

Report compiled: 22/10/22

Waterbug Census sampling results on Moonee Ponds Creek opposite Herbert Reserve and slightly upstream of footbridge, Strathmore

MERRI CREEK



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Pictured: Sample of aquatic macroinvertebrate sample and aquatic plants they were living in. Bright green aquatic plant is *Ulva intestinalis* https://www.inaturalist.org/guide_taxa/294181

Waterwatch Site code and name:

ME_YMO170. Moonee Ponds Creek, just upstream of the Herbert Street footbridge, across from Herbert Reserve, near Brosnan Crescent, Strathmore. Site details can be viewed on the Waterwatch Victoria community water quality data portal: <http://www.vic.waterwatch.org.au/site/2310586>

Date sampled: 05/10/22 (physchem parameters and waterbug sample) at 3:15pm (WQ data can be viewed here: http://www.vic.waterwatch.org.au/site_visit/2332715)

Surveyors: Julia Cirillo and Tania Struzina (MCMC staff)

Description

The weather was cloudy with light rain and the water appeared discoloured, milky and stained slightly brown. There was a low base flow that appeared steady, not falling. There had been much precipitation during the previous 4 weeks of spring. Rainfall was 30% above average in September (<http://www.bom.gov.au/climate/rainfall/>).

MCMC staff carried out a stream habitat survey first to determine variety of habitats to sample. The site was dominated by an extensive concrete channel with no other macro habits, very uniform along the whole reach other than a slight curve which can be seen in the photo above. Two main aquatic plants were found instream, a brown algae and *Ulva intestinalis*.

The sampling revealed a low/degraded range of 6 taxa. This low range of taxa and taxa being all pollution tolerant, indicate that the creek is badly impacted by the low range of riparian and in-stream habitats. Stormwater pollution is also likely to have had an impact. This is not surprising and can probably be explained by the following:

Merri Creek Management Committee Inc. comprises:

City of Darebin

Hume City Council

Mitchell Shire Council

Merri-bek City Council

City of Whittlesea

Yarra City Council

Friends of Merri Creek Inc

Wallan Environment Group Inc.

- 1) There has been 30% higher than average rainfall in this part of Melbourne for spring. In Melbourne, as in many urban environments, having high rainfall increases flows in stormwater drains, bringing an increase in pollutants from streets, commercial and residential areas into the creek. This is known as urban stream syndrome.
- 2) The lack of habitats at the site (no riffles or any instream habitat apart from algae, low bank vegetation, and very low riparian zone) means that aquatic macroinvertebrates have difficulty colonizing the area, even tolerant species.

Please refer to Table 1 for the full results.

Table 1. List of Taxa and SIGNAL scores for ME YMO170 on 05/10/2022.

Name	Common Name	Quantity	SIGNAL Score	Weight factor	SIGNAL x weight factor	Photo
Phylum Turbellaria	Flatworms	3	1	2	3	
Phylum Mollusca						
Family Physidae, Species: <i>Physa acuta</i>	Pond Snail	1	1	1	5	
Class Crustacea						
Order Amphipoda	Scuds, side swimmers	15	3	4	12	
Class Insecta						
Order Coleoptera						
Beetles						
Family Dytiscidae	Nosey tiger	1	2	1	2	
Order Diptera						
True Flies						
Family Ceratoponidae	pogs	20	4	4	16	
Family Chironomidae	Other Chironomids	200	3	5	15	
	TOTALS	240	14	17	53	
	SIGNAL score			2.3		
	WW Dbase SIGNAL score			2.8		
	Weighted ALT SIGNAL2 score			3.1*		
			Meaning			Severe Pollution

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Calculating the SIGNAL score for your site (from Melbourne Water’s Waterbug census training manual)

A score for your site can be calculated from the number of taxa collected and their SIGNAL scores. The overall formula for calculating the SIGNAL score of your site is:

$$\text{SIGNAL SITE SCORE} = (\text{Sum of SIGNAL SCORE} \times \text{WEIGHT FACTOR}) / \text{TOTAL OF WEIGHT FACTOR}$$

On your data sheet, the number of collected taxa are grouped, these groupings are for weighting factors to calculate your SIGNAL score, as shown in Table 1.

Table 2: Weight table

Number of specimens	1-2	3-5	6-10	11-20	>20
Weight factor	1	2	3	4	5

*Explanatory notes on SIGNAL Score (from the [Waterwatch Victoria](#) website)

Each aquatic macro invertebrate is given an ALT (Agreed Level Taxonomy) SIGNAL2 score depending on their sensitivity to pollutants. SIGNAL stands for Stream Invertebrate Grade Number - Average Level. In 1994, a new version of this method, known as SIGNAL2, was developed and is available on the [Federal Government website](#). By knowing the SIGNAL2 grade for every family, the SIGNAL2 score of a site, and therefore its health, can be assessed. For example a site that has abundant diversity and many sensitive aquatic invertebrates will have a high ALT SIGNAL2 score.

To calculate an ALT SIGNAL2 score for a site:

Step 1. Collect, sort and identify the creatures found at the site

Step 2. Calculate the sum of the individual ALT SIGNAL2 grades

Step 3. Divide the sum of the individual ALT SIGNAL2 grades by the number of different invertebrates collected to calculate the ALT SIGNAL2 score.

A guide for interpreting water health according to the SIGNAL score of a site is given in this table

SIGNAL score ratings

Higher than 6	Healthy habitat
Between 5 and 6	Mild pollution
Between 4 and 5	Moderate pollution
Less than 4	Severe pollution

These ratings were originally developed for very “normal” freshwater streams and rivers, and do not work as well for wetlands or lakes.

This report has been added to the [Waterwatch database](#) and the [National Waterbug blitz](#) app

Yours sincerely,

Julia Cirillo

Coordinator | Waterwatch Program & Rapid Response to Litter Project

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