Kawhia – Quarterly River Monitoring

Sample Collection Day: 14th February 2024

North Kawhia

Water quality was Good, except for E.coli which was elevated at two sites.

E. coli concentrations were very low at two sites (≤ 130), slightly elevated at 33-Te Kauri stream (320) and very high at 32-Mangapapa stream (1,300). *E. coli* concentrations greater than 540 are above recommended levels for swimming due to increased risk of infection. **Nitrate** concentrations were low at all sites, falling well below levels where ecological toxicity impacts can occur (2.4 mg/L). Nitrate concentrations were lowest at 31-Oparau River (0.004 mg/L) and highest at 32-Mangapapa stream (0.41 mg/L). **Ammonia** concentrations were exceptionally low at all sites (< 0.005 mg/L). **Dissolved inorganic nitrogen** were low at all sites, falling below levels which can cause ecological impacts (< 0.5 mg/L) like excessive growth of algae and aquatic plants, and loss of sensitive aquatic invertebrates. **Dissolved reactive phosphorus** concentrations were exceptionally low at all sites (≤ 0.004 mg/L). **Water clarity** was excellent at 3 sites (≥ 1.84 m) and good at 32-Mangapapa stream (1.69 m), relative to the national bottom line (1.34 m). 34-Awaroa River had the highest water clarity (2.78 m).

North Kawhia Date: 14-Feb-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	0.004	<0.005	0.004	<0.002	2.11	1.34
32-Mangapapa Str	1,300	0.41	<0.005	0.41	<0.002	1.69	1.34
33-Te Kauri Str	320	0.10	<0.005	0.10	0.004	1.84	1.34
34-Awaroa R.	130	0.01	<0.005	0.01	0.004	2.78	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 Good, except for E. coli and dissolved reactive phosphorus, with each being slightly elevated at two separate sites.

E. coli concentrations were low at three sites (≤ 170) and slightly elevated at 36-Puaroa stream (320). All sites fell within recommended health limits for swimming (540). **Nitrate** concentrations were low at all sites, falling well below levels where ecological toxicity impacts can occur (2.4 mg/L). Nitrates concentrations were lowest at 37-Oteke Stream (0.06 mg/L) and highest at 35-Nghuinga Stream (0.14 mg/L). **Ammonia** concentrations were exceptionally low at all sites (≤ 0.009 mg/L). **Dissolved inorganic nitrogen** was very low at all sites (≤ 0.14), falling well below 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 exceptionally low at all 3 sites (≤ 0.004 mg/L) but were slightly elevated at 38-Mangatangi Stream (0.011 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 (2.94 m).

South Kawhia Date: 14-Feb-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	130	0.14	<0.005	0.14	0.004	2.20	0.61
36-Puaroa Str (Owhiro valley)	320	0.11	<0.005	0.11	0.004	1.73	0.61
37-Oteke Str	76	0.06	0.006	0.07	0.003	2.94	0.61
38-Mangatangi Str	170	0.12	0.009	0.13	0.011	2.11	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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