

## Kawhia – Quarterly River Monitoring March

Sample Collection Day: 3rd March 2025

### North Kawhia

Water quality was **Excellent** in Mangapapa stream (Site 32), **Good** in Te Kauri stream (Site 33) and Awaroa river (Site 34) and **Fair** in Oparau river (Site 31).

**E. coli** concentrations were elevated in Oparau River and slightly elevated in Te Kauri stream. Concentrations in Oparau River exceeded recommended health guidelines for swimming (540 cells per 100 mL). Awaroa river had the lowest *E. coli* concentrations (190 cells per 100 mL).

**Nitrogen: Nitrate** concentrations were low across all sites, falling well below ecological toxicity levels (2.4 mg/L). Oparau river had the lowest nitrate concentrations (0.02 mg/L) and Mangapapa stream had the highest concentrations (0.46 mg/L). **Ammonia** concentrations were very low across all sites ( $\leq 0.005$  mg/L). **Dissolved inorganic nitrogen (DIN)** was also low across all sites ( $\leq 0.46$  mg/L), falling below the ecological impact threshold (0.5 mg/L).

**Phosphorus: Dissolved reactive phosphorus (DRP)** concentrations were low in three sites ( $\leq 0.007$  mg/L). Awaroa river had slightly elevated DRP concentrations (0.014 mg/L).

**Suspended sediment/Water Clarity: Water clarity** was good across all sites (range = 1.64 to 1.84 m), relative to the national bottom line (1.34 m). Oparau river and Mangapapa stream had the highest water clarity. Te Kauri stream had the lowest water clarity.

The results in the table below have been graded according to the National Policy Statement for Freshwater Management (NPS-FM, 2020).

North Kawhia Date: 3-Mar-25 Lab: Analytica	Human Contact		Ecosystem Health				
	E. coli/100 ml	Nitrates Toxicity (mg N/L)	Ammonia Toxicity (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L) <sup>2</sup>	Dissolved Reactive Phosphorus (mg/L)	Water Quality	
						Water Clarity (m) <sup>1</sup>	National Bottom Line
31-Oparau R.	610	0.02	<0.005	0.020	<0.002	1.84	1.34
32-Mangapapa Str	230	0.46	<0.005	0.46	<0.002	1.84	1.34
33-Te Kauri Str	330	0.10	<0.005	0.10	0.007	1.64	1.34
34-Awaroa R.	190	<0.002	<0.005	<0.002	0.014	1.69	1.34

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

<sup>2</sup>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	

## South Kawhia

Water quality was **Excellent** in Mangatangi stream (Site 38), **Good** in Ngahuinga stream (Site 35) and Oteke stream (Site 37) and **Fair** in Puaroa stream (Site 36).

**E. coli** concentrations were low in Oteke stream (120 cells per 100 mL) and Mangatangi stream (190 cells per 100 mL), slightly elevated in Ngahuinga stream (370 cells per 100 mL) and elevated in Puaroa stream (650 cells per 100 mL), exceeded the recommended health guidelines for swimming (540 cells per 100 mL).

**Nitrogen: Nitrate** concentrations were very low across all sites ( $\leq 0.10$  mg/L), falling well below ecological toxicity threshold (2.4 mg/L). Mangatangi stream had the lowest concentrations (0.003 mg/L) and Ngahuinga stream had the highest (0.10 mg/L). **Ammonia** concentrations were very low across all sites ( $\leq 0.008$  mg/L). **Dissolved inorganic nitrogen (DIN)** concentrations were also low across all sites ( $\leq 0.10$  mg/L), falling well below ecological impact threshold 0.5 mg/L.

**Phosphorus: Dissolved reactive phosphorus** concentrations were low in three sites ( $\leq 0.007$  mg/L) and were slightly elevated in Oteke stream (0.011 mg/L).

**Suspended sediment/Water Clarity: Water clarity** was excellent across all sites, relative to the national bottom line (0.61 m). Mangatangi stream had the highest water clarity (3.94 m) and Puaroa stream had the lowest (1.48 m).

The results in the table below have been graded according to the National Policy Statement for Freshwater Management (NPS-FM, 2020).

South Kawhia Date: 3-Mar-25 Lab: Analytica	Ecosystem Health							
	Human Contact	Water Quality					Sediment	
		Nitrates Toxicity (mg N/L)	Ammonia Toxicity (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L) <sup>2</sup>	Dissolved Reactive Phosphorus (mg/L)	Water Clarity (m) <sup>1</sup>	National Bottom Line	
	E. coli/100 ml							
35-Ngahuinga Str	370	0.10	<0.005	0.10	0.007	1.64	0.61	
36-Puaroa Str (Owhiro valley)	650	0.06	<0.005	0.06	0.006	1.48	0.61	
37-Oteke Str	120	0.04	0.008	0.04	0.011	2.29	0.61	
38-Mangatangi Str	190	0.003	<0.005	0.003	0.007	3.94	0.61	

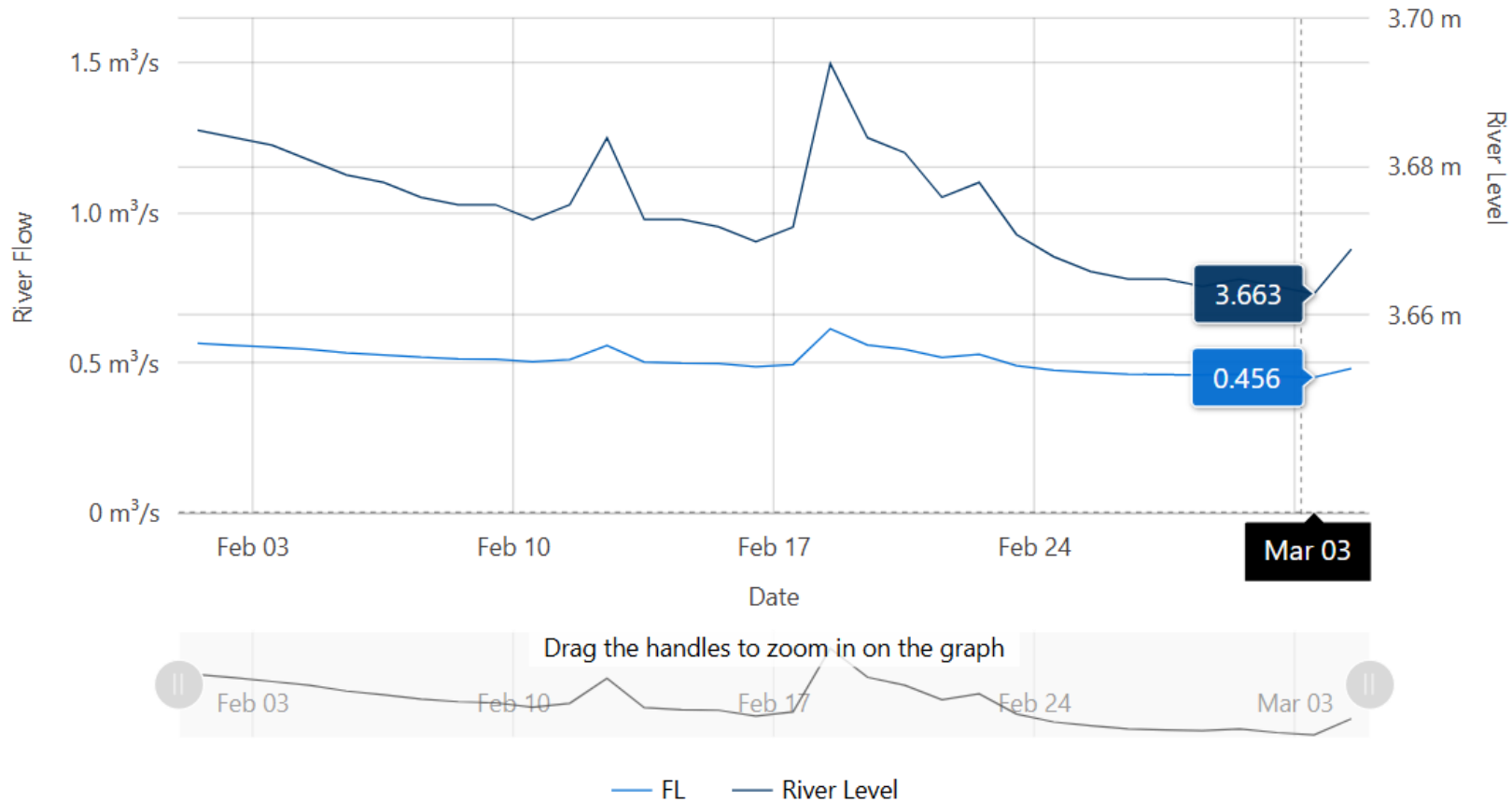
<sup>1</sup>Water clarity has been converted from measured turbidity using the formula  $\ln(\text{CLAR}) = 1.21 - 0.72 \ln(\text{TURB})$  (Franklin, Booker & Stoffels, 2020).

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

Attribute Band		
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B		
C		
D		
E	Human Contact only	

### River Level and Flow Rate – Oparau River Langdon Rd (Off Okupata Rd)

The below chart presents continuous data collected by the Waikato Regional Council for Oparau river between 1<sup>st</sup> January and 4<sup>th</sup> March 2025. River Level and Flow Rate on the day of sampling (3-March) are highlighted.



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

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