Upper Mangaokewa – Quarterly River Monitoring

Sample Collection Day: 22nd and 28th February 2024

Overall water quality was Fair. E. coli, Dissolved Inorganic Nitrogen and suspended sediment were elevated at some sites.

E. coli concentrations were low at three sites (≤180) but elevated at Mangawhauwhi stream (600), above recommending health levels for swimming (540). **Nitrate** concentrations were low at all sites, falling below regional PC1 targets (0.525 mg/L) and well below levels where ecological toxicity impacts can occur (2.4 mg/L). Nitrates were lowest at 46-Waiteti Stream-Upper (0.07 mg/L) and highest at 6-Waiteti Stream-Viaduct (0.45 mg/L). **Ammonia** concentrations were low at 4-Mangaokewa Stream (viaduct) and 46-Waiteti stream (< 0.005 mg/L) but exceeded PC1 targets (0.005 mg/L) at 5-Mangawhauwhi stream and 6-Waiteti stream (≥ 0.006 mg/L). **Dissolved inorganic nitrogen** concentrations were low at all sites (≤ 0.46 mg/L). **Dissolved reactive phosphorus** concentrations were low at all sites (≤ 0.01 mg/L). **Water clarity** was excellent at 4-Mangaokewa Stream (2.39 m) and 6-Waiteti stream (2.78 m) but was poor at 5-Mangawhauwhi stream (1.33 m) and 46-Waiteti stream (1.17 m), relative to the national bottom line (1.34 m).

Upper Mangaokewa[1]	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
Sample Dates: 22 & 28-Feb-24 Lab: Analytica	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)	91	0.20	<0.005	0.20	0.002	2.39	1.34
5-Mangawhauwhi Stm 071	600	0.44	0.01	0.45	0.01	1.33	1.34
6-Waiteti Stm (viaduct)	180	0.45	0.006	0.46	0.01	2.78	1.34
46-Waiteti stream (Upper)	89	0.07	<0.005	0.07	0.006	1.17	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	Human Contact
B		
C		
D		
E	Human Contact only	

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