs when water in plant tissues is lost to the atmosphere, predominantly through the small opening in the leaves of plants and grasses called stomata." You'll find figures for rainfall and evaporation (in earlier years only) included in the tables as well.

I'm interested because of the impact the weather has on our waterways, but also because many of us plant trees and shrubs and have vegetable gardens and this can help us look after our plants. For instance, in January 2015 Canberra Airport had almost twice as much evapotranspiration as rainfall (97mm and 172mm respectively), with very similar figures for the previous month, but this is quite unusual for summer. I guess you don't need these BOM figures to know that! But in contrast, in January 2014 there was 4.8mm rainfall and 226.7mm evapotranspiration! No wonder our plantings were so stressed early last year and the tomatoes were wilting.

We are lucky to have these fantastic resources so readily available.

Climate, weather and Waterwatch

From the Bureau of Meteorology website:

"Climate is what you expect; Weather is what you get.

Climate is about long-term records, trends and averages;

Weather is the day to day experience.

Climate is the sum or synthesis of all the weather recorded over a long period of time. It tells us the average or most common conditions, or extremes, or counts of events, or frequencies. Weather is a description of conditions over a short period of time - a "snap shot" of the atmosphere at a particular time."

You can apply something similar to Waterwatch. Each Waterwatch record gives a snapshot of water quality at a specific time and place (and it may detect an immediate problem that we can fix), and sampling on the same weekend gives a snapshot of the Molonglo Catchment. But the 4,000+ Molonglo Catchment Waterwatch records provide the trends and averages. So, at the risk of repeating myself: the long term benefits of our Waterwatch monitoring are so important in helping us identify changes and trends, and improve catchment health over time.

Thanks for getting out there and doing it.

Deb Kellock, [Molonglo Waterwatch Coordinator](#)

The operation of the Molonglo Catchment Group is assisted by the Australian Government's Caring for our Country and the ACT Government

The Molonglo Waterwatch program is part of Upper Murrumbidgee Waterwatch and supported by the ACT Government.