

Mid Mokau-Pio Pio – Quarterly River Monitoring

Sample Collection Day: 8th & 14th May 2023

E. coli concentrations were low at 3 out of 6 sites (≤ 260) and elevated at the other 3 sites (≥ 270). **Nitrate** concentrations were below toxicity levels at all sites being lowest at 15-Mapara Stream (0.38 mg/L) and highest at 12-Mangakowhai Stream (2.39 mg/L). **Ammonia** concentrations were low at 5 sites (< 0.02 mg/L) and highest at 14-Mangapehi River HW4 (0.04 mg/L). Five sites (all except 15-Mapara Stream) had **dissolved inorganic nitrogen** concentrations exceeding 0.5 mg/L, potentially impacting the health of the river. **Dissolved reactive phosphorus** concentrations were low at 5 out of 6 sites (≤ 0.008 mg/L) and elevated at 12-Mangakowhai Stream (0.017 mg/L). **Water clarity** was poor at all sites (≤ 0.65 m), relative to the national bottom line (1.34 m).

Mid Mokau-Pio Pio	Human Contact E. coli/100 ml	Ecosystem Health						Attribute Band
		Water Quality				Sediment		
		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	
Sample Dates: 8 & 14-May-23 Lab: Analytica								
7-Mokau R, above Wairere Dam	340	0.84	0.01	0.85	0.006	0.22	1.34	A
12-Mangakowhai Strm-344	140	2.39	<0.005	2.39	0.017	0.51	1.34	B
13-Mokau R. HWY 4	260	0.66	0.008	0.67	0.005	0.65	1.34	C
14-Mangapehi R. HWY 4	240	0.70	0.04	0.74	0.005	0.29	1.34	D
15-Mapara Stm	330	0.38	<0.005	0.38	0.005	0.47	1.34	E
16-Mokau R. @ Piopio domain	270	1.11	0.02	1.13	0.008	0.27	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:

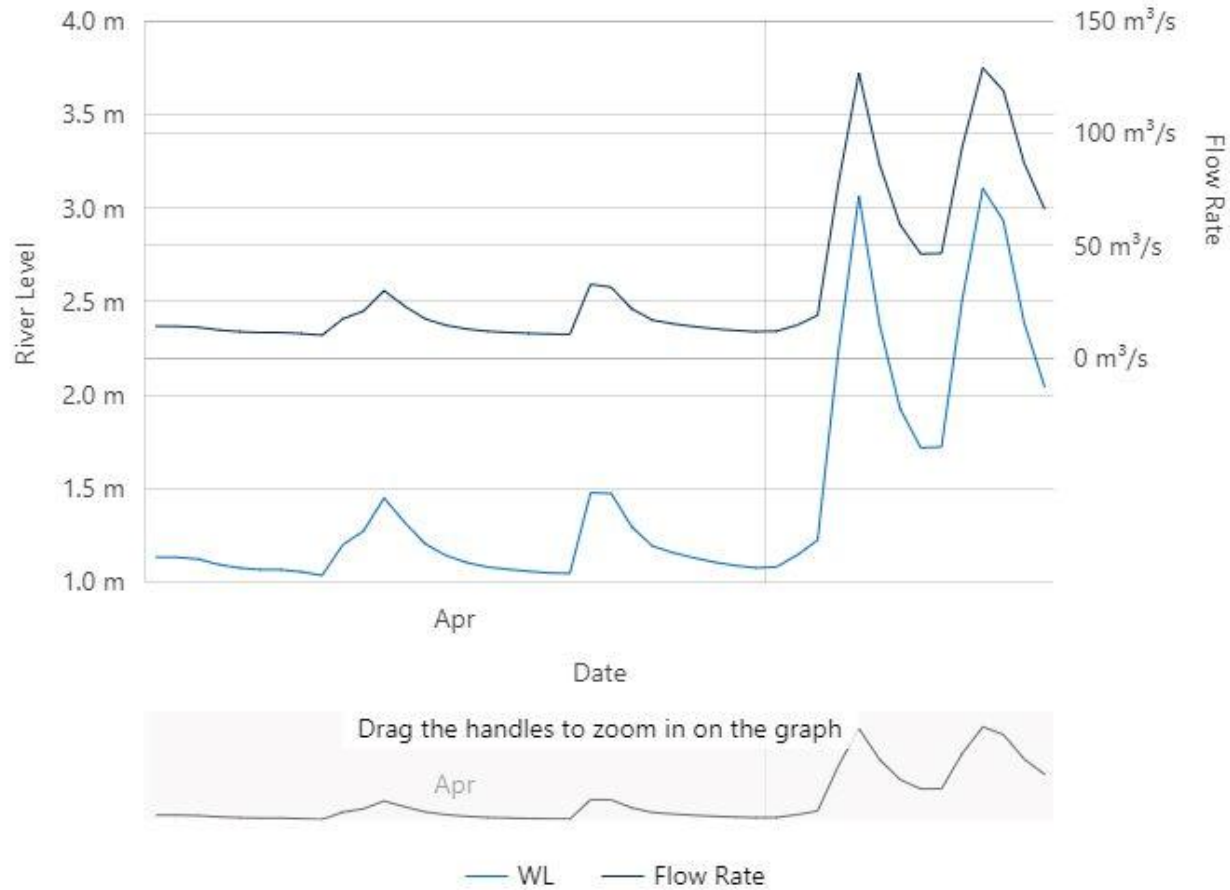
E. coli: 58% of all sites had low concentrations (≤ 260) and 42% had slightly elevated concentrations (between 270 - 360).

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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