A Healthy Coliban Catchment

Citizen Science Project
River Health Snapshot Report 2021

WATERWATCH
North Central
Communities Caring for Catchments

A Healthy Coliban Catchment

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

The upper Coliban catchment 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, Coliban Water and Dja Dja Wurrung are implementing a 20-year integrated catchment plan delivered via the 'A Healthy Coliban Catchment' project.

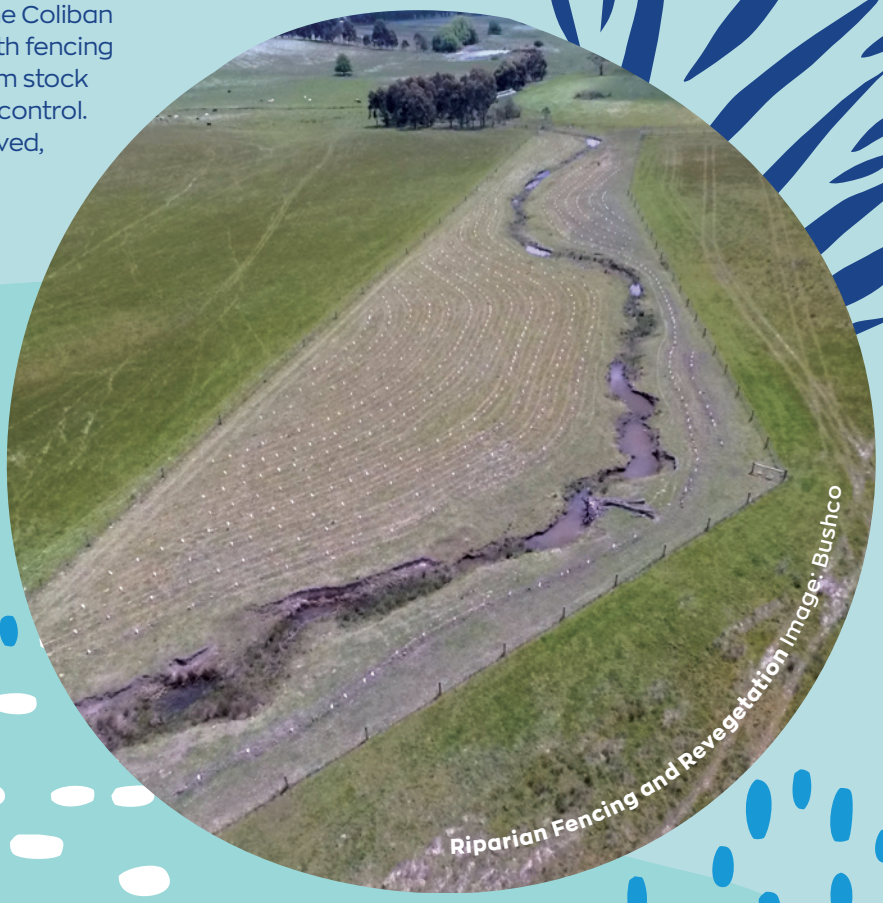
This project is jointly funded by Coliban Water and the Victorian Government to deliver catchment stewardship to improve the holistic management of land, water and biodiversity in/across the upper Coliban catchment. A Healthy Coliban Catchment is one of 11 *Our Catchments, Our Communities* regional on-ground projects funded from the Victorian Government's $248 million investment in waterway and catchment health over 2021-2024 and contributes to deliver Action 3.3 of *Water for Victoria* - invest in integrated catchment management.

The Healthy Coliban Catchment is about protecting the upper section of the Coliban River and its feeder waterways 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.

With a clear vision and action plan, project partners are working with local councils, landholders, and communities on a range of on-ground and community education actions. A community reference group is providing local input and knowledge as works are rolled out.

Citizen scientists are playing an important role in the project. Dedicated community volunteers and Djandak project staff have been monitoring water quality at their adopted sites since July 2019 and are contributing vital data to inform the Healthy Coliban Catchment project.

Understanding and reporting on the condition of our waterways is valuable for guiding waterway management decisions and demonstrating management outcomes. Read on to learn more about the current condition of waterways in the Coliban Catchment from the data collected by Waterwatch citizen scientists. The data also provides a baseline for ongoing monitoring.



Riparian Fencing and Revegetation Image: Bushco

Upper Kangaroo Creek

The Victorian Government has been supporting community partnerships through Waterwatch and other citizen science initiatives to address local waterway priorities. These priorities are 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 valuable contribution to decisions being made about natural resource management. In these first few years of the Healthy Coliban Catchment Project, volunteers are establishing a baseline dataset to help to monitor change in the catchment over time.

Results indicate waterway health in the upper reaches of the Coliban catchment have good water quality and waterbug ratings. Results vary among waterways, but overall catchment and waterway health declines further downstream.

It is worth noting that restrictions due to the COVID-19 pandemic saw limited opportunities for water quality monitors to collect data during the reporting period. A minimum of five water quality data sets per site is required for accurate statistical analysis and inclusion of results in this report.

Vaighan
Tarilta
Metcalfe East
Sidonia
Malmsbury
Drummond
Lauriston
Denver
Porcupine Ridge
Spring Hill
Kyneton South
Tylden
Wheatsheaf
Trentham
Ashbourne
Barrys Reef

Kangaroo Creek, Trimble Track, Drummond Bushland Reserve

Site Code: NC_KAN850 **Monitor:** Carly McNaught

No data was collected for the site during the reporting period.

Water Quality Indicators				Waterbug Indicators		
pH	EC	Phos	Turbidity	Richness	EPT	Signal
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Coliban River, Reservoir Road, Lauriston

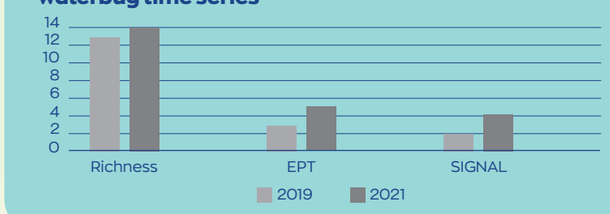
Site Code: NC_COL380 **Monitors:** Jess Donaczy and Kayla Baksh

This site is located between Lauriston and Malmsbury Reservoirs and is in recovery after an extensive willow control program surrounding the site. Recovery will take some time, but already there has been an improvement in waterbug richness, EPT and SIGNAL scores. Extensive revegetation will hopefully see a continued improvement in water quality, available habitat and shading at the exposed site.

Insufficient water quality data was collected for this site during the reporting period.

Water Quality Indicators				Waterbug Indicators		
pH	EC	Phos	Turbidity	Richness	EPT	Signal
N/A	N/A	N/A	N/A	14	5	4.2

Coliban River, Reservoir Road, Lauriston waterbug time series



Kangaroo Creek, Spring Hill Road

Site Code: NC_KAN360 **Monitor:** David Tiller

This is the most upstream monitoring site on Kangaroo Creek, and coming directly out of a forested catchment, the water quality is excellent across all four parameters. The site is an excellent example of an ecologically intact site with a broad range of habitats, extensive and diverse vegetation, and little disturbance within the catchment.

Waterbug scores are classed as moderate, meaning they are close to meeting ALT objectives for a healthy ecosystem.

Water Quality Indicators				Waterbug Indicators		
pH	EC	Phos	Turbidity	Richness	EPT	Signal
7.4	428	0.01	10	20	5	4.0

Shepherds Hut Creek, Shepherds Hill Road

Site Code: NC_SHE950 **Monitor:** Nina Cunningham

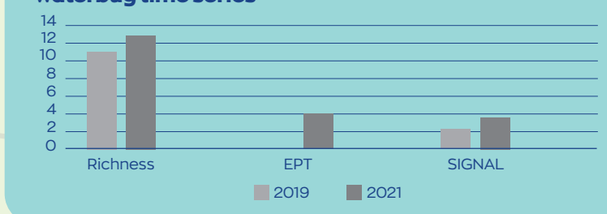
Just upstream of this site, Shepherds Hut Creek has a narrow riparian zone and limited streamside vegetation. Erosion is likely impacting water quality and consequently waterbug scores. The creek would benefit from riparian fencing and revegetation to provide a buffer which would contribute to improved water quality over time.

Richness remains much the same as 2019 results, while EPT and SIGNAL scores have marginally improved.

Insufficient water quality data was collected for this site during the reporting period.

Water Quality Indicators				Waterbug Indicators		
pH	EC	Phos	Turbidity	Richness	EPT	Signal
N/A	N/A	N/A	N/A	13	4	3.7

Shepherds Hut Creek, Shepherds Hill Road waterbug time series



Coliban River, Spring Hill Road

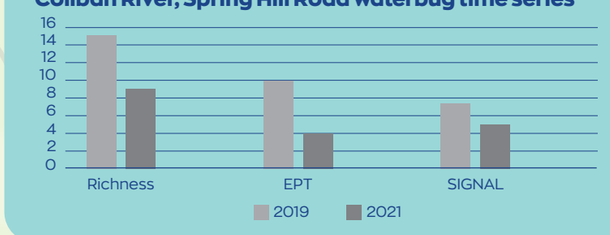
Site Code: NC_COL200 **Monitor:** Barry Floyd

Continuing downstream, waterbug scores between NC_COL090 and NC_COL200 improve, perhaps in part due to the Coliban Bushland Reserve located between the two sites. Greater in-stream and flanking vegetation play a vital role in removing suspended solids, improving water quality and increasing habitat diversity. When comparing waterbug scores to 2019, there has however been a decline in all three indices.

Excellent water quality results were recorded at this site for all four parameters.

Water Quality Indicators				Waterbug Indicators		
pH	EC	Phos	Turbidity	Richness	EPT	Signal
8.2	120	0.02	13	9	4	4.7

Coliban River, Spring Hill Road waterbug time series



Little Coliban River, Tylden-Woodend Road

Site Code: NC_LIT009 **Monitor:** Madeleine Jenkins

The Little Coliban River has a narrow riparian zone and limited streamside vegetation along much of its length. The river's overstory species is dominated by willows and erosion is evident to the river and its tributaries.

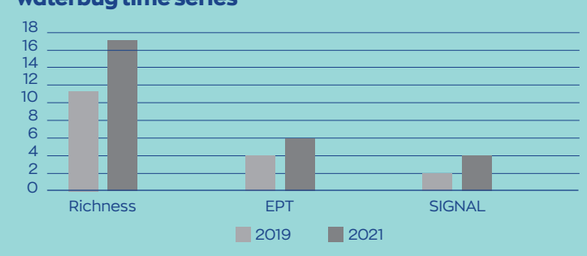
This waterway is a high priority for the Healthy Coliban Catchment project and will benefit greatly from the river health restoration works being implemented along its length.

Since 2019, there has been an improvement in waterbug richness, EPT and SIGNAL scores. Ongoing weed control, stock exclusion fencing and revegetation will hopefully see a continued improvement to the health of the waterway over time.

Insufficient water quality data was collected for the site during the reporting period.

Water Quality Indicators				Waterbug Indicators		
pH	EC	Phos	Turbidity	Richness	EPT	Signal
N/A	N/A	N/A	N/A	17	5	4.1

Little Coliban River, Tylden-Woodend Road waterbug time series



Coliban River, Trentham Falls Road

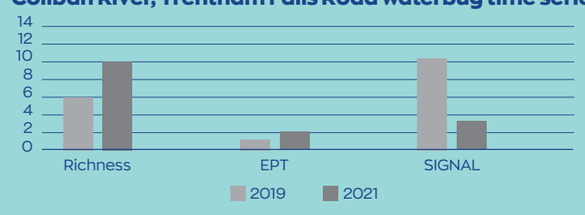
Site Code: NC_COL090 **Monitor:** Mark Reid

Located a short distance from Trentham Falls, this site on the upper Coliban River has excellent water quality that has improved since the previous report. Benefited by the forested upper catchment, phosphorous, pH and electrical conductivity (salinity) are all excellent. Turbidity just falls into the moderate category. Since 2019, reactive phosphorous levels at this site have improved considerably.

Waterbug richness, SIGNAL and EPT scores are surprisingly poor, seemingly not meeting objectives for a healthy ecosystem. It is unclear why.

Water Quality Indicators				Waterbug Indicators		
pH	EC	Phos	Turbidity	Richness	EPT	Signal
7.3	86	0.01	15	10	2	3.4

Coliban River, Trentham Falls Road waterbug time series



Stony Creek, Trentham Falls Road

Site Code: NC_STO950 **Monitor:** Mark Reid

Stony Creek is a small waterway starting in the foothills near Newbury, before traveling through the township of Trentham and entering the Coliban River just above Trentham Falls. The monitoring site is adjacent to the Trentham golf course.

Water quality is excellent and remains much the same as 2019 but with an improvement in reactive phosphorous.

No waterbug data was collected for the site during the reporting period.

Water Quality Indicators				Waterbug Indicators		
pH	EC	Phos	Turbidity	Richness	EPT	Signal
7.3	102	0.02	9	N/A	N/A	N/A

Interpreting results

The results in this report are based on the analysis of water quality data collected throughout 2021 and macroinvertebrate monitoring data collected in spring 2019 and 2021. The report provides a baseline assessment of the current condition of waterways located within the Healthy Coliban Catchment project area using citizen science data.

The Victorian Government has 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.

Waterbugs Colour Coding

Sites are colour coded and interpreted as follows:

- **Meets or exceeds ALT objectives for a healthy ecosystem** (>30th percentile of index values for reference sites). Key ecosystem 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 ecosystem 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 ecosystem processes are not functional and water quality and/or habitat is severely impacted.

Water Quality Colour Coding

Sites are colour coded and interpreted as follows:

- **Good:** Water quality is acceptable and has minimal impacts on aquatic ecosystem health.
- **Moderate:** Water quality and aquatic ecosystem health are moderately impacted.
- **Poor:** Water quality and aquatic ecosystem health are largely impacted.

pH, Electrical conductivity, Turbidity, Reactive phosphorous

Symbols

Richness is the number of different types of macroinvertebrates at a site; sites with higher taxa richness are generally in better ecological condition.

EPT is the number of different types of stoneflies, mayflies and caddisflies at a site; low diversity of these sensitive macroinvertebrates may indicate ecological disturbance at a site.

SIGNAL indicates the pollution tolerance of the macroinvertebrate community at a site. Each type of macroinvertebrate is assigned a value between one (tolerant) and 10 (sensitive) based on pollution tolerance or intolerance. The ALT Signal Index is the average of these values.

A site in good ecological condition, based on the ALT objectives, meets the following targets:

Richness	EPT	SIGNAL
21	6	4.2

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 (lower)	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

Want to get involved?

If you're passionate about your local environment, then we need your help!

We're calling on the local community to help keep a watchful eye on the health of waterways in the upper Coliban catchment.

If you live in the project area (see map) and would like to become a volunteer citizen scientist, please register your interest with our Citizen Science project officer at citizenscienceteam@nccma.vic.gov.au or (03) 5448 7124.

Acknowledgement

North Central Waterwatch would like to acknowledge the contribution of North Central CMA staff, Coliban Water and Dja Dja Wurrung who are key partners 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.

Acknowledgement of Country

The North Central Catchment Management Authority (CMA) acknowledges Dja Dja Wurrung as the Traditional Owners of the project area and 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.

Daniels Creek

Waterbug monitoring, Little Coliban River

The Victorian Government is supporting community partnerships over the next four years 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.

North Central CMA · Our Catchments, Our Communities · VICTORIA State Government · WATERWATCH North Central Communities Caring for Catchments · Coliban WATER · Dja Dja Wurrung Clans Aboriginal Corporation