

Mokauiti-Aria – Quarterly River Monitoring

Sample Collection Day: 13th November 2023

Overall, water quality was good at across Mokauiti-Aria except for slightly elevated *E. coli* and poor water clarity at one site.

E. coli concentrations were low at 3 out of 4 sites (≤ 170) and slightly elevated at 28-Mokauiti Stream (280). **Nitrate** concentrations were well below toxicity levels at all sites, being lowest at 28-Mokauiti Stream (0.11 mg/L) and highest at 27-Ramaroa Stream (0.29 mg/L). **Ammonia** concentrations were low at all sites (≤ 0.01 mg/L). **Dissolved inorganic nitrogen** was low at all sites (≤ 0.29 mg/L). **Dissolved reactive phosphorus** concentrations were low at all sites (≤ 0.01 mg/L). **Water clarity** was good at 3 out of 4 sites (between 0.85 m and 1.17 m) and poor at 28-Mokauiti stream (0.76 m), relative to the national bottom line (NBL). 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	
		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 Date: 13-Nov-23 Lab: Analytica	E. coli/100 ml						
22-Huioteko Stm-248	170	0.18	0.01	0.19	0.004	0.85	0.61
23-Whareroa Stm-231	150	0.15	<0.005	0.15	<0.002	1.17	0.61
27-Ramaroa stream	120	0.29	<0.005	0.29	0.01	1.15	0.61
28-Mokauiti stream	280	0.11	0.01	0.12	0.004	0.76	1.34

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

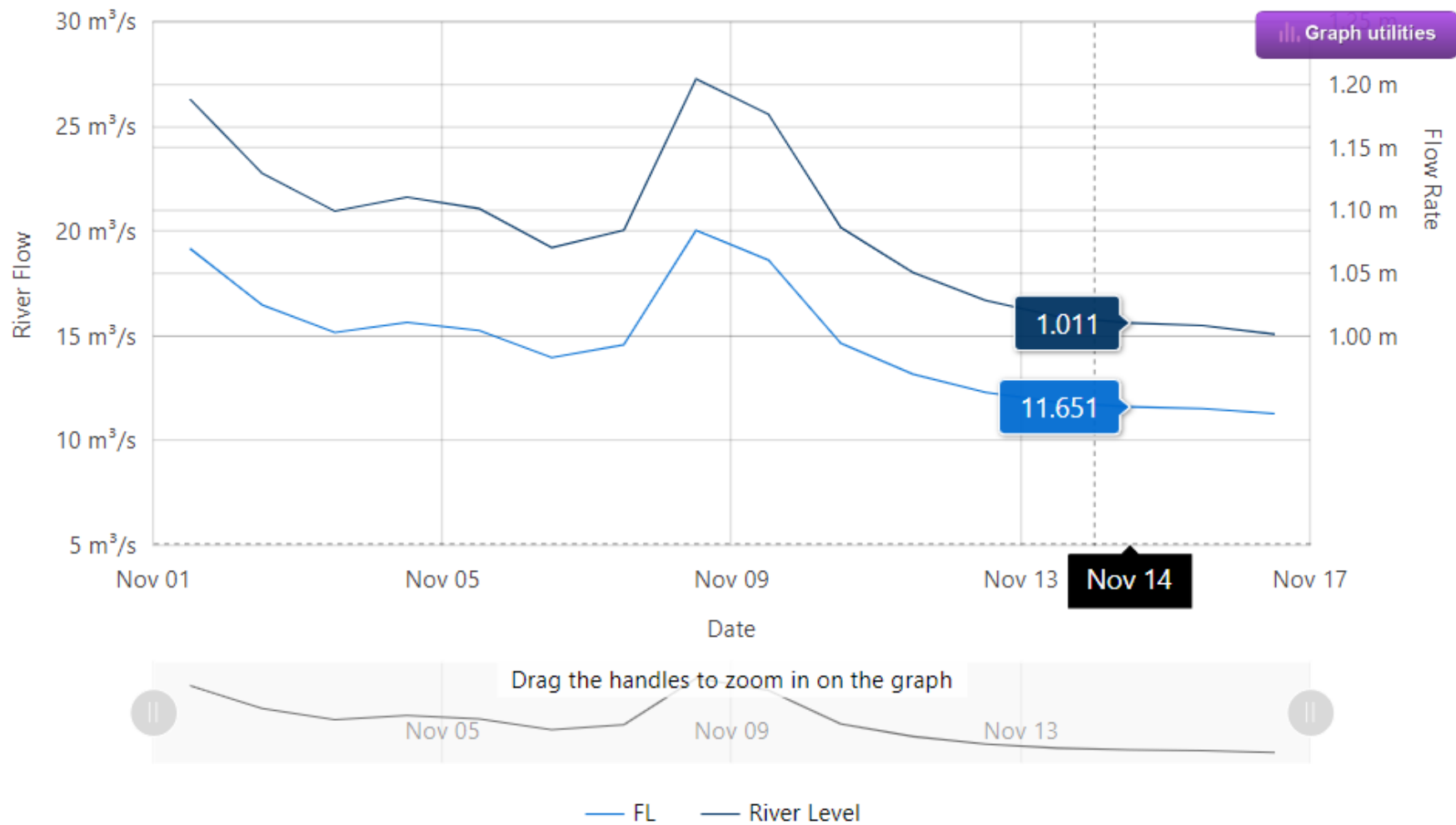
¹Water clarity has been converted from measured turbidity using the formula $\ln(\text{CLAR}) = 1.21 - 0.72 \ln(\text{TURB})$ (Franklin, Booker & Stoffels, 2020).

²Guideline values to assess ecological impacts of nitrogen on freshwater life. Attribute band limits are from the NPS-FM consultation draft (2019)

Mokau River – Summary of water quality collected at 16 sites across the Mokau River catchment November 2023

Nutrient concentrations (nitrate, ammonia and dissolved reactive phosphorus) were low at most sites. Key contaminants were *E. coli* and water clarity.

E. coli: 56% of all sites had low concentrations (≤ 230), 25% had slightly elevated concentrations (between 280 - 530) and 19% had elevated concentrations (> 730). **Nitrate and Ammonia**: concentrations at 100% of sites were below toxicity levels (Nitrate ≤ 0.62 mg/L; Ammonia ≤ 0.02). Only one site had Dissolved Inorganic Nitrogen (DIN) concentrations above 0.5 mg/L. Ecological impacts, including problematic growth of algae and/or aquatic plants and loss of sensitive aquatic species are likely to occur when DIN regularly exceeds 0.5 mg/L. **Dissolved reactive phosphorus**: 94% of sites had low concentrations (≤ 0.009 mg/L) and one site (16%) had slightly elevated concentrations (0.011 mg/L). **Water clarity**: 44% of sites had good water clarity (A or B band), two sites (13%) had reduced water clarity (C band) and 44% of sites 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 the local landscape characteristics.



Data source: Waikato Regional Council [envirohub website](http://envirohub.org.nz) for environmental data.