



Marokopa – Annual River Monitoring Summary - 2025

Catchment monitoring by Marokopa River Care commenced in May 2022. It covers four monitoring sites sampled on a quarterly basis. In addition, the Waikato Regional Council (WRC) has two monitoring sites in Marokopa River at Speedies Road and Tawarau River off Speedies Road, sampled monthly. At the time the catchment group was formed a water quality baseline was calculated for Marokopa River using five years of monthly monitoring data (Jan 2016 – Dec 2020) from two sites Waikato Regional Council monitoring sites in Marokopa River and Tawarau River. The locations of all six monitoring sites are shown on Map 1, page 2).

2025 represents the fourth consecutive year of catchment monitoring. Water samples were collected on 3 March, 15 May, 7 August and 15 December 2025. Samples were collected during stable weather to avoid any significant rainfall events. River flow strongly influences water quality and the river flow graph for Marokopa is provided on page 5.

Key Resources Being Lost from the Land

Monitoring results show the key resources being lost from the Marokopa River catchment are *E. coli* and Sediment. *E. coli* represents a loss of organic matter and nutrients and is largely associated with animal manure in rural catchments. Sediment loss Sediment represents a loss of soil and nutrients.

E. coli was elevated in four sites, greatly exceeding recommended levels for swimming. However, *E. coli* was very low in Puaroa Stream and Kiritehere Stream. Suspended sediment was elevated in Wairoa Stream and Puaroa Stream and slightly elevated in Kiritehere Stream and Marokopa River at Speedies Road. This was reflected by a reduction in water clarity at these four sites. Dissolved reactive phosphorus concentrations were also slightly elevated at three sites, Mangaohuinga Stream, Marokopa River and Tawarau River.

The water quality dials on the following page summarise monitoring results for the six sites in the Marokopa catchment. The dial on the left shows the baseline for the catchment, covering 5 years of regional council monitoring at Marokopa River and Tawarau River, representing 116 individual samples. The dial on the right combines all data collected in the catchment in 2025, 38 samples. Arrows indicate either an increase or decrease in values compared to the sub-catchment baseline levels. **An increase in water clarity is positive** for river health while **an increase in all other indicators may impair river health**.

In 2025, nutrient indicators met national water quality limits while *E. coli* and water clarity/suspended sediment did not. Compared to the baseline – Water clarity was higher in 2025, the concentration of dissolved reactive phosphorus was slightly lower, but Nitrogen was greater (see Figure 1).

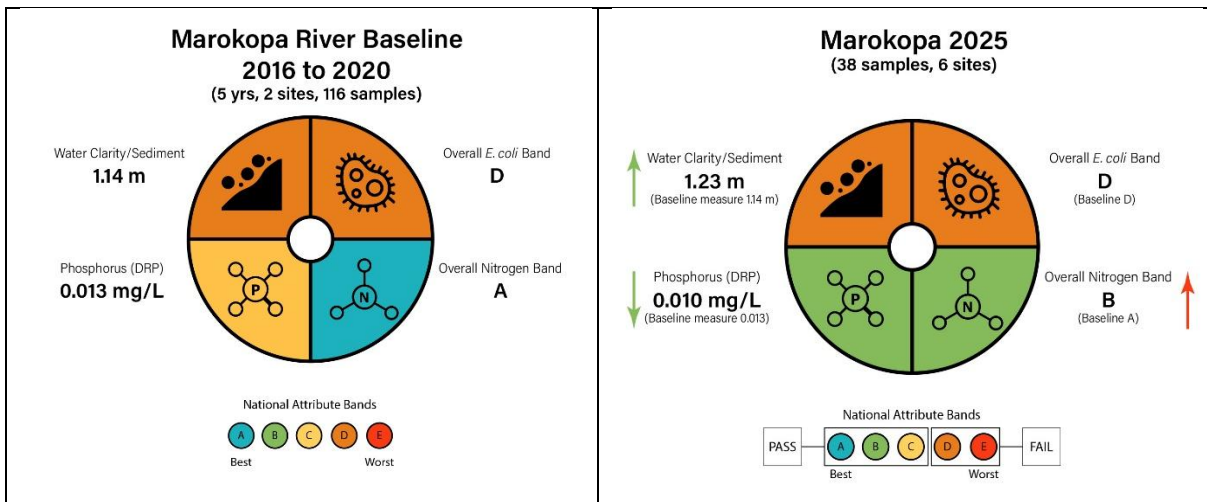
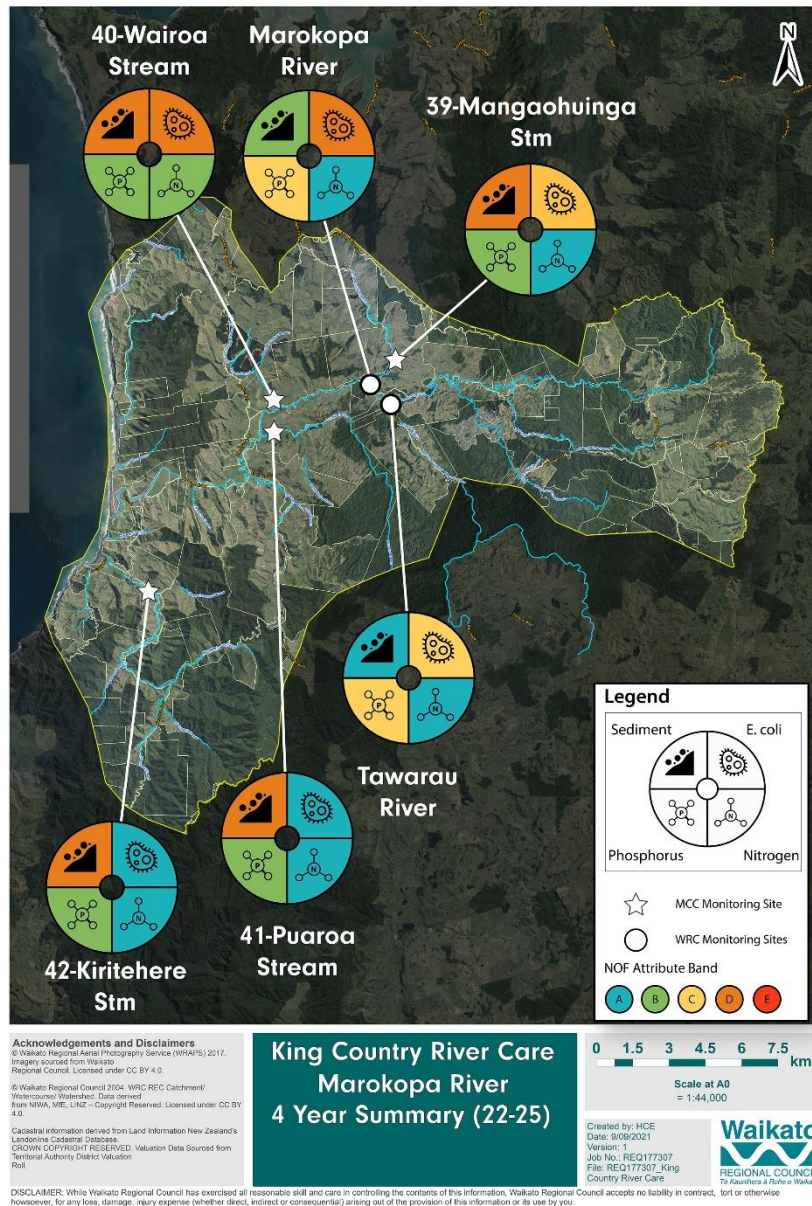


Figure 1. Water quality dials for the six sites in the Marokopa catchment. The dial on the left shows the sub-catchment baseline (2016-2020) and the dial on the right combines results collected in the 2025 monitoring period.

The above results have been assessed against the national freshwater attribute bands under the national policy statement for freshwater (NPS-FM 2020). The overall *E. coli* band is based on the following four measures, the percentage of samples exceeding 540 (CFU/100ml), the percentage of samples exceeding 260 (CFU/100ml), the median value and the 95th percentile (or upper 5% of *E. coli* concentrations). The overall nitrogen band is based on the following six measures, Nitrate Toxicity (median and 95th percentile), Ammonia Toxicity (median and maximum annual value) and Dissolved Inorganic Nitrogen (median and 95th percentile).

The map below covers four years of monitoring in Marokopa River catchment and Kiritehere Stream. Each dial shows the combined water quality results from six sites monitored since the Marokopa River Care monitoring programme commenced in 2022. The four catchment group sites (39 to 42) represent 15 samples and the dials for the WRC sites on Marokopa River and Tawarau River represent 44 samples collected over four years, see Map 1 below.

Detailed results for 2025 at each site are presented in Table 1 on page 5.



Map 1. Water quality monitoring results for 4 years of data at the four catchment group monitoring sites and the two WRC Sites in the Marokopa Catchment.

Water Quality Tables

Table 1 on the following page presents the results for all six monitoring sites (four KCRC sites and two Waikato Regional Council sites). The results of the five-year water quality baseline (2016 – 2020) are shown along the bottom row.

Where and which Resources are Being Lost

The key resources being lost from the catchment listed in order of significance were:

1. **Sediment:** All sites, except for Tawarau River and Mangaohuinga Stream, had elevated or slightly elevated sediment loadings. Wairoa River had the highest concentration of suspended sediment and Mangaohuinga Stream had the lowest.
2. ***E. coli*:** Elevated at four sites, which exceeded the national bottom line, except for Puaroa Stream and Kiritehere Stream which both had very low concentrations. The highest concentrations were recorded at the two regional council monitoring sites (Marokopa and Tawarau River) and the lowest concentrations were recorded in Puaroa Stream.
3. **Dissolved Reactive Phosphorus:** Slightly elevated at the two regional council monitoring sites and Mangaohuinga Stream.

Water quality results have been assessed under national (NPS-FM) water quality targets and have been colour coded as shown the adjacent key, Figure 2.

The overall *E. coli* band is based on the following four measures, the percentage of samples exceeding 540 and 260 (CFU/100ml), the median value and the 95th percentile (or upper 5% of *E. coli* concentrations).

The overall nitrogen band is based on the following six measures, Nitrate Toxicity (median and 95th percentile), Ammonia Toxicity (median and maximum annual value) and Dissolved Inorganic Nitrogen (median and 95th percentile).

	National Attribute Bands
Best ↓ Worst	A
	B
	C
	D
	E Only applicable for <i>E. coli</i>

Figure 2 Key for grading shown in Tables 1 to 3

Table 1) Water quality indicators for individual sites in the Marokopa catchment recorded over the 2025 monitoring period. Measured values have been assessed against the National Attribute Bands (NPS-FM, 2020).

Marokopa River Annual Summary 2025	Number of Samples	Human Health					Ecosystem Health											
		E. coli/100 ml					Water Quality											
							Nitrate Toxicity (TON mg N/L)		Ammonia Toxicity (mg N/L)		Dissolved Inorganic Nitrogen-DIN (mg N/L)		Overall Nitrogen Band	Dissolved Reactive Phosphorus (mg/L)		Sediment		
		% Exc. > 540	% Exc. > 260	Median	95th Percentile	Overall Band	Median	95th Percentile	Median	Maximum	Median	95th Percentile		Median	95th Percentile	Median	95th Percentile	Water Clarity Value ¹
KCRC SITES Lab: Analytica																		
39-Mangaohuinga Str	4	25%	50%	250	574	D	0.30	0.68	<0.005	0.010	0.31	0.68	B	0.012	0.028	1.63	1.34	
40-Wairoa Str	4	25%	75%	325	879	D	0.37	0.73	0.020	0.060	0.38	0.79	B	0.009	0.011	0.70	1.34	
41-Puaroa Str (Marokopa Flats)	4	0%	0%	96	178	A	0.19	0.30	0.006	0.007	0.20	0.31	A	0.007	0.008	1.26	1.34	
42-Kiritehere Str	4	0%	25%	126	418	A	0.04	0.11	0.006	0.006	0.05	0.12	A	0.010	0.012	1.35	1.34	
WRC SITES Lab: Hills																		
Tawarau River (976_1)	11	27%	27%	220	2,150	D	0.36	0.47	<0.005	0.007	0.36	0.47	A	0.012	0.015	1.52	0.61	
Marokopa River (531-3)	11	18%	27%	190	1,800	D	0.31	0.42	<0.005	0.022	0.31	0.42	A	0.011	0.016	1.45	1.34	
Marokopa River Baseline (Jan-2016 to Dec-2020)	116	24%	46%	230	1,830	D	0.30	0.43	< 0.01	0.088	0.32	0.44	A	0.013	0.021	1.14	1.34	

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

River Flow Graph

The graph below shows river flow recorded by Waikato Regional Council at Marokopa River Falls between 1 January and 31 December 2025. The black arrows indicate quarterly sampling days (Figure 3).

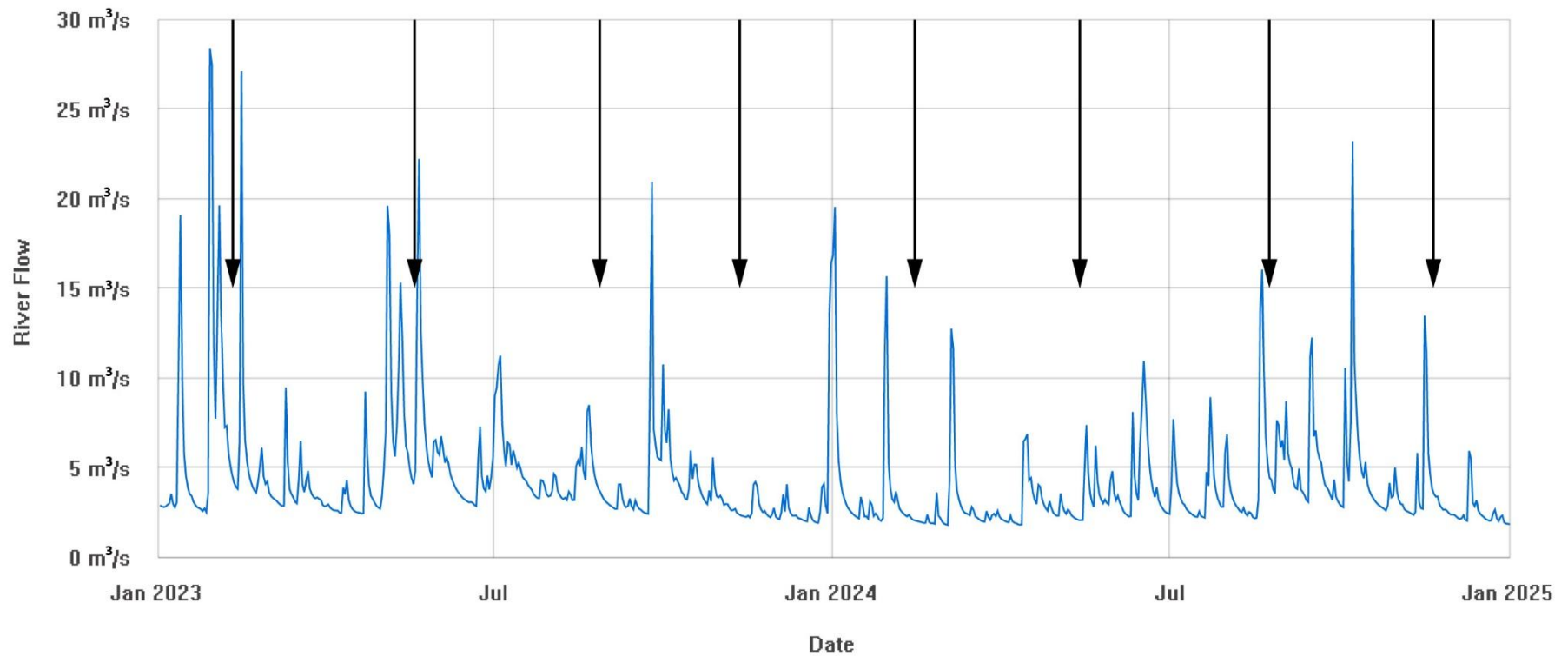


Figure 3. River flow recorded by Waikato Regional Council at Marokopa River Falls. The black arrows indicate catchment monitoring days.