

Mid Mokau-Pio Pio – Quarterly River Monitoring

Sample Collection Day: 12th & 13th September 2023

Overall, water quality was fairly good across sites on the 12th and 13th September. *E. coli* and nutrients were low at most sites, while suspended sediment was elevated at many sites and dissolved inorganic nitrogen were slightly elevated at two sites.

E. coli concentrations were low at 3 out of 4 sites (≤ 170) and elevated at 15-Mapara stream (310). **Nitrate** concentrations were below toxicity levels at all sites being lowest at 13-Mokau R. HWY 4 (0.38 mg/L) and highest at 7-Mokau R, above Wairere Dam (0.59 mg/L). **Ammonia** concentrations were low at all sites (< 0.02 mg/L). Two 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 all sites (≤ 0.005 mg/L). **Water clarity** was very good at 13-Mokau R. HWY 4 (1.92 m) and poor at all other sites (≤ 1.25 m), relative to the national bottom line (1.34 m).

Mid Mokau-Pio Pio	Human Contact	Ecosystem Health					
		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: 12 & 13-Sep-23 Lab: Analytica	E. coli/100 ml						
7-Mokau R, above Wairere Dam	160	0.59	0.02	0.61	0.005	0.83	1.34
13-Mokau R. HWY 4	130	0.38	<0.005	0.38	0.003	1.92	1.34
14-Mangapehi R. HWY 4	170	0.50	0.007	0.51	0.005	1.25	1.34
15-Mapara Stm	310	0.40	0.01	0.41	0.004	0.60	1.34

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

¹Water clarity has been converted from measured turbidity using the formula $\ln(\text{CLAR}) = 1.21 - 0.72 \ln(\text{TURB})$ (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

Summary of water quality collected at 16 sites located across the Mokau River catchment sampled on 12th or 13th of September.

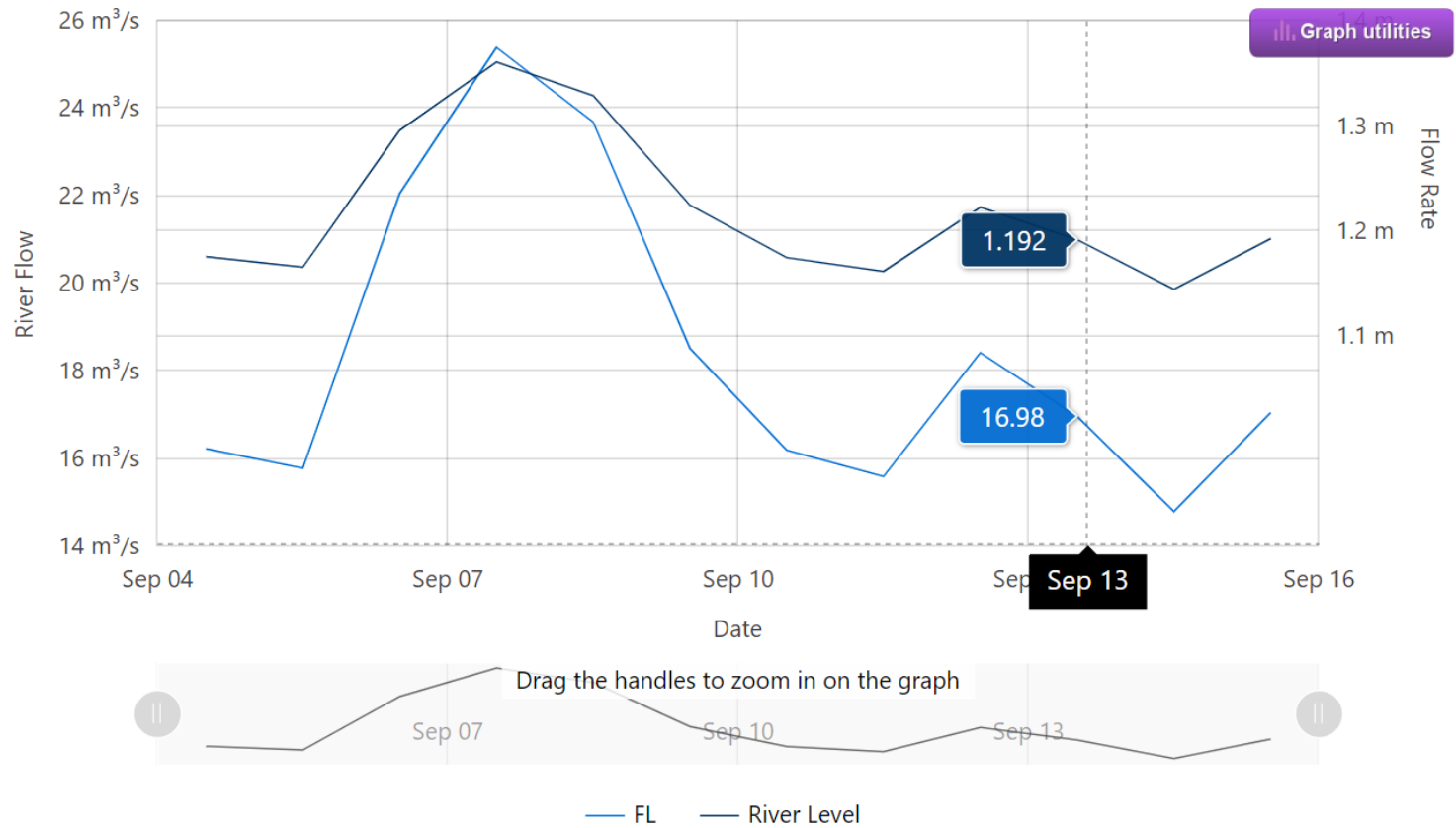
E. coli: 63% of all sites had low concentrations (≤ 220), 25% had slightly elevated concentrations (between 270 - 380) and 13% of sites had elevated concentrations (> 550). **Nitrate and Ammonia**: 100% of sites had concentrations below toxicity levels (Nitrate ≤ 0.79 mg/L; Ammonia ≤ 0.09). However, 50% 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: 94% of sites had low concentrations (≤ 0.009 mg/L) and one site (16%) had an elevated concentration (0.011 mg/L).

Water clarity: 56% of sites had good water clarity (A or B band) and 44% 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.

Scale:

- Logarithmic Scale Display River Level



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

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