Upper Mokau & Mangapehi – Quarterly River Monitoring

Sample Collection Day: 8th & 14th May 2023

E. coli concentrations were low at 3 out of 4 sites (≤ 260) and were elevated at 18-Mangapehi River (310). **Nitrate** concentrations were below toxicity levels at all sites being lowest at 17-Paritikona Stream (0.40 mg/L) and highest at 14-Mangapehi River HWY 4 (0.70 mg/L). **Ammonia** concentrations were low at 3 sites (≤ 0.02 mg/L) and higher at 14-Mangapehi River HWY 4 (0.04 mg/L). Three out of four sites (all except 17-Paritikona 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 all sites (≤ 0.008 mg/L). Water clarity was poor at all sites (≤ 0.71 m), relative to the national bottom line (1.34 m).

Upper Mokau-Mangapehi	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
Sample Dates: 8 & 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
13-Mokau R. HWY 4	260	0.66	0.008	0.67	0.005	0.65	1.34
14-Mangapehi R. HWY 4	240	0.70	0.04	0.74	0.005	0.29	1.34
17-Paritikona Stm	240	0.40	0.006	0.40	0.005	0.71	1.34
18-Mangapehi R.	310	0.65	0.02	0.67	0.008	0.59	1.34

Attribute Band
A
B
C
D
E

[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 – 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:

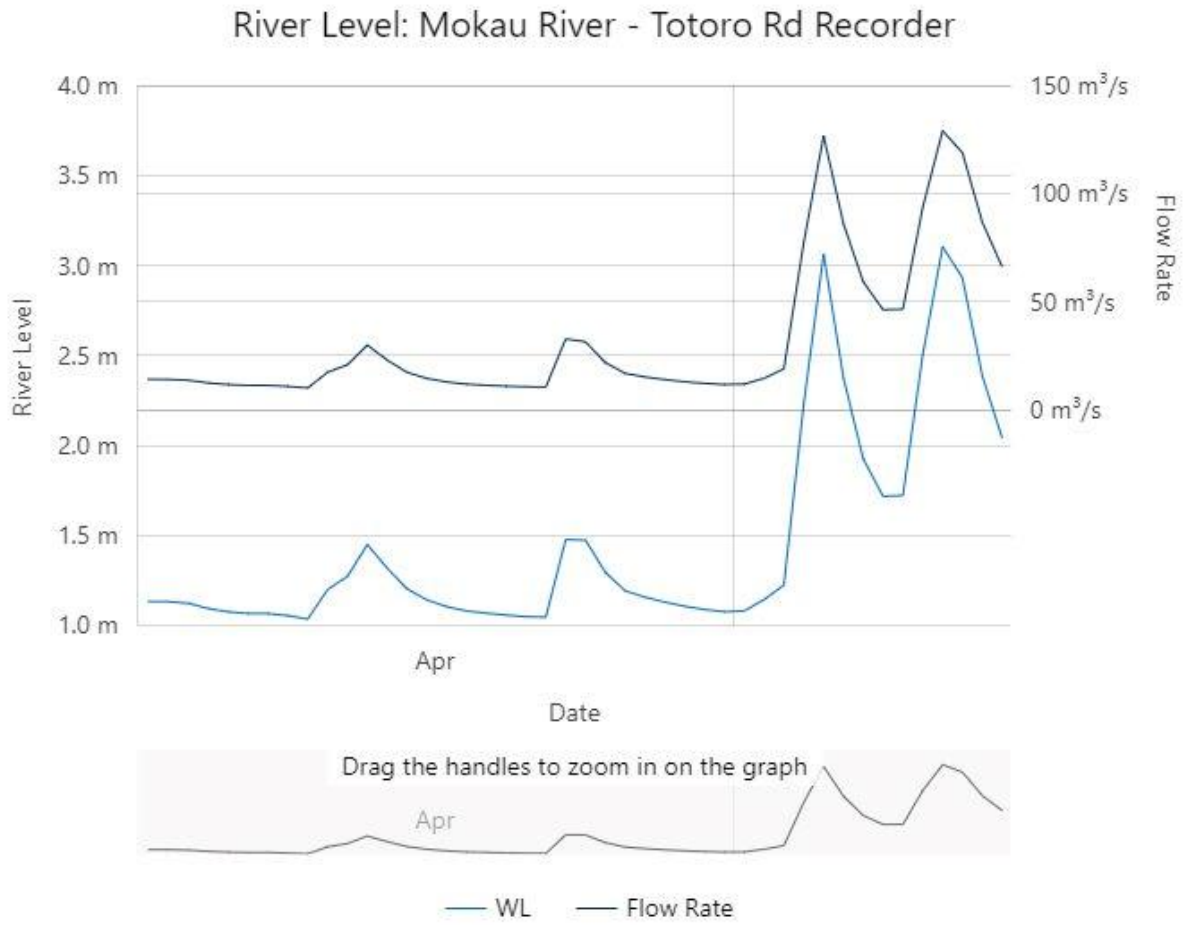
***E. coli*:** 58% of all sites had low concentrations (≤260) and 42% had slightly elevated concentrations (between 270 - 360).

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.

Prepared by Freshwater Ecologist Merrin Whatley (PhD)



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

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