Mapiu-Mapara – Quarterly River Monitoring

Sample Collection Day: 19th November 2024

Water quality was Fair. E. coli was and suspended sediment were elevated, nitrogen indicators were low at all sites while dissolved reactive phosphorus was elevated at 50% of sites.

E. coli was elevated at all sites (between 470 and 1,500). Three out of four sites fell above the recommended health levels for swimming (540). *E .coli* concentrations were lowest at 15-Mapara stream and highest at 19-Mangaiti stream. **Nitrate** concentrations were low at all sites and well below ecological toxicity levels (2.4 mg/L). Nitrates were lowest at 19-Mangaiti stream (0.21 mg/L) and highest at 26-Puputaha stream (0.38 mg/L). **Ammonia** concentrations were low at all sites (≤ 0.010 mg/L). **Dissolved inorganic nitrogen** was low at all sites (≤ 0.39 mg/L) being lowest at 19-Mangaiti stream (0.22 mg/L) and highest at 26-Puputaha stream (0.39 mg/L). **Dissolved reactive phosphorus** concentrations were very low at two sites (≤ 0.003 mg/L) but were elevated in 15-Mapara stream (0.017 mg/L) and were very high in 26-Puputaha stream (0.024 mg/L), suggesting a direct input of phosphorus upstream of this latter site. **Water clarity** was poor at all sites (≤ 1.01 m), relative to the national bottom line (1.34 m). Water clarity was lowest at 15-Mapara stream (0.23 m) and highest at 26-Puputaha stream (1.01 m).

Mapiu-Mapara	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
Sample Dates: 19-Nov-24 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	470	0.31	0.008	0.32	0.017	0.23	1.34
19-Mangaiti Stm	1500	0.21	0.01	0.22	<0.002	0.56	1.34
20-Mapiu Stm	960	0.31	0.01	0.32	0.003	0.56	1.34
26-Puputaha Stream	1000	0.38	0.009	0.39	0.024	1.01	1.34

[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)

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

Mokau River – *Summary of water quality collected at 15 sites across the Mokau River catchment on 19th November 2024*

E. coli and suspended sediment were elevated across most sites and a third of all sites had elevated concentrations of dissolved inorganic nitrogen. While dissolved reactive phosphorus (DRP) was generally low, very high DRP concentrations were recorded at several locations.

***E. coli*:** 73% of sites had elevated concentrations (between 610 and 1,500), 20% (3 sites) had slightly elevated concentrations (between 370 and 470), while only 7% (1 site) had a low concentration (≤ 110). **Nitrate and Ammonia:** 100% of sites were well below toxicity levels. Nitrate range (0.13 – 0.80 mg/L);

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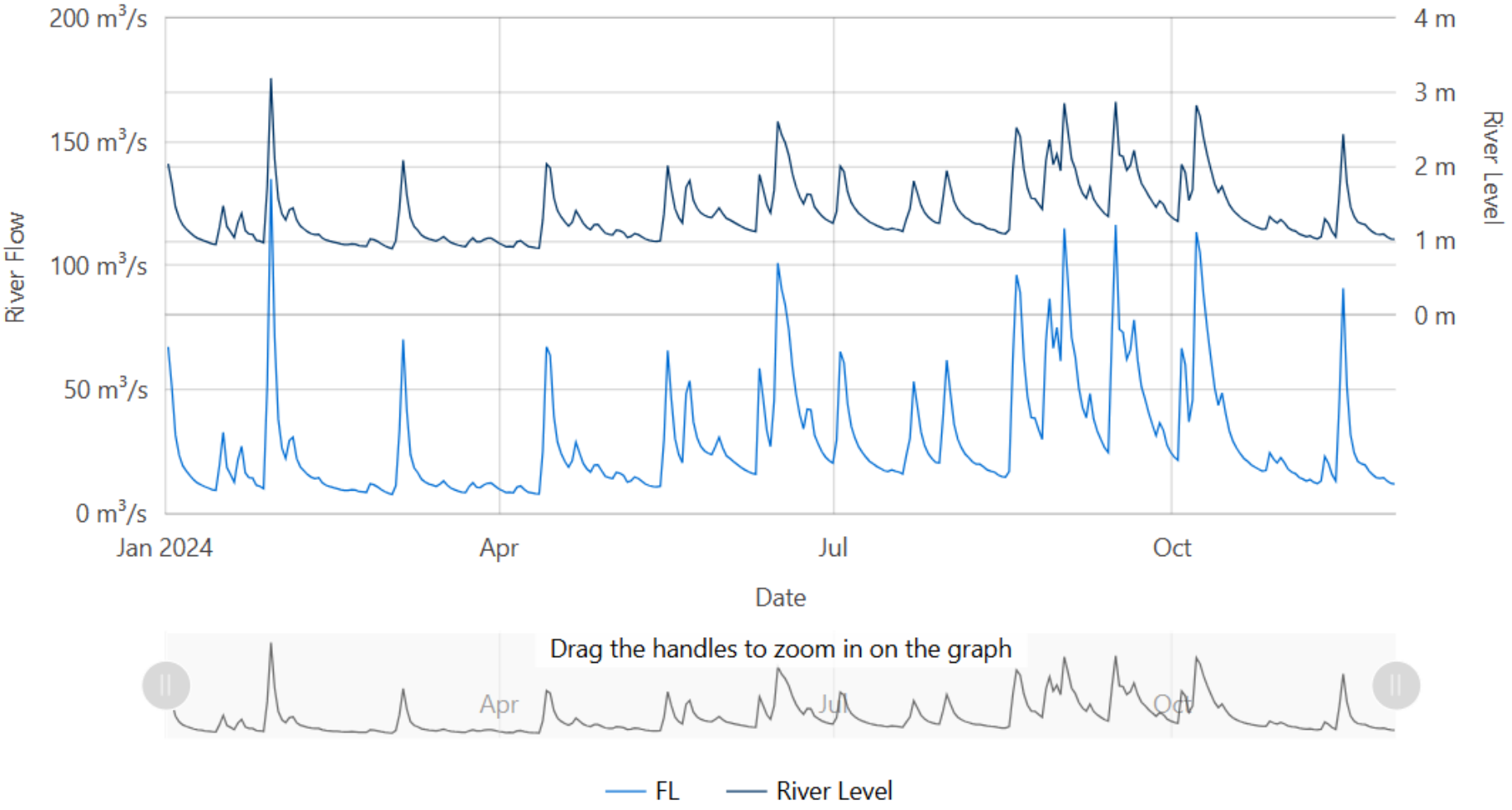
Ammonia range (<0.005 - 0.05). **Dissolved inorganic nitrogen (DIN):** 67% of sites had low concentrations (≤ 0.46 mg/L) and 33% were slightly elevating, falling above the ecological impact threshold of 0.5 mg/L (between 0.54 and 0.81 mg/L). The highest DIN concentration recorded across the Mokau River catchment was 0.81 mg/L. **Dissolved reactive phosphorus**: 73% of sites had low concentrations (between <0.002 to 0.010 mg/L), 7% (1 site) was slightly elevated (0.017 mg/L) and 20% (3 sites) had very high concentrations (between 0.019 and 0.065 mg/L). **Water clarity:** 13% (2 sites) had good water clarity (A or B band), 13% (2 sites) had reduced water clarity (C band) and the remaining 73% had poor water clarity (D band). Bands for each site relate to the national bottom line (NBL) for water clarity and are dependent on landscape characteristics including geology, climate and elevation. The NBL for Mokau River's monitoring sites are either 1.34 m or 0.61 m, dependant on the local landscape characteristics.

River Level and Flow Rate – Mokau River, Totoro Road

The below charts present continuous data collected by the Waikato Regional Council for Mokau River between 1st January and 30th November 2024. River Level and Flow Rate on the day of sampling (19-November) are highlighted on the second chart.



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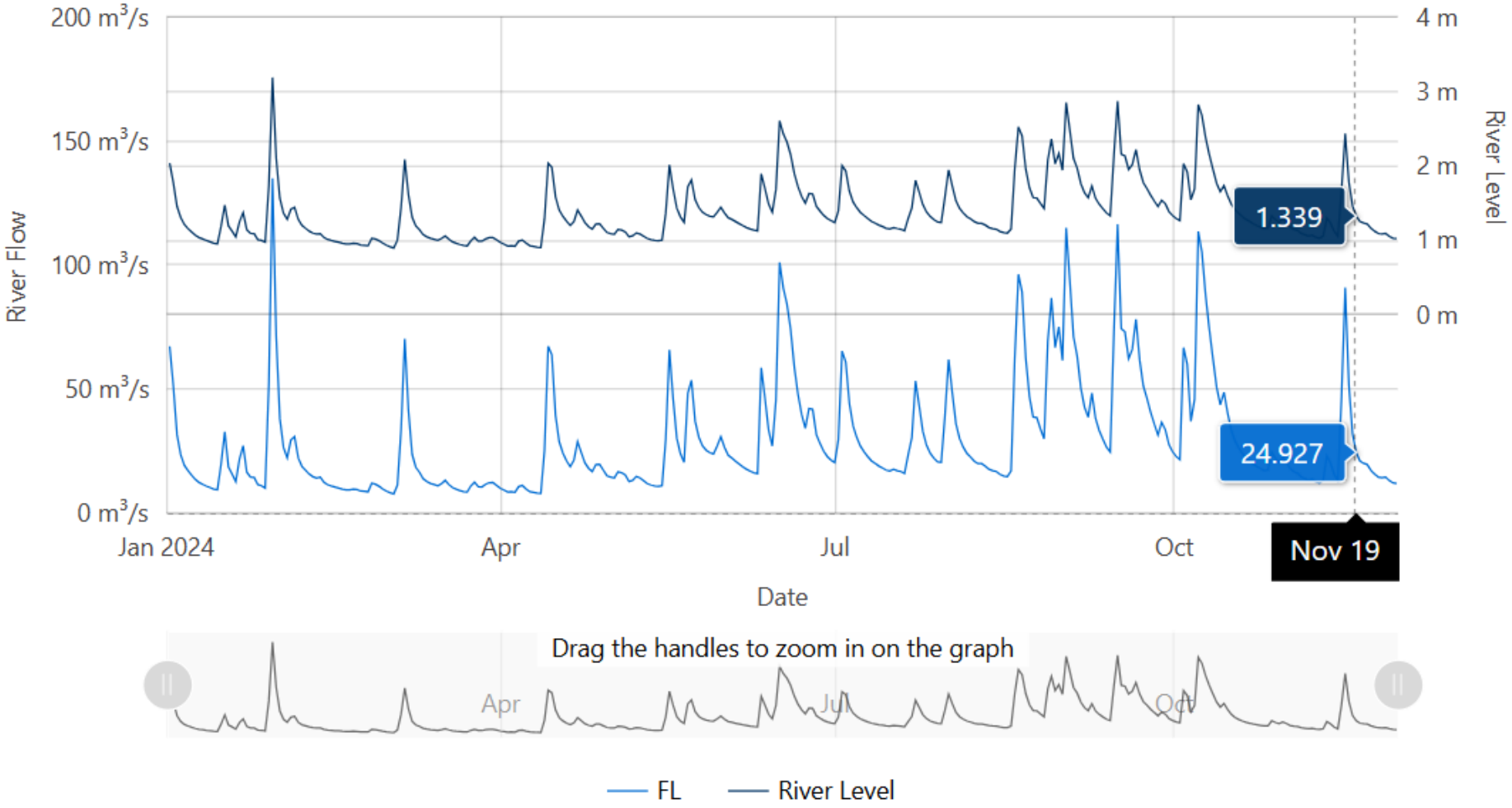

Data source: Waikato Regional Council [envirohub website] for environmental data.

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