Kawhia – Quarterly River Monitoring

Sample Collection Day: 13th May 2024

North Kawhia

Water quality was Good, except for dissolved inorganic nitrogen which was elevated at one site, and water clarity which was poor at another site.

E. coli concentrations were low at all sites (≤ 240) with concentrations falling well within recommended health limits for swimming (540). **Nitrate** concentrations were low, falling well below ecological toxicity levels (2.4 mg/L) at all sites. Nitrates were lowest at 31-Oparau River (0.07 mg/L) and highest at 32-Mangapapa stream (0.56 mg/L). **Ammonia** concentrations were low at all sites (< 0.01 mg/L). **Dissolved inorganic nitrogen** was low at 3 sites but slightly elevated at 32-Mangapapa stream (0.56 mg/L). Concentrations greater than 0.5 mg/L can cause ecological impacts like excessive growth of algae and aquatic plants, and loss of sensitive aquatic species. **Dissolved reactive phosphorus** concentrations were low at all sites (≤ 0.009 mg/L). **Water clarity** was excellent at 3 sites (≥ 1.84 m) but was poor at 33-Te Kauri stream (1.14 m), relative to the national bottom line (1.34 m). Awaroa river had the highest water clarity (2.5 m)

North Kawhia Date: 13-May-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.	100	0.07	<0.005	0.07	<0.002	1.84	1.34
32-Mangapapa Str	10	0.56	<0.005	0.56	0.003	2.20	1.34
33-Te Kauri Str	220	0.49	0.01	0.50	0.007	1.14	1.34
34-Awaroa R.	240	0.17	<0.005	0.17	0.009	2.50	1.34

Attribute Band		
A	Ecosystem Health	Human Contact
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)

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

South Kawhia

Water quality was Excellent, except for E. coli which was slightly elevated at one site.

E. coli concentrations were low at three sites (≤ 150) and slightly elevated at 35-Nghuinga stream (360). All sites fell within recommended health limits for swimming (540). **Nitrate** concentrations were low at all sites, falling well below ecological toxicity impacts (2.4 mg/L). Nitrates were lowest at 36-Puaroa stream (0.23 mg/L) and highest at 38-Mangatangi stream (0.49 mg/L). **Ammonia** concentrations were exceptionally low at all sites (≤ 0.005 mg/L). **Dissolved inorganic nitrogen** was low at all sites (≤ 0.49), however, site 38-Mangatangi stream fell just above concentrations which can cause ecological impacts (0.5 mg/L) like problematic growth of algae and aquatic plants, and the loss of sensitive species. **Dissolved reactive phosphorus** concentrations were low at all sites (≤ 0.01 mg/L) and were highest at 38-Mangatangi Stream (0.01 mg/L). **Water clarity** was excellent at all sites, relative to the national bottom line (0.61 m). 37-Oteke stream had the highest water clarity (2.63 m).

South Kawhia Date: 13-May-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-Nghuinga Str	360	0.30	<0.005	0.30	0.006	1.00	0.61
36-Puaroa Str (Owhiro valley)	150	0.23	<0.005	0.23	<0.002	1.48	0.61
37-Oteke Str	90	0.30	<0.005	0.30	0.004	2.63	0.61
38-Mangatangi Str	110	0.49	<0.005	0.49	0.01	1.60	0.61

Attribute Band		
A	Ecosystem Health	Human Contact
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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