A summary of water quality in the Merri & Darebin Catchments 2017

The water quality in our urban catchments presents challenges but the enthusiasm from the local community to protect the Merri Creek and catchment is high.

Participants training to be *Waterwatch* volunteers at the Edgars Creek, Reservoir *Waterwatch* workshop in October 2016, with Ebina Siby, fourth from right (in green pants and white top).

The MCMC *Waterwatch* program summary of the water quality results for 2017 is a culmination of *Waterwatch* volunteers' hard work collecting monthly water quality results on a range of physical chemical, biological and observational parameters. The MCMC *Waterwatch* program supports seven volunteer groups, who conduct regular monitoring of water quality at 13 sites in the Merri, Edgars, Darebin, Moonee Ponds and Lower Yarra catchments, including Westgate Park and Trin Warren wetlands in Parkville (which drains into the Moonee Ponds creek). The volunteers are enthusiastic and motivated locals who are not only concerned about their local waterways, they take action to improve waterway health and educate others. As stated by Ebina Siby, a regular volunteer, *"It feels great to spend one or two hours once every month to do water quality testing at Darebin Creek. We have at least one to two people constantly coming to the monitoring session. Also, it is great to meet people who have similar minds in regards to sustainability and hopes to help our community's waterways."*

Waterwatch water quality monitoring results showed no improvement in the Merri or Edgar's Creek overall poor condition. Lower, urbanised reaches were in worse condition than the more rural upper reaches, reflecting the impact of stormwater runoff from hard urban surfaces, habitat loss and industrial spills.

A smiling Kyle O'Farrell training to be a *Waterwatch* volunteer at the Edgars Creek, Reservoir *Waterwatch* workshop in October 2016.

The Edgars Creek in Reservoir had generally high electrical conductivity (EC) or salinity readings, averaging 900 EC (clean fresh water normally around 80-200 EC). There were occasional high spikes in phosphate and ammonium and decreases in dissolved oxygen particularly in the summer months. These changes of nutrients and oxygen for short periods of time can be a natural occurrence in the summer months due to warmer temperatures and lower flow of water. They can also be from industrial discharges.

One of the causes of this change was an industrial spill in February. There was a fire at a soap factory and the foam used to dowse the flames ended up in the creek via a rain event which pushed detergents from the factory into the creek and into Edwardes Lake. The detergents caused a significant increase of phosphate and a lowering of the availability of dissolved oxygen. The rapid change in water quality resulted in fish deaths and an increase of algae growth. This change in water quality was picked up by the Edgars Creek *Waterwatch* group and was still a problem two weeks after the occurrence.

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The effects of this event were noticed as far downstream as the Merri Creek in Fitzroy North where the Stream Team *Waterwatch* group tested a ten-fold increase in phosphate levels. On a positive note, baseline and follow-up litter audits of the same area of Edgars Creek identified only negligible levels of litter build-up, which was good news. Further tracking litter audits of the same area of creek bank will be undertaken during 2018 to build up a more extensive picture of litter build-up rates and type.

The Merri Creek: A stormwater drain that flows to the Merri Creek in Campbellfield collected a spill of tomato salsa from a local food manufacturer. The company was identified and copped a fine of almost $8000 (further information is on the EPA website). Although the spill was contained before the majority of the salsa reached the creek, there were still far reaching impacts. These included a decrease in dissolved oxygen, and a rise in nutrients and turbidity (suspended solids). In early September, more than 400 dead fish and about 140 million litres of contaminated water was removed from Merlynston Creek, a main tributary of the Merri Creek, in Coburg. The contamination was a result of the July Coolaroo factory fire. The fire, burning for 11 days at a recycling plant, was successfully supressed using fire-fighting foam that eventually ended up in the Merlynston Creek. Further information is on the EPA website.

One of the most interesting changes noticed by *Waterwatch* volunteers in the Merri Creek is a change in the Dragonfly nymphs (young larval stage) that are collected as part of the biological sampling that is conducted. Regular sampling and identification of aquatic macroinvertebrates, or waterbugs, is completed to add to the water quality data. Further information on waterbug sampling can be found here.

Until 2016 the Friends of Edgars Creek *Waterwatch* group had been finding members of the Dragonfly Family Aeshnidae but in the past two years, these have disappeared and we are now finding Telephlebidae nymphs instead. In south eastern Australia, Telephlebs are generally found in fast flowing mountain streams and therefore the SIGNAL score, (an assessment of river health) for this family is nine, compared to five for the Aeshnids. There is one member of the Telephlebs that is found in slow flowing, heavily vegetated streams. This is the Swamp Darner (*Austroaeschna parvistigma*). This species is found elsewhere in Melbourne and we assume it is the species we are finding. At this stage we do not know why the change has occurred but it is certainly good news to find more Dragonfly species that are more sensitive to pollution. This can indicate that the water quality and in stream habitat is improving in this section of the creek.

Dragonfly Family Telephlebidae are being found more often in the Merri Creek over 2016 and 2017. Photo: Trevor Hausler.

The Trin Warren Tamboore wetlands in Parkville experienced a blue green algae outbreak during the warm weather in February. This wetland was constructed over ten years ago to treat stormwater from surrounding streets and provide valuable fauna habitat. Treated water is used to irrigate the sports fields.

Within the Darebin Creek, the salinity of the drain of Murray Road/ Southern Road Bridge site in Preston stayed between 250 -780 EC throughout the months of 2017, however, it rose during the month of July 2017. The results obtained during the testing reflected physical and biological features, such as the weather conditions prior to sampling, the impacts of the near-by shopping centre, stormwater drains and other factors. Further downstream in the Darebin Creek, a mid-March monitoring recorded very high turbidity, phosphate and ammonium levels. A large rainfall event just prior to testing fell in a north/south band across Victoria, so the whole catchment would have copped it at one time, releasing a large amount of stormwater runoff with associated nutrients. Generally water clarity and dissolved oxygen were the parameters with consistently best results, while pH and nutrients (phosphate and ammonium) had the worst results.

To view and download specific water quality results on dates and sites within the Merri Creek catchment visit the Victorian *Waterwatch* database.

To view the sites where Waterwatch volunteers are collecting their water quality data visit the MCMC *Waterwatch* page.

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MERRI CREEK MANAGEMENT COMMITTEE