Mokauiti-Aria – Quarterly River Monitoring

Sample Collection Day: 13th August 2024

Water quality was Good at Whareroa stream and Fair elsewhere. E. coli, DIN and suspended sediment were elevated at different sites.

E. coli concentrations were very low at 3 sites (≤ 170) and slightly elevated at 22-Huioteko stream (340). All sites fell within recommend health limits for swimming (540). **Nitrate** concentrations were very low at all sites, and well below ecological toxicity levels (2.4 mg/L). Nitrates were lowest at 23-Whareroa stream (0.20 mg/L) and highest at 27-Ramaroa stream (0.56 mg/L). **Ammonia** concentrations were low at all sites (≤ 0.03 mg/L). **Dissolved inorganic nitrogen (DIN)** was low at most sites (≤ 0.45 mg/L) and slightly elevated at 27-Ramaroa Stream (0.56 mg/L). DIN concentrations greater than 0.5 mg/L can cause ecological impacts like excessive growth of algae and aquatic plants, and loss of sensitive species. **Dissolved reactive phosphorus** concentrations were low at all sites (≤ 0.005 mg/L). **Water clarity** was good at 3 sites (≥ 0.85 m) but was poor at 28-Mokauiti stream (0.64 m), relative to the national bottom line (NBL). Note the NBL is 1.34 m at 28-Mokauiti Stream and 0.61 m at all other sites.

Mokauiti-Aria	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
Sample Date: 13-Aug-24 Lab: Analytica	E. coli/100 ml	Nitrates Toxicity (mg N/L)	Ammonia Toxicity (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L)[2]	Dissolved Reactive Phosphorus (mg/L)	Water Clarity (m)[1]	National Bottom Line
22-Huioteko Stm-248	340	0.42	0.03	0.45	0.002	0.85	0.61
23-Whareroa Stm-231	16	0.20	0.009	0.21	<0.002	1.31	0.61
27-Ramaroa stream	170	0.56	0.007	0.56	0.005	1.45	0.61
28-Mokauiti stream	100	0.27	0.03	0.30	0.003	0.64	1.34

Attribute Band		
A	Ecosystem Health	Human Contact
B		
C		
D		
E	Human Contact only	

[1]Water clarity has been converted from measured turbidity using the formular ln(CLAR) = 1.21 – 0.72 ln(TURB) (Franklin, Booker & Stoffels, 2020).

[2]Guideline values to assess ecological impacts of nitrogen on freshwater life. Attribute band limits are from the NPS-FM consultation draft (2019)

Mokau River – *Summary of water quality collected at 15 sites across the Mokau River catchment on 13th August 2024*

E. coli, ammonia and dissolved reactive phosphorus were low at most sites. The key contaminants were suspended sediment and nitrate.

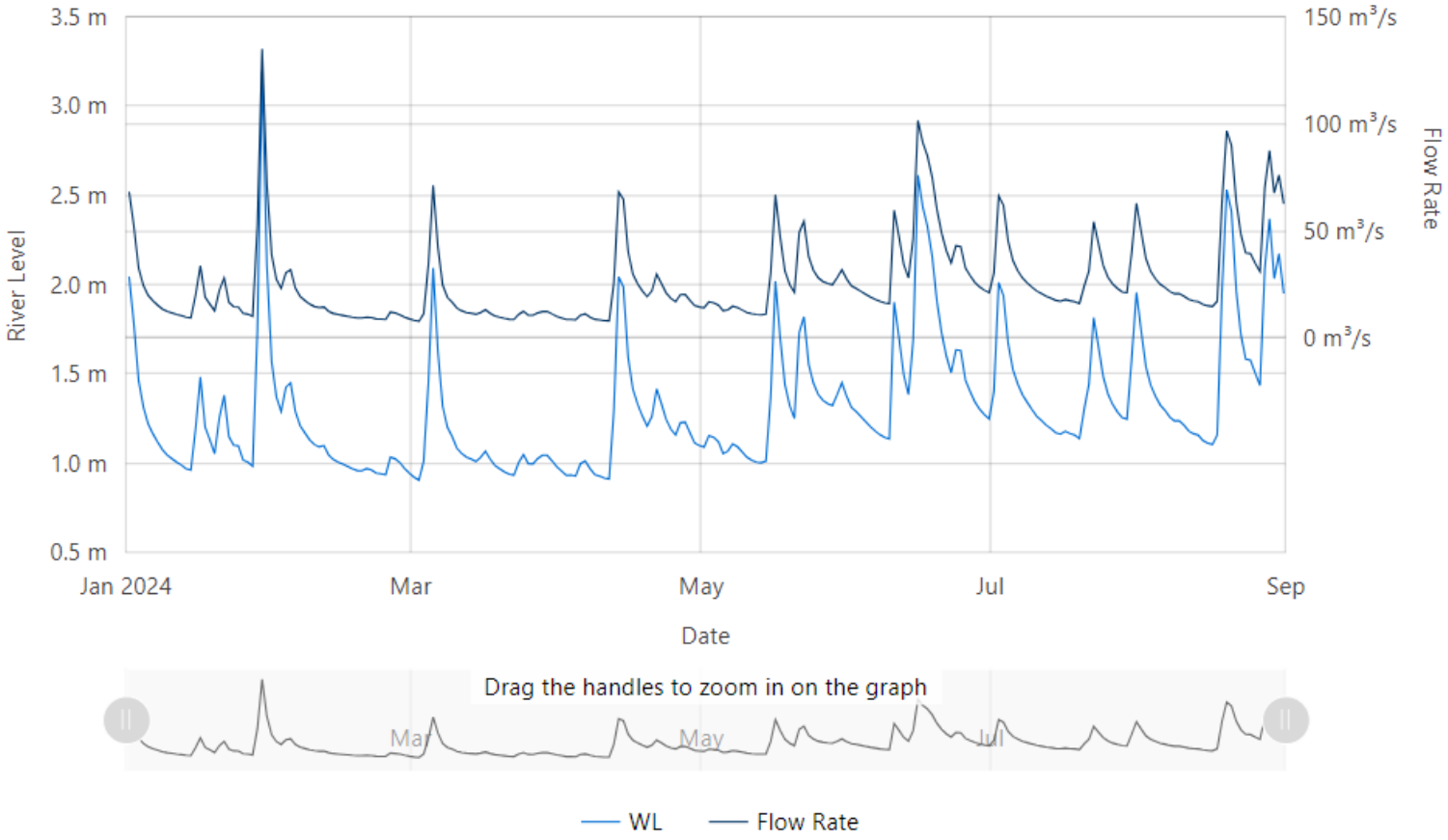
***E. coli*:** 73% of all sites had low concentrations (≤210), while 27% (4 sites) had slightly elevated concentrations (between 310 to 410). **Nitrate and Ammonia:** 100% of sites were well below toxicity levels. Nitrate range (0.2 – 0.92 mg/L); Ammonia range (<0.005 - 0.03). **Dissolved inorganic nitrogen (DIN):** 53% of sites had low concentrations (≤0.47 mg/L) and 47% fell above the ecological impact threshold of 0.5 mg/L. The highest DIN concentration was 0.93 mg/L. **Dissolved reactive phosphorus**: 93% of sites had low concentrations (between <0.002 to 0.009 mg/L), 7% (1 site) had slightly elevated concentrations 0.012 mg/L. **Water clarity:** 27% (4 sites) had good water clarity (A or B band), 7% (1 site) had reduced water clarity (C band) and the remaining 67% had poor water clarity

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

(D band). Bands for each site relate to the national bottom line (NBL) for water clarity and are dependent on landscape characteristics including geology, climate and elevation. The NBL for Mokau River's monitoring sites are either 1.34 m or 0.61 m, dependant on the local landscape characteristics.

River Level and Flow Rate – Mokau River, Totoro Road

The below charts present continuous data collected by the Waikato Regional Council for Mokau River between 1st January and 31st August 2024. River Level and Flow Rate on the day of sampling (13-August) are highlighted on the second chart.



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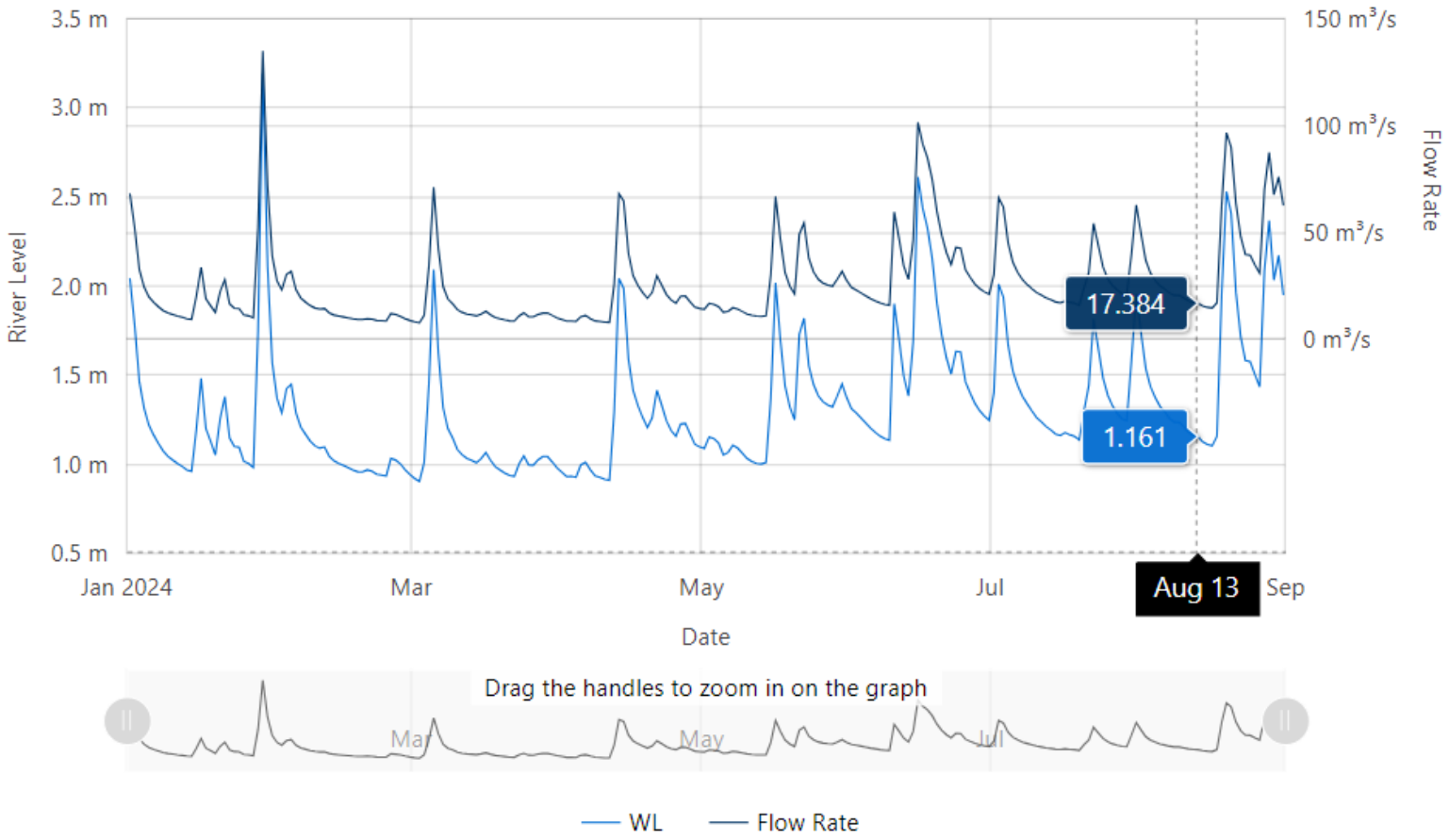

Data source: Waikato Regional Council [envirohub website] for environmental data.

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