Monitoring Plan

Monitoring Plan

Monitoring Group Name

Plenty River Greensborough
Rewilding Project WaterWatch Group

Waterway Name Plenty River

This Plan will be reviewed yearly and adapted and amended as necessary.

Plan originally completed July 2025 by Emma Parfitt, Yani Bown and Seema Kanade.

General details

Information about our Waterwatch group

Name of monitoring group	Plenty River Rewilding Project
Name of group leader	Seema Kanade
Waterway(s) to be monitored	Plenty River
Local Government Area	Nillumbik
Commencement date of monitoring	17/05/2025

Our Members

Group members will be registered on the Waterwatch database. Provide details of ALL group members who participate in monitoring.

(Excel spreadsheet- sent to Julia Cirillo- WW Coordinator)		

Emergency Contact Details

(Excel spreadsheet as above)			

Monitoring Plan

Training Schedule

Your Waterwatch Coordinator will guide you through the first steps of monitoring water quality and assessing the environment.

Event	Proposed date	Complete
Waterwatch Training	25/05/25	25/05/25
First site visit: site selection and monitoring plan	17/05/25	17/05/25
Second site visit: first water testing and equipment delivery	25/05/25	25/05/25
Third site visit: second water testing	06/07/25	06/07/25
Annual field visit and shadow testing	Scheduled at Merri Creek for Sunday 5 October 2025	

Data Confidence Schedule

Waterwatch Network meetings are designed to guide you through maintaining your equipment and testing the accuracy of your data. You will also meet other Waterwatch participants.

Event	Proposed date	Complete
Waterwatch Melbourne Data Confidence Exercise: Shadow Testing In-Field	Scheduled at Merri Creek for Sunday 5 October 2025	
Waterwatch Melbourne Data Confidence Exercise: Shadow Testing at Network Meeting	Scheduled at Merri Creek for Sunday 5 October 2025	
Waterwatch Victoria Data Confidence Exercise: 'Mystery Sampling' Event	Will be determined by WW Vic- usually in March- May each year	

A schedule of monitoring is included at the end of this document.

Monitoring Plan and Objectives

A brief description of the history of this area

The Plenty River flows through Wurundjeri Country. Wurundjeri-willam people, part of the Kulin nation, have cared for this Country for tens of thousands of years. Indigenous oral history and archaeological findings show that the intersection of the Kurrum Yallock (Plenty River) and the Birrarung (Yarra River) was a ceremonial site[1].

Europeans first settled along the Plenty in 1830 with the discovery of gold near Warrandyte[1]. The attitudes toward, and persecution of Aboriginal people led to a drop in the ability of Indigenous people to practice traditional methods of caring for Country[2]. Settlement also resulted in rapid environmental change. The introduction of hooved animals toughened the sediment along the riverbanks. Vegetation along the river was removed to allow the construction of farms and residences, this change in land use alongside many introduced species, created a myriad of stressors on the river health.

Another major change to the Plenty River around this time was the completion of Yan Yean Reservoir in 1857[3]. It was built in response to the new City of Melbourne's water supply being solely supplied from the Yarra, which was termed 'Yarra Soup' due to the poor water quality and risk of colonial fever or typhoid transmission via water[4]. This reservoir is cited as a big reason for Melbourne's rapid growth into a metropolis[4]. Yan Yean originally was sourced by the Plenty River. However, in 1880, due to water quality issues, it began being sourced from other rivers[4]. Today, it is sourced by the Plenty as well as other catchments around Mount Disappointment[5].

Plenty River catchment, with approximate site location marked. Adapted from *Drought Response Plan: Part B - A Water Sharing Plan for Licensed Water Users in the Plenty River Catchment*, Melbourne Water, 2016.

Other notable structures around our site include the swimming pool, constructed in the river at Greensborough in 1937[2], which now only remains as rubble ruins, and the Old Pipe Bridge which runs directly above our site. This is a part of the Maroondah aqueduct system. The Plenty River does not run year-round, with some parts drying up, in the hotter, drier months, although in the past it may have flowed continuously[6]. This is likely due to the consumption and use of water by farmers, other licensed water users and, historically, the massive volume used for drinking water via Yan Yean Reservoir[2,4,6].

Over the past 20 years, replanting efforts have taken place around our site at the Old Pipe Bridge[7]. There have also been efforts to remove blackberry plants[2].

The Plenty River runs north to south with its head waters at Mount Disappointment[6]. It deepens downstream of Greensborough, from which point it becomes totally urbanized[2] (though today it is also heavily urbanized for some kilometers upstream). Bruces Creek, Yarra Creek, Jack Creek, Scrubby Creek and Barbers Creek flow into Plenty River, with the confluence with the Yarra River in Banyule Flats Reserve[2,6].

The following land uses are present within the catchment:

The area around our site in Greensborough is primarily residential uses. Rural areas upstream are used for farming, and the Yan Yean reservoir is also upstream. The areas around the Plenty river are also popular for recreational use, including Plenty Gorge Park and the Plenty River Trail.

The possible concerns for water quality, habitat and biodiversity are:

- Some houses in the catchment have septic tanks. Whilst the immediate surrounding area of Greensborough is almost fully serviced by reticulated sewage, some properties in the upstream councils of Nillumbik and Whittlesea continue to rely on on-property water management systems. In particular, parts of Plenty, Diamond Creek, Wattle Glen, Doreen, Yan Yean and South Morang are not yet connected to sewage[8,9]. Parts of Greensborough have only been connected within the last decade[10], so whilst all properties in the area have access to mains sewage, there may still be some properties using onsite water management that have not yet transitioned. We are concerned that any poor maintenance of septic tank systems could lead to pollutants (especially nitrogen impacting the aquatic environment)
- There are stormwater drains that come into the river near our site, leading to concerns about various pollutants. Urban stream syndrome, the inpact of stormwater drains from highly urbanized areas is a highly potential problem in this area.
- Due to recent rewilding efforts, we are interested in how revegetation may affect river metrics.
- Due to recent climatic patterns, we are interested in how the river responds to particularly dry events and storms with elevated stormwater flow.
- In terms of biodiversity, we are interested in:
    - The ability of the river to sustain a platypus population
    - The diversity and abundance of aquatic macroinvertebrates in the river, particularly in relation to providing food for the platypus
    - The impacts of water quality on feeding areas for native wildlife, especially kangaroos
    - The impact of anthropogenic water quality changes on other native wildlife such as birds and insects
    - The role of the Plenty as a wildlife corridor

The following positive changes in the area may be measured through WaterWatch monitoring:

- Understanding impacts of long-term planting
- Understanding changes in biodiversity
- Observing impacts stemming from management actions
- Understanding how the river has changed and will change in response to land use and other anthropogenic factors

Reflecting on the above questions, the group wants to know about:

- Whether better management is required upstream or at our site to support biodiversity
- How land use and human activities are impacting river health
- How climate change impacts river health
- How we can work with Traditional Owners to create shared priorities and support management together
- What actions we can take to improve river health
- As there are currently no long-term water quality monitoring programs in this area of the catchment, we want to provide long-term background monitoring data to help quantify how these changes are impacting the river and establish how healthy it is currently.

To tell us the answers to these questions we will measure:

- Biodiversity & population of aquatic macroinvertebrates according to the WaterWatch methods
- Physical chemical testing to observe changes in concentrations of chemicals associated with pollution (ammonium, phosphate, turbidity, pH etc)
- Observations of flow to observe changes in water volumes and velocity and the impacts on biodiversity.

Monitoring Plan

Our Sites (Waterwatch group to receive a copy)

Monitoring at the one or two sites specified below will help us to answer our questions about the health of the area (after the first year of testing additional sites may be added).

Site code (Waterwatch Coordinator to provide)	ME_YPL668	
Site description	Plenty River underneath Old Pipe Bridge	
Suburb/town	Greensborough	
Google maps reference	https://maps.app.goo.gl/RaSuPuRrVhbqzisF9	
Local Government area	Nillumbik	
Catchment	Plenty River	
Management unit	Yarra Catchment	
Sub-management unit		
Type of waterway	River	
Type of land use	Residential, recreational	
Access to site	From Plenty River Walk down stairs and grassy area.	
Risks to be aware of at this monitoring site	Slipping hazard getting down to the site Sudden deep water with potentially low visibility	
GPS reading	-37.686317; 145.102310	

Monitoring Plan

Monitoring Parameters (Waterwatch group to receive a copy)

Please tick which parameters you will monitor, including the frequency of monitoring.

Parameters	Monitoring Frequency			
	Monthly	Seasonally	Spring and Autumn	Annually (date)
Temperature	☑	☐	☐	☐
Dissolved Oxygen	☑	☐	☐	☐
Turbidity	☑	☐	☐	☐
pH	☑	☐	☐	☐
Electrical	☑	☐	☐	☐
Conductivity (Salts)	☑	☐	☐	☐
Phosphate	☑	☐	☐	☐
Ammonium	☑	☐	☐	☐
Macro-invertebrates	☐	☑	☐	☐
Habitat assessment	☐	☐	☐	☑
Photo point monitoring	☑	☐	☐	☐

Data Management

We plan to keep a copy of all data collected in the following location

Entered on the Victorian Waterwatch database

Data we collect will be forwarded to the Waterwatch Coordinator in the following way

Via the Victorian Waterwatch database
Creation of an annual WQ summary report and waterbug reports for each assessment

We will share the data with our community in the following ways:

Via the Victorian Waterwatch database
Creation of an annual WQ summary report and waterbug reports for each assessment

Monitoring Plan

Our Data Collection Schedule (Waterwatch group to receive a copy)

Include in the calendar below the planned dates of water quality data collection, habitat survey, macro-invertebrate surveys and Waterwatch Network meetings.

Water quality testing on the first Sunday of every month at 9:15am.

January	**February**	**March**
April	**May**	**June**
July **6th, 9:15am**	**August** **3rd, 9:15am**	**September** **7th, 9:15am**
October **5th, 9:15am**	**November** **2nd, 9:15am**	**December** **7th, 9:15am**

How to report pollution incidents

If you notice pollution incidents in the waterway (e.g. coloured water, sewage, bad smell, etc), please call:

EPA Pollution Watch Line

Melbourne metropolitan area – 9695 2777 (24 hours)
Outside metropolitan Melbourne – 1800 444 004 (24 hours)
Please also notify your Waterwatch Coordinator of the incident.

Sources

1.
The Nillumbik Story [Internet]. 1996. (Eltham District Historical Society). Available from: https://www.youtube.com/watch?v=zu4jgMqJDkU

2.
Weaver F. The Lower Plenty River Archaeological Survey [Internet]. 1991. Available from: https://www.banyule.vic.gov.au/files/assets/public/_operating-images-amp-docs/documents/planning-documents/weaver-f-1991-lower-plenty-river-archaeological-survey.pdf

3.
Melbourne Water. History of our water supply system [Internet]. Available from: https://www.melbournewater.com.au/about/who-we-are/history-and-heritage/history-our-water-supply-system

4.
Melbourne Water. Yan Yean History in Poster Format [Internet]. Available from: https://www.melbournewater.com.au/media/925/download

5.
Melbourne Water. Yan Yean Reservoir [Internet]. Available from: https://www.melbournewater.com.au/water-and-environment/water-management/water-storage-reservoirs/YanYean

6.
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7.
Friends of Plenty River Walk [Internet]. Friends of Plenty River Walk. Available from: https://www.friendsofplentyriverwalk.org

8.
City of Whittlesea Domestic Wastewater Management Plan [Internet]. City of Whittlesea; 2018. Available from: https://www.whittlesea.vic.gov.au/files/assets/public/v/1/documents/services/my-property/whittlesea-domestic-wastewater-management-plan.pdf

9.
Draft Onsite Wastewater Management Plan 2024 - 2029 [Internet]. Nillumbik Shire Council; 2023. Available from: https://participate.nillumbik.vic.gov.au/document/1280

10.
Nillumbik's Community Sewerage Program [Internet]. Nillumbik Shire Council; 2019. Available from: https://participate.nillumbik.vic.gov.au/document/1133