Catchment Update Summer 2010

Starting this year I will be producing a quarterly update for Waterwatch teams around our southern catchments. This will appear (hopefully) at the end of each season and give teams an idea of broad water quality issues in our region. On a local scale we work within the 7 identified 'sub-catchments' listed below. The ACT government combine both the lower and upper Murrumbidgee R catchments into the 'Murrumbidgee Headwaters' title, while on a national scale we are all part of the same 'Upper Murrumbidgee' catchment.

Most groups are in contact with others monitoring in the same catchments. This does chop and change, so I will put together a 'who's who' in our region on a separate sheet. I will update this on a needs basis.

In General:

A new data recording system was implemented from January 2010 and this included regular simple monitoring of nitrates and nitrites, as well as a new system for recording algae. There are some parameters that have pretty constant for our whole region and have not shown any particular anomalies this summer. These included:

E.C: Salinity readings were all well below 1000uS around the whole region.

pH: This varied little between 6.0 to 9.0 which is neither too acidic or caustic.

Phosphates: Generally well below 0.1mg/L (acceptable level) at most sites.

Nitrates and Nitrites: All sites recorded levels well within acceptable levels. Combined with the low phosphate readings this indicates an acceptable organic loads in our waterways.

Dissolved Oxygen: Oxygen concentrations measured this summer were almost all above the accepted minimum (4mg/L). Readings above 100% indicate water that is 'supersaturated' with oxygen. A number of things may cause this. The most likely in our circumstances will be the photosynthetic activity of algae present in large numbers during summer. The samples showing very high readings were also almost all taken in the middle of the day, when this photosynthetic activity is at its highest.

Lower Molonglo:

We only have one site in this catchment at Coppins Crossing. Data for this site is also shared with the Molonglo Catchment Group. In December the flow at the crossing was minimal. This, unfortunately, is all too familiar for all of us. A bug survey also reflected the effects of low water levels.

Figure 1 Coppins Crossing Dec 09

Lower Murrumbidgee:

This includes all sites down stream from the confluence with the Cotter River. Data from northern most sites is also shared with the Ginninderra Catchment Group.
This summer saw the completion of new recreational facilities at Casuarina Sands by Actew. Concerns had been raised by Waterwatch volunteers about the welfare of the local wombat population and assurances were given by PCL Rangers that a successful relocation plan was in place. Access to the site was also investigated so that monitoring could continue. This was seen as especially important with landscaping and construction work about to begin.
Unacceptably high turbidity levels have been typical here for most of last year, and this problem is shared all the way upstream to the confluence with the Numeralla River, south of Bredbo. Interestingly a 'spike' in organic nutrient readings occurred this summer that did not occur up stream. This dissipated by March.

Upper Murrumbidgee:

This includes all sites south of the Cotter confluence. It also includes farm creeks and dams along the Murrumbidgee corridor in the ACT and the sub-catchment of Conder Creek, its wetlands and ponds at Point hut Crossing. There are also a number of properties on the Murrumbidgee River south of the ACT that are part of our network.

Figure 2 Kambah Pool Dec 09

Extreme turbidity loads have plagued the Murrumbidgee River for over 12 months. Much investigative work was carried out by ACT Waterwatch, ActewAGL and NSW authorities in 2009 to find the source, which was identified as diffuse erosion pollution in the Cooma/Monaro region. There was some good rainfall in January and February but any flushing effect has only begun to occur since March. An extreme B/G algae alert level was issued for Kambah Pool and other sites in Tuggeranong in mid February by DECCEW.
The tributaries in the ACT that directly feed the Murrumbidgee, e.g. Conder and McQuoid's Creeks do not share the same turbidity issues and remain in comparatively good health.

Figure 3 Julie, Vera and the boys at Conder Wetlands

Tuggeranong:

This includes all the tributaries and ponds along Tuggeranong Creek as well as Lake Tuggeranong. This is arguably the most varied set of sites in our region. It extends from natural creek lines of Tuggeranong Creek where it passes under the Monaro Highway, to silt traps at the mouth of 'Village Creek'(a series of under ground pipes).

An extreme algal bloom event plagued Lake Tuggeranong in February. High water temperatures in summer have been suggested as having a possible link. The temperature readings from waterways flowing into the lake were extremely high in contrast to natural creeks in our other catchments. The phosphate levels coming in from Village and Wanniassa Creeks were interestingly no higher than any where else in the catchment. However Wanniassa Creek did score the highest nitrate readings for this February.

The salinity (EC) readings in this catchment were however 5 times higher than others in our region. Both high temperatures and high salinity may be attributed to concrete channels replacing natural creeks and the subsequent reduction in vegetation cover and increased salt load from urban runoff.

Cotter:

The Cotter Road was upgraded in preparation for the Cotter Dam enlargement project and the Cotter Avenue recreation facility was closed to the public. Only one site on the Cotter River, at the campground, has had regular data submitted for 2009. The most notable issue has (not surprisingly) been the general lack of water, especially at the start of summer. There was a big spike in turbidity recorded after the rainfall events in early February. This site will be of particular interest as construction on the dam above it proceeds. More monitoring sites above the dam are expected to provide more information about this catchment in the coming year.

Figure 4 Cotter River at the campground

Paddy's:

This catchment includes all the sites monitored in the Tidbinbilla Nature Reserve and along the Corin Forest road, as well as on Paddy's River. A major concern in this catchment is illegal dumping both of cars and general refuse. The worst site was where the Tidbinbilla Road bridge crosses over Paddy's River.

Figure 5 Illegal dumping at Paddy's River (March 09)

A permanent set of barricading boulders were installed by TAMS in October 2009 after months of reporting/lobbying by Waterwatch. The site has remained free of major dumping since then.
Murry's Corner is another site prone to dumping with car parts being reported by Waterwatchers along with frequent litter. High turbidity was also experienced here this summer, especially after the February downpours.
In Tidbinbilla Nature Reserve the low rainfall at the end of last year saw the Tidbinbilla River dry out at its lower reaches.
The Sanctuary ponds showed supersaturated oxygen levels and very high phosphate levels, typical of ponds in summer that have lots of algae and little water in flow to flush them out.

Naas/Gudgenby:

This is our highest catchment and monitoring here is generally done bimonthly. Most of the upland swamps and creeks have been drying out over the summer months. This has been the case for the past few years as we have suffered prolonged drought.
pH readings just below 6.0 were found in the higher wetlands of Gudgenby. This could be due to naturally occurring acids forming in boggy conditions. High phosphate levels have also been traced back to naturally occurring dieback of plants associated with some of the waterways. These are reported as diminishing over recent years.

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.

WATERWATCH
Australian Capital Territory