Upper Mapiu-Mapara – Quarterly River Monitoring

Sample Collection Day: 8th May 2023

E. coli was exceptionally low at 21-Waewaepitau Stream (15), while concentrations were elevated at all other sites (≥ 300). **Nitrate** concentrations were below toxicity levels at all sites being lowest at 21-Waewaepitau Stream (0.10 mg/L) and highest at 26-Puputaha Stream (0.51 mg/L). **Ammonia** concentrations were low at all sites (≤ 0.02 mg/L). 26-Puputaha Stream had a **dissolved inorganic nitrogen** concentration exceeding 0.5 mg/L, potentially impacting the health of the river. **Dissolved reactive phosphorus** concentrations were exceptionally low at all sites (≤ 0.006 mg/L). **Water clarity** was highest at 21-Waewaepitau Stream (1.50 m) but scored poorly at all sites, relative to the national bottom line (1.34 m).

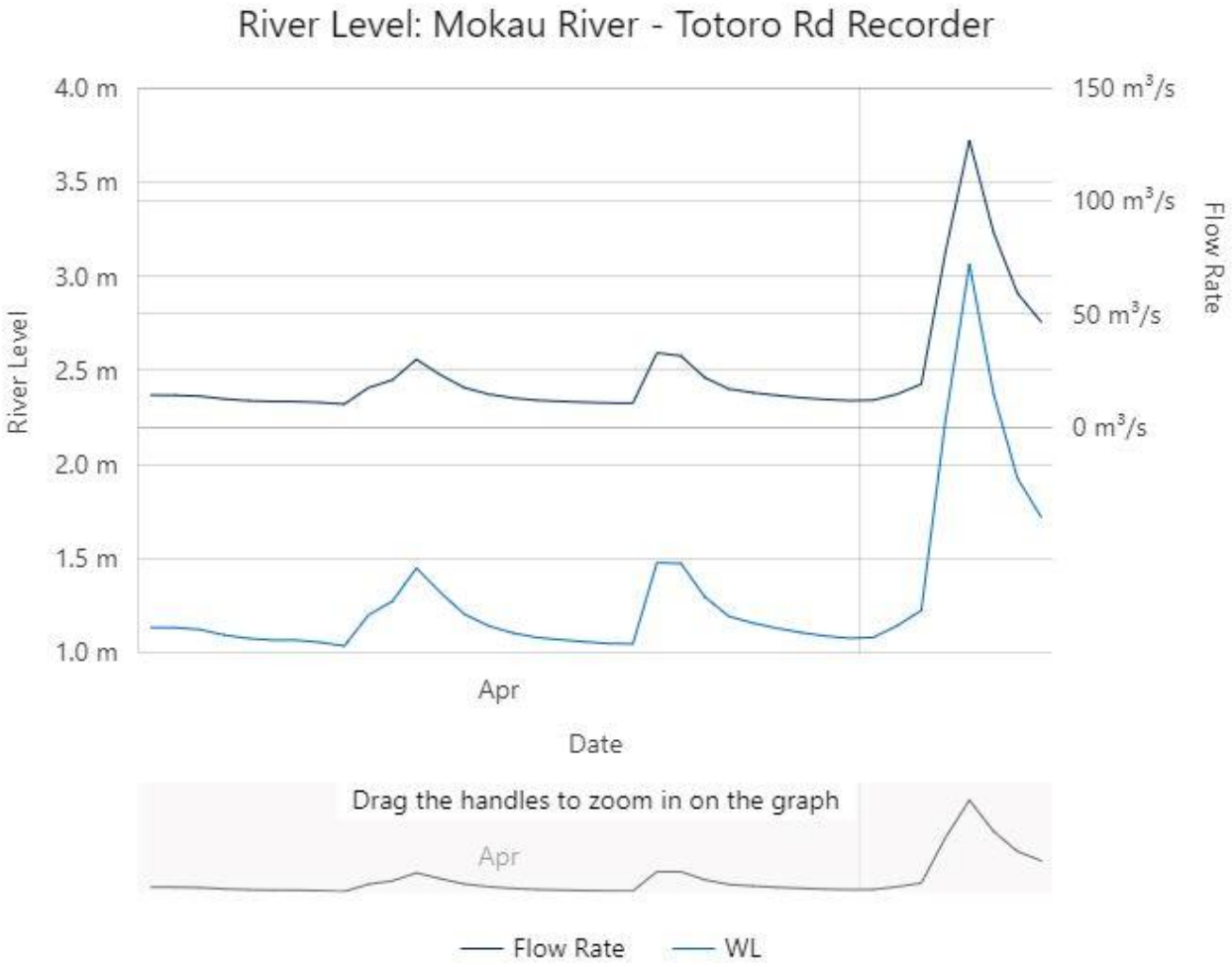
Mapiu-Mapara	Human Contact	Ecosystem Health						Attribute Band
		Water Quality				Sediment		
Sample Dates: 8-May-23 Lab: Analytica	E. coli/100 ml	Nitrates Toxicity (mg N/L)	Ammonia Toxicity (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L)[2]	Dissolved Reactive Phosphorus (mg/L)	Water Clarity (m)[1]	National Bottom Line	
15-Mapara Stm	330	0.38	<0.005	0.38	0.005	0.47	1.34	
19-Mangaiti Stm	350	0.36	0.02	0.38	<0.002	0.25	1.34	A
20-Mapiu Stm	330	0.42	0.02	0.44	0.003	0.23	1.34	B
21-Waewaepitau Stm	15	0.10	<0.005	0.10	0.005	1.50	1.34	C
25-Mapiu Stm - Waitataura Rd	360	0.42	0.02	0.44	0.004	0.31	1.34	D
26-Puputaha Stream	300	0.51	0.007	0.52	0.006	1.13	1.34	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)



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

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