Mokauiti-Aria – Quarterly River Monitoring

Sample Collection Day: 19th November 2024

Water quality was Excellent at Whareroa stream and Fair elsewhere. E. coli, dissolved inorganic nitrogen and suspended sediment were elevated, albeit at different sites.

E. coli concentrations were very low at Whareroa stream (≤ 110) but were elevated at the other three sites (between 740 and 840) were they fell above the recommend health limits for swimming (540). The highest *E. coli* concentration was recorded for 22-Huioteko stream. **Nitrate** concentrations were low at all sites, and well below ecological toxicity levels (2.4 mg/L). Nitrates were lowest at 23-Whareroa stream (0.13 mg/L) and highest at 27-Ramaroa stream (0.54 mg/L). **Ammonia** concentrations were low at all sites (≤ 0.05 mg/L). **Dissolved inorganic nitrogen (DIN)** was very low at three sites (≤ 0.24 mg/L) and slightly elevated at 27-Ramaroa Stream (0.54 mg/L). DIN concentrations greater than 0.5 mg/L can cause ecological impacts like excessive growth of algae and aquatic plants, and loss of sensitive species. **Dissolved reactive phosphorus** concentrations were low at all sites (≤ 0.007 mg/L). **Water clarity** was good at 2 sites (≥ 0.91 m) and poor at two sites (≤ 0.69 m), relative to the national bottom line (NBL). Note the NBL is 1.34 m at 28-Mokauiti Stream and 0.61 m at all other sites.

Mokauiti-Aria	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
Sample Date: 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
22-Huioteko Stm-248	840	0.19	0.05	0.24	0.006	0.69	0.61
23-Whareroa Stm-231	110	0.13	<0.005	0.13	<0.002	1.36	0.61
27-Ramaroa stream	820	0.54	<0.005	0.54	0.007	0.91	0.61
28-Mokauiti stream	740	0.15	0.02	0.17	0.005	0.42	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); 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

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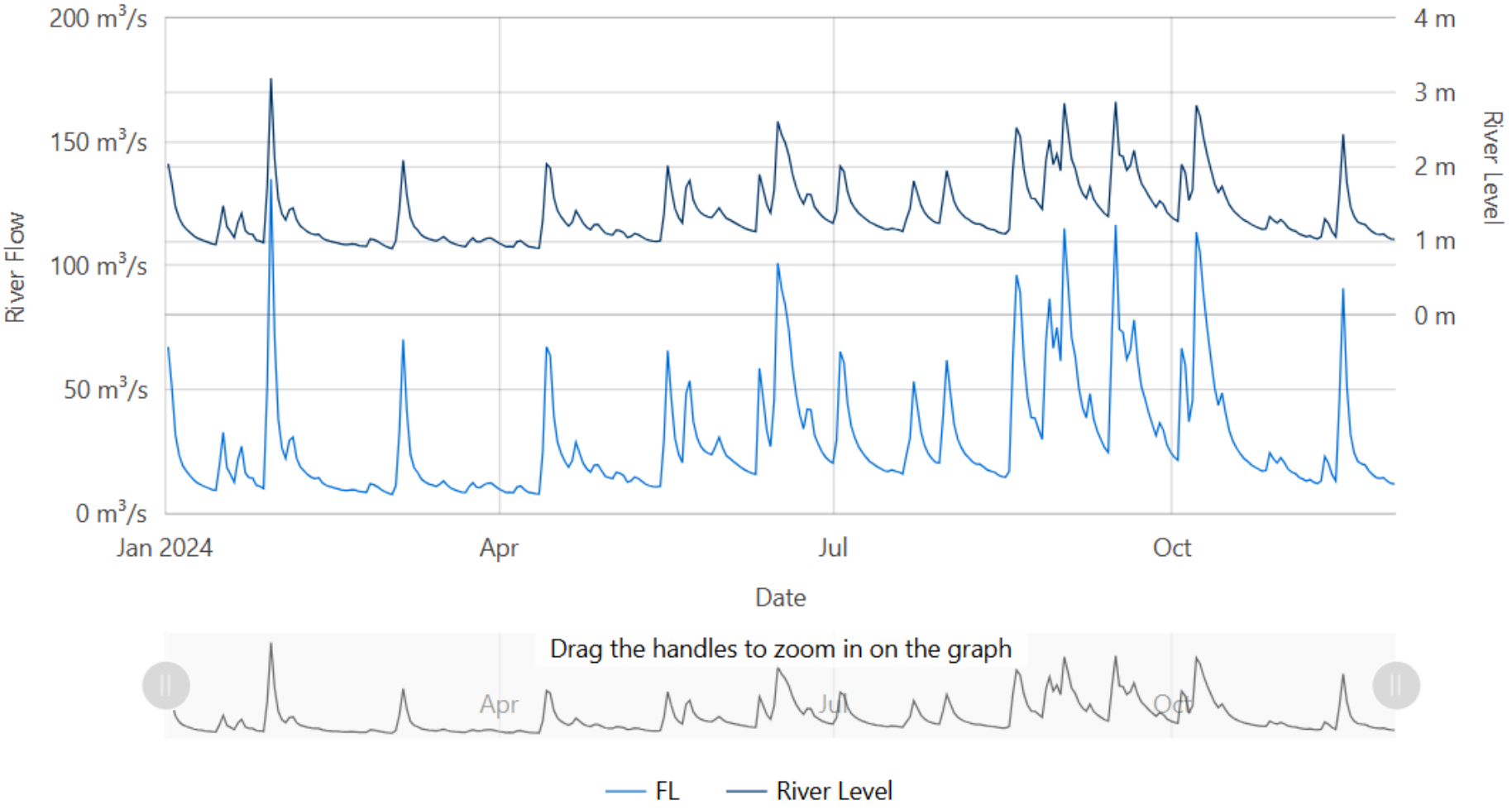
above the ecological impact threshold of 0.5 mg/L (between 0.54 and 0.81 mg/L). The highest DIN concentration recorded across the Mokau River catchment was 0.81 mg/L. Dissolved reactive phosphorus: 73% of sites had low concentrations (between <0.002 to 0.010 mg/L), 7% (1 site) was slightly elevated (0.017 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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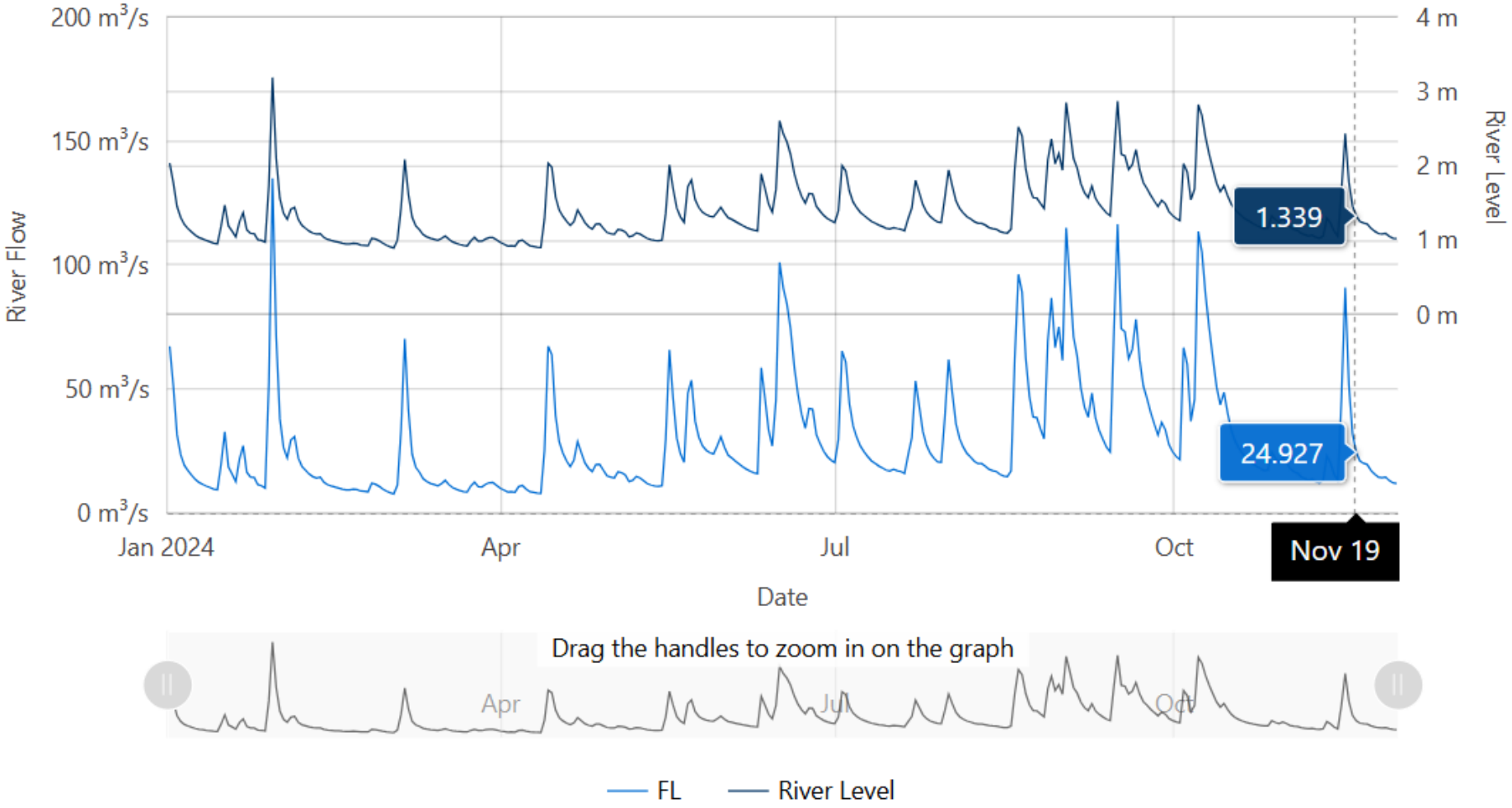

Data source: Waikato Regional Council [envirohub website] for environmental data.

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