Kawhia – Quarterly River Monitoring August

Sample Collection Day: 7th August 2025

North Kawhia

*Water quality was **Fair** across all four sites –Mangapapa stream (Site 32), Te Kauri stream (Site 33), Awaroa river (Site 34) and Oparau river (Site 31).*

E. coli concentrations were very low across all sites (≤ 140 cells per 100 mL), falling well within health guidelines for swimming (540 cells per 100 mL). Te Kauri stream and Awaroa river also met guidelines for livestock drinking water (< 100 cells per 100 mL) [1].

Nitrogen: Nitrate concentrations were low in Oparau river and Awaroa river (≤ 0.35 mg/L), and moderate in Te Kauri stream (0.60 mg/L) and Mangapapa stream (0.80 mg/L). All sites fell well below ecological toxicity levels (2.4 mg/L). Oparau river had the lowest nitrate concentration (0.31 mg/L) and Mangapapa stream had the highest concentration (0.80 mg/L). **Ammonia** concentrations were low across all sites (< 0.005 mg/L). **Dissolved inorganic nitrogen (DIN)** was low in Oparau river and Awaroa river (≤ 0.35 mg/L), but was slightly elevated in Mangapapa stream and Te Kauri stream, exceeding the ecological impact threshold (0.5 mg/L).

Phosphorus: Dissolved reactive phosphorus (DRP) was low in three sites (≤ 0.009 mg/L) and slightly elevated in Awaroa river (0.013 mg/L).

Suspended sediment/Water Clarity was *Poor* across all sites (≤ 1.14 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).

North Kawhia Date: 7-Aug-24 Lab: Analytica	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
	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
31-Oparau R.	110	0.31	<0.005	0.31	0.009	0.98	1.34
32-Mangapapa Str	140	0.80	<0.005	0.80	<0.002	0.37	1.34
33-Te Kauri Str	64	0.60	<0.005	0.60	0.008	0.71	1.34
34-Awaroa R.	61	0.35	<0.005	0.35	0.013	1.14	1.34

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

[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)

[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.

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

South Kawhia

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

E. coli was very low in Oteke stream (51 cells per 100 mL) and low in the other three streams (≤ 250 cells per 100 mL). All sites fell well within health guidelines for swimming (540 cells per 100 mL) and Oteke stream met guidelines for livestock drinking water (< 100 cells per 100 mL).

Nitrogen: Nitrate concentrations were low across three sites (≤ 0.49 mg/L) and moderate in Mangatangi stream (0.81 mg/L). All sites fell well below the ecological toxicity threshold (2.4 mg/L). **Ammonia** concentrations were very low across all sites (≤ 0.005 mg/L). **Dissolved inorganic nitrogen (DIN)** concentrations were low in three sites (≤ 0.49 mg/L) and slightly elevated in Mangatangi stream (0.81 mg/L), exceeding the ecological impact threshold 0.5 mg/L.

Phosphorus: Dissolved reactive phosphorus was low in three sites (≤ 0.008 mg/L) and slightly elevated in Mangatangi stream (0.014 mg/L).

Suspended sediment/Water Clarity was *Excellent* in Puaroa stream and Oteke stream (≥ 1.17 m) and *Good* in Ngahuinga stream and Mangatangi stream (0.77 & 0.86 m), relative to the national bottom line (0.61 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: 7-Aug-24 Lab: Analytica	Human Contact	Ecosystem Health					
		Water Quality					
						Sediment	
	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
35-Ngahuinga Str	110	0.39	<0.005	0.39	0.008	0.86	0.61
36-Puaroa Str (Owhiro valley)	110	0.34	<0.005	0.34	0.007	1.17	0.61
37-Oteke Str	51	0.49	<0.005	0.49	<0.002	1.45	0.61
38-Mangatangi Str	250	0.81	<0.005	0.81	0.014	0.77	0.61

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

[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)

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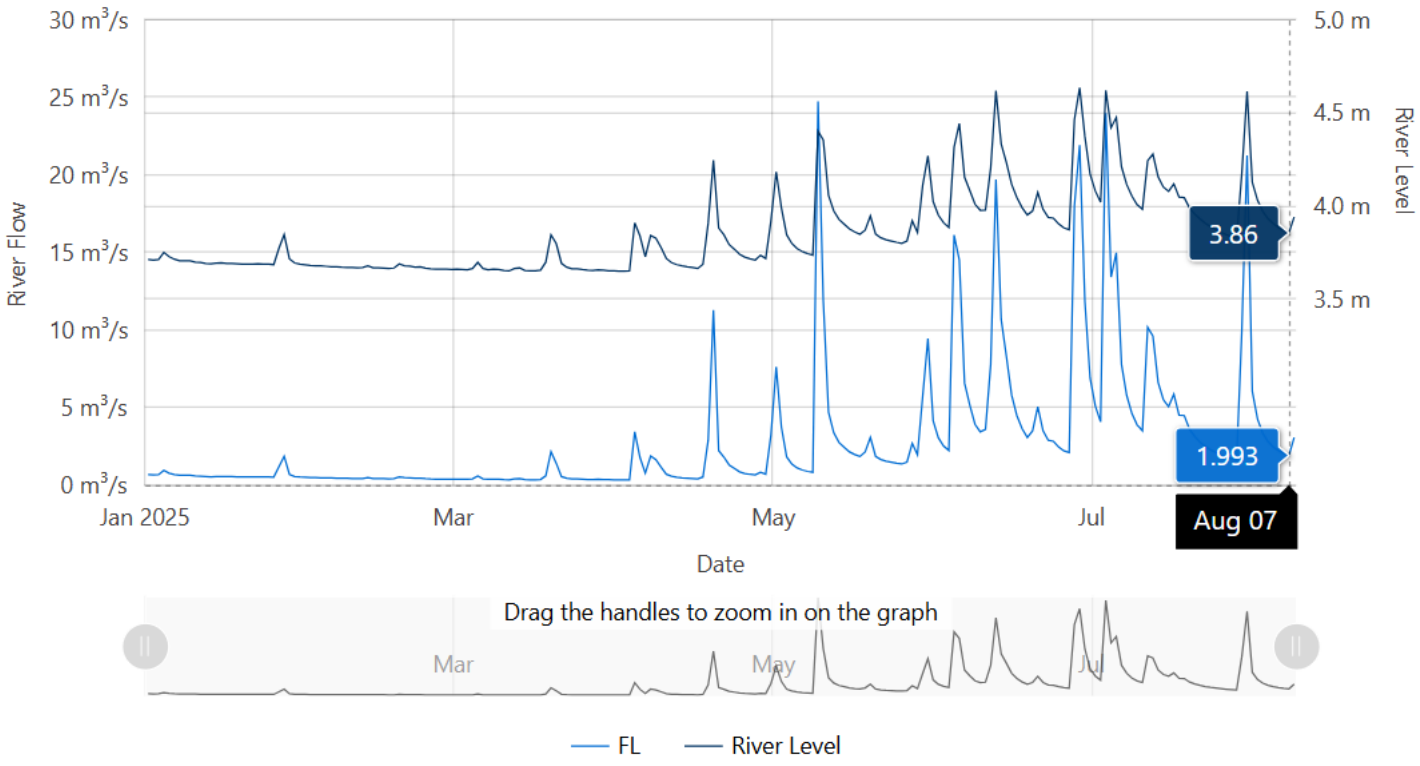
River Level and Flow Rate – Oparau River Langdon Rd (Off Okupata Rd)

The below chart presents continuous data collected by the Waikato Regional Council for Oparau river between 1st January and 8th August 2025. River Level and Flow Rate on the day of sampling (7-August) are highlighted.



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

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