North Central Waterwatch River Health Snapshot Report Healthy Coliban Catchment Citizen Science Project

1 July 2019 to 30 June 2020

Acknowledgement of Country

The North Central Catchment Management Authority (CMA) acknowledges Aboriginal Traditional Owners within the region, their rich culture and spiritual connection to Country. We also recognise and acknowledge the contribution and interest of Aboriginal people and organisations in land and natural resource management.

On behalf of the North Central CMA and Coliban Water, North Central Waterwatch supports a team of citizen scientists to monitor the health of waterways throughout the Coliban catchment.

The Upper Coliban is one of the most important catchments in north central Victoria. The area supplies drinking water for more than 130,000 people and is a key asset for the region. Historical land management practices have resulted in extensive loss of riverside vegetation, which impacts water quality and river health.

North Central CMA and Coliban Water are implementing a 20-year plan; 'A Healthy Coliban Catchment' project. This project aims to protect the upper section of the Coliban River and its long-term water supply with fencing to control stock access, off-stream stock watering, revegetation and weed control. Habitat connectivity will be improved, and the region will see a boost to cultural and lifestyle values.

It is one of the most robust and integrated approaches to catchment management undertaken to date in Victoria. With a clear vision and action plan, the North Central CMA, Coliban Water and Dja Dja Wurrung are working with local councils, landholders and communities on a range of actions. A community reference group is providing local input and knowledge as works are rolled out. Citizen scientists are playing an important role in this unique catchment too. The dedicated team of volunteers commenced water quality monitoring at their adopted sites in July 2019 and are contributing vital data to inform the Healthy Coliban Catchment Project.

Understanding and reporting on the condition of our waterways is an important step for guiding waterway management decisions and demonstrating management outcomes.

Read on to learn more about the current condition of waterways throughout the catchment. This will act as a baseline for ongoing monitoring using citizen science data. The Victorian Government has been supporting community partnerships through Waterwatch and other citizen science initiatives to address local waterway priorities. These priorities are being addressed as part of the Victorian Government's Water for Victoria investment to improve catchment and waterway health across regional Victoria.

Summary

The North Central CMA is committed to supporting citizen science programs that enable communities to take action regarding the health of the region's waterways. Citizen scientists are custodians of the environment and make a real contribution to decisions being made about natural resource management.

The Healthy Coliban Catchment project is a robust plan with clear outcomes; this report will be produced annually to help to track change over time. This is the first year of citizen science data and further sampling is required to gain a better understanding of the catchment.

Results so far indicate that the upper reaches of the Coliban catchment have good water quality and waterbug ratings, typically reducing in quality as we move down stream. Results vary among waterways, but the overall health of the catchment is relatively poor.

It is worth noting that restrictions due to the (coronavirus) COVID-19 pandemic meant data collection was limited or ceased during the past four months of the reporting period. Limited data has influenced the extent of sites and data included in this report (a minimum standard of five data sets per site is required for water quality results to be included).





Site Code: NC_COL090 Monitor: Mark Reid

Just above Trentham Falls, the upper Coliban River has good to moderate water quality, benefited by the forested upper catchment around Lyonville. Turbidity and phosphorous are moderate, likely a result of surrounding agriculture and narrow riparian zone to the northern bank.

The waterbug SIGNAL score is the highest rated of all sites in the program, however taxa richness and EPT scores rated low.

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Phos (Mg/L)	pН	EC (Us/cm)	Turbity (NTU)	Waterbug Taxa Richness	ALT EPT	Signal Score
0.05	7.4	74	21	6	1	10.3

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Stony Creek, Trentham Falls Road Site Code: NC_STO950 Monitor: Mark Reid

At only around seven kms long, Stony Creek is a small waterway starting in the foothills near Newbury and entering the Coliban River just above Trentham Falls. The creek travels through the township of Trentham and along the eastern side of the golf course, where the monitoring site is located on Trentham Falls Road.

Waterbug richness and EPT scores were low, likely due to limited habitat upstream of the monitoring site. Significant riparian and instream weed control has recently been undertaken in conjunction with the Trentham Golf Club. Willow and blackberry removal may see an initial drop in water quality, but as the site rehabilitates and revegetation becomes established, we will likely see an increase in waterbug diversity.



Barrys Reef

Water Quality Colour Coding

Sites have been colour coded and interpreted as follows:



Waterbugs Colour Coding

Sites have been colour coded and interpreted as follows:

Meets or exceeds ALT objectives for a healthy ecosystem (>30th percentile of index values for reference sites). Key processes and/or water quality may be slightly impacted however most habitats are intact.

Close to meeting ALT objectives for a healthy ecosystem (5th—30th percentile of index values for reference sites). Many key processes are not functional; water quality and/or habitat are moderately impacted.

Does not meet ALT objectives for a healthy ecosystem (<5th percentile of index values for reference sites). Most key processes are not functional and water quality and/or habitat is severely impacted.

ALT Signal Index (indicates the pollution tolerance of the waterbug community present)

Taxa Richness (number of different types of waterbugs)

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EPT Signal (different types of stoneflies, mayflies and caddisflies)

Water quality indicator levels

Water quality indicator levels for the Cleared Hills bioregions:

SEPP (WoV) segment	River health category	Reactive phosphorus (mg/L)	pH (lower)	pH (upper)	Electrical conductivity (µS/cm)	Turbidity (NTU)
Cleared Hills	Good	≤0.03	≥6.3	≤8.5	≤700	≤15
	Moderate	>0.03 ≤0.1	<6.3≥5.5	>8.5≤9.0	>700 ≤1500	>15 ≤25
	Poor	>0.1	<5	>9.0	>1500	>25

Interpreting results

The results in this report are based on the analysis of macroinvertebrate monitoring data collected in spring 2018. The report provides a baseline assessment of the current condition of Bendigo Creek using citizen science data.

The Victorian Government has a set of guidelines that provide limits to acceptable water quality levels and macroinvertebrate indices for healthy ecosystems. These levels are based on biological characteristics assigned to parts of the catchment which is determined by its position in the region.

In this program, the catchments lie within the Cleared Hills Bioregion.

Four water quality parameters were measured at each site; pH, electrical conductivity, reactive phosphorus and turbidity. Three indices are calculated using macroinvertebrate data, assessed against Agreed Level Taxonomy (ALT) reference condition values.

Each site was assessed against these values, based on information known about the site.

Acknowledgments

North Central Waterwatch would like to acknowledge the contribution and support of staff members from North Central CMA and Coliban Water involved in the Healthy Coliban Catchment partnership project.

We also acknowledge the tireless effort from our dedicated Citizen Scientists. If it weren't for their contribution and the huge amount of data required, this report and its valuable contribution to the project and the benefit to the catchment, would not be possible.

How to get involved

Contact your local Waterwatch Coordinator at the North Central Catchment Management Authority

Coliban Rive

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