

Lovers Jump Creek

The sample site is a section of Lovers Jump Creek located at the North-Eastern corner of Turramurra Memorial Park, Turramurra, in remnant Blue Gum High Forest, a critically endangered ecological community. The Lovers Jump Creek Catchment includes parts of Turramurra, North Turramurra, Wahroonga, North Wahroonga and Warrawee. The Creek and several tributaries drain to the north to join Cowan Creek at Bobbin Head.

The water quality in Lovers Jump Creek is generally good by the standards of urban creeks in Ku-ring-gai. Typically, turbidity rises in most waterways following rainfall and flooding due to soil erosion and higher concentrations of suspended sediments in the water, and we can see that reflected in the data. Creeks in urban settings are impacted by elevated phosphate levels primarily due to stormwater runoff from residential areas with fertilizer use, detergents and household products, pet waste, erosion, organic matter being washed into creeks, and wastewater discharges from sewage overflows.

Physical Condition

- Dissolved oxygen – whilst dissolved oxygen naturally fluctuates depending on time of day and flow conditions, unusually low levels of dissolved oxygen can be an indicator of a pollution event.
- pH – a measure of how acidic the water is. Our waterways naturally vary in acidity depending on the local geology, soils, amount of urban development and fluctuations in flow and rainfall. Sudden changes in acidity can indicate the potential for a contaminant in the water.
- Available Phosphate – a measurement of the phosphate compounds that are soluble in water. The concentrations of phosphorus in Australian soils and water are naturally low, and a high phosphate level can indicate potential pollution events or contaminants.
- Electrical Conductivity – provides an indication on the amount of salts in the water.
- Turbidity is a measure of how clear or cloudy a liquid is and can be an indicator of sediment being carried by the water. Turbidity can vary drastically in urban waterways, primarily in response to rainfall, but also in response to soil type and even biological factors.

Sample Date	Water Level	Time Since Last Rainfall	Rainfall Intensity	Rainfall Previous 72hrs (mm)	Comments	Air Temp (°C)	Cloud Cover (%)	Water Temp (°C)	D.O. (ppm)	Sulphuric Acid Drops	pH	Available Phosphate (ppm)	E.C. Probe Calibrated (Select)	E.C. (µS/cm)	Turbidity (NTU)	Turbidity - (FAU)	Sample Testing Comments
5 November 2022	Medium	4-7 Days	Not Recorded	Not Recorded		Not Recorded	Not Recorded	15	8.7	8*4	7	0.02	Yes	410	10	5	
25 November 2022	Medium	4-7 Days	Not Recorded	Not Recorded		Not Recorded	Not Recorded	16	7	8*5	7	0	Yes	640	10	4	
16 December 2022	Low	Within 24hrs	Light	1.2	Debris wash in. More than normal detritus. Surface scum present/low flow	16.1	85	14.5	6.8	8*3	7	0.1	Yes	590	15	10	Clouds - fluffy, white. Earlier in week potential blackwater after heavy flush rain. Water slightly dark and detritus
27 January 2023	Low	Within 24hrs	Medium	8.2		24	100	20	6.5	8*5	7	0.07	Yes	690	10	7	
27 February 2023	Medium	Within 24hrs	Light	3.4		23	100	20	7.5	8*4	7	0.04	Yes	740	15	6	
24 March 2023	Medium	Within 24hrs	Light	2.4		20	100	18.5	6.8	8*3	7	0.1	Yes	430	10	5	
28 April 2023	Medium	Within 24hrs	Light	0.6		18	0	15	8.7	8*3	7	0.11	Yes	470	10	1	
23 June 2023	Medium	Within 24hrs	Light	7.6	Water a bit murkier than normal due to rain overnight	11	0	11	8.3	8*6	6.5	0.37	Yes	180	15	6	
28 July 2023	Low	1-3 Days	Light	0.2		18	80	11	8.3	8*3	6.5	0.1	Yes	370	10	4	Available phosphate - possible human error, pressed button twice
25 August 2023	Medium	1-3 Days	Light	2		17	0	11	8.5	8*4	7	0.07	Yes	440	10	5	
22 September 2023	Medium	Within 24hrs	Medium	3.6		14	100	14	6.1	8*5	7	0.14	No	490	15	11	*No deionised water available for D.O., results likely to be off. Rain during sampling
27 October 2023	High	Within 24hrs	Medium	9.2	Water rising whilst conducting tests	14.5	100	14.5	7.3	8*5	7	0.3	Yes	160	40	30	Rain during sampling. Creek fast running after rain
24 November 2023	High	Not Recorded	Light	16.6		21	100	18	6.8	8*4	7	0.13	Yes	400	100	72	Turbidity - water was cloudy
15 December 2023	Low	Not Recorded	Not Recorded	2.4	More washed down rubbish	23	100	20	5.2	8*3	7	0.18	Yes	650	10	1	
2 February 2024	Low	Not Recorded	Light	2.4	Small tree snapped at base leaning towards photo point	27	10	20	6.1	8*3	7	0.1	Yes	630	10	2	
23 February 2024	Medium (Normal)	Not Recorded	Heavy	35.4	Water cloudy	29	70	21	6.8	8*3	7	0.08	Yes	510	10	12	

Sample Date	Water Level	Time Since Last Rainfall	Rainfall Intensity	Rainfall Previous 72hrs (mm)	Comments	Air Temp (°C)	Cloud Cover (%)	Water Temp (°C)	D.O. (ppm)	Sulphuric Acid Drops	pH	Available Phosphate (ppm)	E.C. Probe Calibrated (Select)	E.C. (µS/cm)	Turbidity (NTU)	Turbidity - (FAU)	Sample Testing Comments
22 March 2024	Low	Within 24hrs	Light	8.6		24	100	16	7.5	8*3	7	0.03	Yes	540	10	2	
26 April 2024	Low	Not Recorded	Light	0.4		17	0	14	8.7	8*3	6.5	0.09	Yes	580	10	2	
24 May 2024	Medium (Normal)	Not Recorded	Not Recorded	0.2		15	0	12	-	-	6.5	0.01	Yes	590	10	-	Colorimeter not set up for testing, unable to do DO or Turb FAU

Traffic Lights Key

Condition:

- **Green:** All Okay
- **Orange:** Watch and Observe
- **Red:** Investigate and Act

Dissolved oxygen (ppm)	<6	6 – 7.9	>8		
pH	<5.5	5.6 – 6.4	6.5 – 8.3	8.4 – 9	>9.1
Available Phosphate (ppm)	<0.05	0.051 – 0.09	>0.091		
Electrical Conductivity (µS/cm)	0 – 400	401 – 900	>901		
Turbidity (NTU)	0 – 25	25.1 – 40	>40.1		

Actions prompted by Streamwatch results may be either short-term or long-term. If there is evidence of a significant pollution or contamination event, Streamwatch volunteers report immediately to Council for investigation and resolution in a timely manner. Spikes in available phosphate and turbidity are often caused by high rainfall events, which wash debris and urban pollutants into creeks. Similarly, low dissolved oxygen levels can result from low water flow during dry periods. Creeks, especially in urban environments, will experience peaks and troughs in water quality which can resolve naturally. If unusually high levels are observed consistently and cannot be explained by rainfall events, further investigation to identify potential sources of pollution will be undertaken. Investigations may involve Streamwatch volunteers. If an isolated pollution source is not identified and an issue is ongoing, long-term management actions such as street sweeping, stormwater management controls and Water Sensitive Urban Design (WSUD) features can be considered.

