Upper Mangaokewa – Quarterly River Monitoring August

Sample Collection Day: 25th August 2025

*Water quality was **Fair** in Mangaokewa stream-viaduct (Site 4) and Waiteti stream-upper (Site 46), and **Poor** in Mangawhauwhi stream (Site 5) and Waiteti stream-viaduct (Site 6).*

E. coli concentrations were very low in three sites (≤ 100 cells per 100 mL) and slightly elevated in Waiteti stream-viaduct (270 cells per 100 mL). All sites met recommended health guidelines for swimming (540 cells per 100 mL) and Mangawhauwhi stream and Waiteti stream-upper also met guidelines for livestock drinking water (< 100 cells per 100 mL) [1].

Nitrogen: Nitrate concentrations were low in Waiteti stream-upper (0.33 mg/L) and slightly elevated across the other three sites, exceeding Waikato Plan Change One targets (0.525 mg/L). Though all sites fell well below ecological toxicity levels (2.4 mg/L). **Ammonia** concentrations were very low at two sites, Mangaokewa stream and Waiteti stream-upper (< 0.005 mg/L) and slightly higher at Mangawhauwhi stream and Waiteti stream (0.006 – 0.01 mg/L) posing a low risk to aquatic life but exceeded Plan Change One targets (0.005 mg/L). **Dissolved inorganic nitrogen (DIN)** was low in Waiteti stream-upper (0.33 mg/L), slightly elevated in Mangaokewa stream (0.84 mg/L) and Waiteti stream-viaduct (0.73 mg/L) and elevated in Mangawhauwhi stream (1.11 mg/L). Consequently, three quarters of all sites exceeding the ecological impact threshold (0.5 mg/L).

Phosphorus: Dissolved reactive phosphorus (DRP) concentrations were low across all sites (≤ 0.010 mg/L).

Suspended sediment/Water Clarity: Water clarity was *Fair* in Mangaokewa stream (1.52 m) and *Poor* across all other sites (≤ 1.17 m), relative to the national bottom line (1.34 m).

The results in the table below have been graded according to the National Policy Statement for Freshwater Management (NPS-FM, 2020) and Waikato Plan Change One (PC1, 2020), using the strictest applicable measure.

[1] Drinking water for livestock should contain < 100 cfu/100 mL (median value) of E. coli. Livestock Drinking Water Guidelines (2023), Australian & New Zealand Guidelines for Fresh & Marine Water Quality.

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Upper Mangaokewa[1] Sample Dates: 25-Aug-25 Lab: Analytica	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
	E. coli/100 ml	Nitrates (mg N/L)	Ammonia (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L)[3]	Dissolved Reactive Phosphorus (mg/L)	Water Clarity (m)[2]	National Bottom Line
4-Mangaokewa Stm (viaduct)	100	0.84	<0.005	0.84	0.010	1.52	1.34
5-Mangawhauwhi Stm 071	82	1.10	0.006	1.11	0.003	1.17	1.34
6-Waiteti Stm (viaduct)	270	0.72	0.01	0.73	0.007	1.00	1.34
46-Waiteti stream (Upper)	33	0.33	<0.005	0.33	0.007	1.28	1.34

[1]Assessed against Short-term PC1 targets & NPS-FM National Bottom Lines - where the most stringent measures apply.

[2]Water clarity has been converted from measured turbidity using the formular ln(CLAR) = 1.21 – 0.72 ln(TURB) (Franklin, Booker & Stoffels, 2020).

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

Attribute	
A	Ecosystem Health
B	
C	
D	
E	Human Contact only

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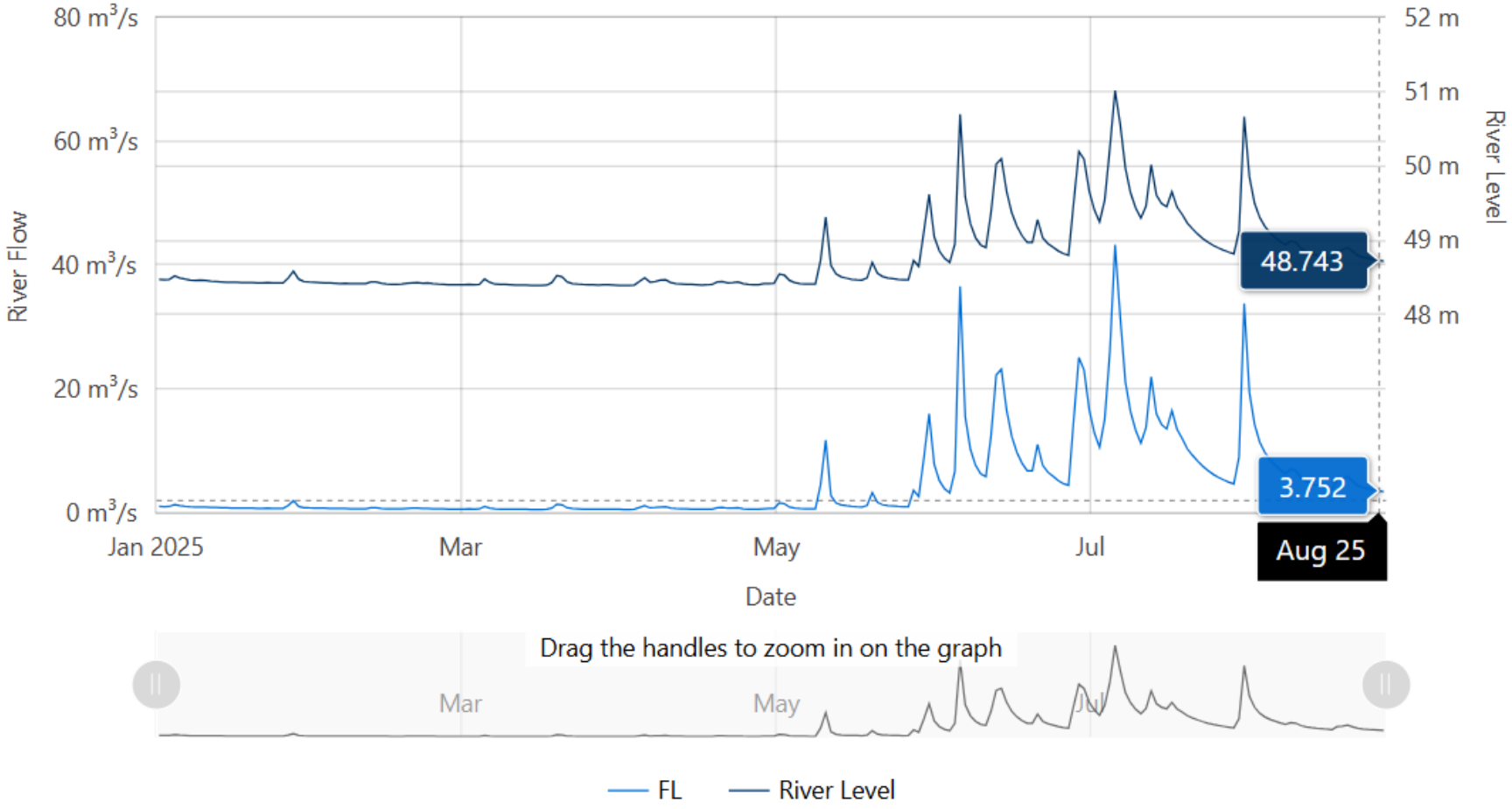
River Level and Flow Rate – Mangaokewa Stream, Te Kuiti

The below chart presents continuous data collected by the Waikato Regional Council for Mangaokewa between 1st January and 26th August 2025. River Level and Flow Rate on the day of sampling (25-August) are highlighted.



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

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