

Mangaotaki-Mairoa – Quarterly River Monitoring

Sample Collection Day: 14th May 2023

E. coli concentrations were low at all sites (≤ 230). **Nitrate** concentrations were below toxicity levels at all sites, being lowest at 29-Pungaki Stream (0.83 mg/L) and highest at 30-Kihikihi Stream (1.09 mg/L). **Ammonia** concentrations were exceptionally low at all sites (< 0.005 mg/L). All sites had **dissolved inorganic nitrogen** concentrations exceeding 0.5 mg/L, potentially impacting the health of the river. **Dissolved reactive phosphorus** concentrations were low at 9-Kihikihi Stream and 29-Pungaki Stream (≤ 0.006 mg/L) and elevated at all other sites (≥ 0.011 mg/L). **Water clarity** was excellent at 29-Pungaki Stream (3.24 m) and poor at all other sites (≤ 1.39 m), relative to the national bottom line (1.34 m).

Mangaotaki-Mairoa	Human Contact	Ecosystem Health						Attribute Band
		Water Quality				Sediment		
Sample Dates: 14-May-23 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	
9-Kihikihi Stm-232	170	0.84	<0.005	0.84	0.006	1.03	1.34	A
10-Waitanguru Stm-376	170	0.84	<0.005	0.84	0.014	1.39	1.34	B
11-Mangaotaki R.	160	0.84	<0.005	0.84	0.011	0.70	1.34	C
29-Pungaki Stm	51	0.83	<0.005	0.83	<0.002	3.24	1.34	D
30-Kihikihi Stm	230	1.09	<0.005	1.09	0.011	0.62	1.34	E

¹Water clarity has been converted from measured turbidity using the formular $\ln(\text{CLAR}) = 1.21 - 0.72 \ln(\text{TURB})$ (Franklin, Booker & Stoffels, 2020).

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

Mokau River – All sites in all sub-catchments

The below results summarise results collected across the Mokau River catchment from 27 sites sampled on either the 8th or 14th of May:

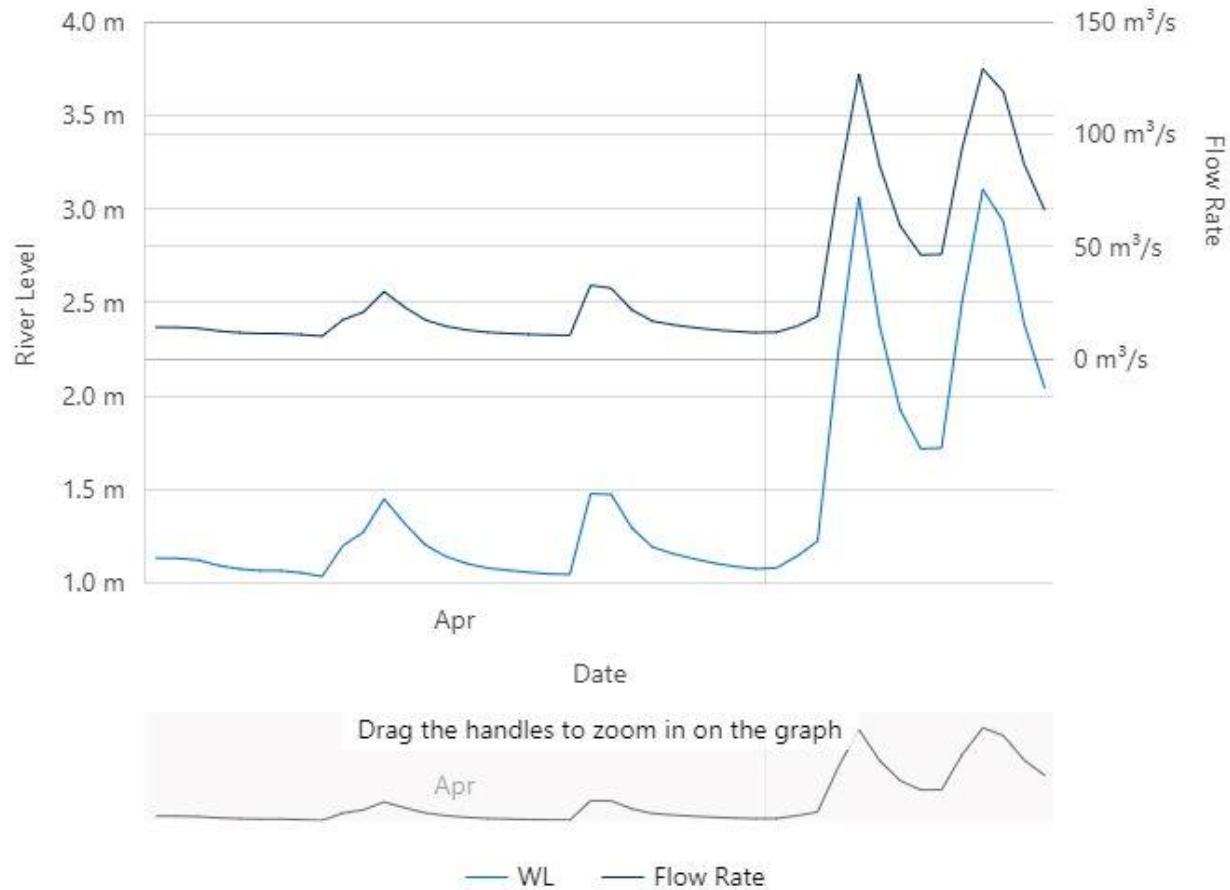
E. coli: 58% of all sites had low concentrations (≤ 260) and 42% had slightly elevated concentrations (between 270 - 360).

Nitrate and Ammonia: 100% of sites had concentrations below toxicity levels (Nitrate ≤ 2.39 mg/L; Ammonia ≤ 0.04). However, 67% of sites had Dissolved Inorganic Nitrogen (DIN) concentrations over 0.5 mg/L. Ecological impacts, including problematic growth of algae and/or aquatic plants and loss of sensitive aquatic species are likely when the combined concentration of DIN regularly exceed 0.5 mg/L.

Dissolved reactive phosphorus: 83% of sites had low concentrations (≤ 0.009 mg/L) and 17% of sites had elevated concentrations (0.011 – 0.017 mg/L).

Water clarity: 8% of sites had good water clarity (A or B band), 8% had moderate clarity (C band) and 83% of sites had poor clarity (D band). Bands for each site relate to the national bottom line for water clarity, which is either 1.34 m or 0.61 m, and is dependent on the local geology, climate and elevation.

River Level: Mokau River - Totoro Rd Recorder



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

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