

## February 2013 in our Catchment

Australia Day was a bit of a shock, and we have had the occasional shower since. We are still not really getting anywhere near average rain, and the weather certainly hasn't slowed down the evaporation rate. I do hope we get some good storms, or even a few wet days between now and the equinox, because this is a very dry autumn so far after a dry summer and a very dry spring.

At a recent meeting between Waterwatch and ACT Environment Protection, guidelines for reporting water quality incidents were reinforced, and will be presented in the coming Upper Murrumbidgee Waterwatch Newsletter. Please take the time to read them when they come out. Much the same applies to incidents in New South Wales.

Once again we have plenty of polar fleece sleeveless jackets (waistcoats, jerkins... what you will) in black or navy for you. There is a range of sizes, but it is first come best dressed. Come in and get yours!

### Your Results

Parameter	Where it comes from	How it affects things	Local events
Temperature	Sunlight and flow give a waterbody its temperature	High temperatures allow the water to lose dissolved gases; low temperatures may upset the rhythm of water life	
pH	The country rock is largely responsible for water pH; acid over granite or sandstone, alkaline over basalt or limestone	pH helps keep the main minerals dissolved in the stream or pond; too acid, too much sulfur; too alkaline too much phosphorous	In the Tallaganda State Forest behind Rossi the pH is rather low at 6.0.
Electrical Conductivity	The ground water and soil determine the EC	Limey soils are naturally more conductive, more dissolved CO <sub>2</sub> ; waterlogging also increases mineral content.	Although the bottom of Sullivan Ck is in range, the EC in the Carwoola area, Burra Ck, Reedy Ck and Yarralumla Ck is elevated as usual, and high all along Jerrabomberra Ck. The creeks in the Googong area also show elevated EC, for the same geological reason as the Carwoola ones. Woolshed Creek is very elevated below the inflow from Doughboys Ck, and remains high to the Lake.
Turbidity	This is how much light can penetrate the water.	Silt and dissolved humus change turbidity	Eddison Pond still had muddy water; Watson Wetland looked muddy and sad after the rain!
Oxygen Saturation	Oxygen gets into water through flow, wave action and plants growing.	More than 120% saturation causes embolisms in animals, big or small; below 60% and it is hard for things to breathe.	Whiskers Creek almost at the mouth must have a very active decomposer industry as the oxygen saturation is well below living standards. Something similar may be going on at the mouth of Gorge Ck in Wickerslack Lane.

Parameter	Where it comes from	How it affects things	Local events
Phosphorus	Phosphorus is found in small amounts in disturbed soil; the other source is fertilizer.	Every cell needs P to carry its Oxygen: excess leads to rapid growth of planktonic algae.	Sullivans Ck at Toad Hall, and near the Union has a very high P load, but it is almost gone by the time the water is ready to enter the lake. There is also a recently developed sludge island at Toad Hall.
Nitrate (NO <sub>3</sub> <sup>-</sup> )	Animal droppings and fixation by cyanobacteria and root nodule organisms	With P excess promotes plant growth	
Algal Growth	Most algae, planktonic and benthic, are seasonal; blanket weeds are perennial	Smothering and blooms interfere with biodiversity	Yandyguinula Ck at Resch's Ck gate has blanket weed again
Ferals	Introduced fish	Gambusia and European Carp outcompete the locals	Eddison Pond has a high population of Gambusia, and they are doing well in the Retention Pond in Justice John Hope Park.

For all the worries with the North Watson ponds, it was good to hear that the Frogs thought spring had come again along Roma Mitchell Crescent.

### **The Frogwatch Census for 2012, and its implications for indications of Catchment Health.**

The two *Crinia* Froglets, the Striped Marsh Frog (*Limnodynastes tasmaniensis*) and the Orange Groined Frog (*Uperolia laevisgata*) are all reported from all nine sub-catchments in the Molonglo Catchment that were monitored in October 2012. Pobblebonks (*Limnodynastes dumerelli*) and Maniacal Cackling Frogs (*Litoria peronii*) were absent from Coppins sub-catchment and Burra Sub-catchment respectively. Spotted Marsh Frogs (*Limnodynastes peronii*) were reported from around Lake Burley Griffin, in Sullivans and Jerrabomberra Creeks, and the Lower Queanbeyan River. Whistling Tree Frogs (*Litoria verreauxii*) were heard in Jerrabomberra Creek, the Kowen Carwoola area and the Upper Molonglo valley.

The Jerrabomberra Creek sub-catchment, which includes Royalla, the township of Jerrabomberra, the Wild Dog Creek valley from above Rose Cottage to below the Mugga Lane Tip and the edge of South Canberra around Narrabundah and Jerrabomberra Wetlands, provides a wide range of habitats, including rural dams and urbanised creek banks, and has the largest number of frogs this year, all eight common species. In a dry year, without soaking rain it would have been surprising to encounter the ninth spring calling local frog *Neobatrachus sudelli*.

There were quite a few evenings when the frogs were loud and numerous enough at some sites as to score 1 or Excellent, for frog habitat. These sites were in Jerrabomberra Ck, the lower Queanbeyan, the Kowen Carwoola area and the Upper Molonglo. Best site of all in 2012 was the dam on the Hodgman place, in the hills towards Captains Flat.

Two sub-catchments improved in indication of health, judging by the frogs, from 2011. Sullivans Creek had rather fewer visits that reported no frogs calling this year, especially round the ANU, and improved from 4.6 to 3.8 in the Moderate range. Jerrabomberra Creek showed a distinct improvement from moderate (3.1) to well within the Good range at 2.6. Burra was the only sub-catchment where lower frog activity was reported, a drop from a good 2.8 to a Moderate 3.4, and may have felt the effects of little or no spring rain more than other areas.

	<i>Crinia parinsignifera</i>	<i>C. signifera</i>	<i>Limnodynastes dumerilii</i>	<i>Limn. peroni</i>	<i>Limn. Tasmaniensis</i>	<i>Uperalia laevigata</i>	<i>L. peroni</i>	<i>L. verreauxii</i>	Totals	2011 score	2012 score
Coppins									5	3.2	3.5
Weston Woden									6	3.8	3.9
LBG									7		3.4
Sullivans									7	4.6	3.8
Jerrabomberra									8	3.1	2.6
Fyshwick Woolshed										3.5	
Lower Qbn									7	2.8	2.6
Kowen Carwoola									7	2.6	2.2
Upper Molonglo									7	2.0	1.8
Burra									5	2.8	3.4
Upper Qbn											

### Calendar

Sunday 3 <sup>rd</sup> March	Clean-up Australia Day	Your local Landcare
16 <sup>th</sup> and 17 <sup>th</sup> March	Waterwatch Monitoring	Your sites
Sunday 28 <sup>th</sup> April	QA/QC	Lake Ginninderra

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<sup>1</sup> The operation of the Molonglo Catchment Group and Waterwatch program is assisted by the Australian Government's Caring for our Country and the ACT Government. Some administrative assistance is provided by the Australian Government's GVESHO program.