

State of the environment monitoring river water quality

Prepared by:
Eloise Ryan and Bevan Jenkins

For:
Waikato Regional Council
Private Bag 3038
Waikato Mail Centre
HAMILTON 3240

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Peer reviewed by:
Tom Stephens

Date November 2022

Approved for release by:
Mike Scarsbrook

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Abstract

The National Policy Statement for Freshwater Management 2020 (NPS-FM 2020) requires regional councils to set baseline states for attributes as set out in the National Objectives Framework (NOF). Data from Waikato Regional Council's state-of-the-environment (SoE) river monitoring programmes was used to calculate baseline river water quality state on 7 September 2017. A five-year window ending 7th September 2017 was used, except where explicitly expressed in the in the NPS-FM 2020. Baseline state was calculated for six attributes: suspended fine sediment (visual clarity), ammonia toxicity (ammoniacal nitrogen), nitrate toxicity, dissolved reactive phosphorus (DRP), dissolved inorganic nitrogen (DIN) and the faecal bacterium *Escherichia coli* (*E. coli*). Noting the NOF banding values for DIN are from the draft 2019 NPSFM.

1 Introduction

The purpose of this report is to assess the state of river water quality in the Waikato region on 7 September 2017. This assessment is carried out under the National Objective Framework (NOF) and is for relevant attributes for compulsory values under the National Policy Statement for Freshwater Management (NPS-FM) 2020. The river state is based on the Council's River monitoring sites with at least five years of data within a period that ends no earlier than 7 September 2017. Trends are evaluated in a separate report (in prep.).

The National Policy Statement for Freshwater 2020 (Ministry for the Environment, 2020) provides local authorities with updated direction on how they should manage freshwater under the Resource Management Act 1991 (New Zealand Government, 1991). The NPS-FM 2020 came into force from 3 September 2020. The NPS-FM 2020 replaced the National Policy Statement for Freshwater Management 2014 (as amended in 2017).

The NPS-FM 2020 defines four compulsory values that need to be provided for in all natural freshwater bodies (excluding geothermal) and additional receiving environments as appropriate (coastal marine area):

- ecosystem health
- human health for recreation
- threatened species
- mahinga kai

The NPS-FM 2020 defines 22 relevant attributes that measure how well the values; ecosystem health, human health for recreation, threatened species, and mahinga kai are being provided for. There is a requirement to assess all the relevant attributes identified in Appendix 2A and 2B of the NPS-FM 2020. Of the 22 attributes, 10 are defined as requiring limits while the remaining 12 require actions plans.

Subpart 2 of the NPS-FM 2020 deals with the National Objectives Framework (NOF). There is a requirement for regional councils to identify attributes for each value and set baseline states for those attributes. Clause 3.10 of the NPS-FM 2020 is:

3.10 Identifying attributes and their baseline states, or other criteria for assessing achievement of environmental outcomes

- 1) For each value that applies to an FMU or part of an FMU, the regional council:
 - a) must use all the relevant attributes identified in Appendix 2A and 2B for the compulsory values listed (except where specifically provided otherwise); and
 - b) may identify other attributes for any compulsory value; and
 - c) must identify, where practicable, attributes for all other applicable values; and
 - d) if attributes cannot be identified for a value, or if attributes are insufficient to assess a value, must identify alternative criteria to assess whether the environmental outcome of the value is being achieved.
- 2) Any attribute identified by a regional council under subclause (1)(b) or (c) must be specific and, where practicable, be able to be assessed in numeric terms.
- 3) Every regional council must identify the baseline state of each attribute, using the best information available at the time.
- 4) Attribute states and baseline states may be expressed in a way that accounts for natural variability

The NPS-FM 2020 defines baseline state, in relation to an attribute, to mean the best state out of the following:

- (a) the state on the date it is first identified by a regional council

- (b) the state on the date on which a regional council set a freshwater objective for the attribute under the National Policy Statement for Freshwater Management 2014 (as amended in 2017)
- (c) the state on 7 September 2017

This report uses the available data from the Council’s long-term monitoring network to calculate the state on 7 September 2017. The analysis is intended to provide the state (numeric value) and NOF band (letter grade), it doesn’t attempt to determine the best state (known as baseline state) of (a), (b), or (c) above. It is intended that the results can be used in a determination of baseline state as defined in the NPS-FM 2020.

Table 1 contains the 22 attributes from the NPS-FM 2020. In addition, dissolved inorganic nitrogen (DIN) has been included for information purposes. It is noted that DIN is not a default attribute, however under section 3.13 *Special provisions for attributes affected by nutrients*, to achieve a target attribute state for periphyton, or any other nutrient attribute, and any attribute affected by nutrients there is a requirement to set appropriate instream concentrations and exceedance criteria for dissolved inorganic nitrogen and dissolved reactive phosphorus. The banding values for DIN are from the draft 2019 NPSFM.

Separate reports (in prep.) contain the lakes and ecology attributes. Of the river’s attributes, a number were not possible to calculate because routine monitoring is not carried out, namely dissolved oxygen and periphyton. Therefore, this report contains calculations of the available dataset and attributes.

Table 1. Attributes under the NPS-FM 2020. Attributes included in this report are shown in bold. Note DIN is not an NPS-FM 2020 attribute.

Attribute	Table number	Value	Component	Requirement	Freshwater body type	Reported
Phytoplankton (trophic state)	1	Ecosystem Health	Aquatic life	Limit	Lakes	No
Periphyton (trophic state)	2	Ecosystem Health	Aquatic life	Limit	Rivers	No
Total nitrogen (trophic state)	3	Ecosystem Health	Water quality	Limit	Lakes	No
Total phosphorus (trophic state)	4	Ecosystem Health	Water quality	Limit	Lakes	No
Ammonia (toxicity)	5	Ecosystem Health	Water quality	Limit	Rivers and lakes	Rivers only
Nitrate (toxicity)	6	Ecosystem Health	Water quality	Limit	Rivers	Yes
Dissolved oxygen	7	Ecosystem Health	Water quality	Limit	Rivers (below point sources only)	No
Suspended fine sediment	8	Ecosystem Health	Water quality	Limit	Rivers	Yes
Escherichia coli (E. coli)	9	Human contact	Human health	Limit	Rivers and lakes	Rivers only
Cyanobacteria (planktonic)	10	Human contact	Human health	Limit	Lakes and lake fed rivers	No
Submerged plants (natives)	11	Ecosystem Health	Aquatic life	Action plan	Lakes	No
Submerged plants (invasive species)	12	Ecosystem Health	Aquatic life	Action plan	Lakes	No
Fish (rivers)	13	Ecosystem Health	Aquatic life	Action plan	Wadeable rivers	No
Macroinvertebrates (1 of 2)	14	Ecosystem Health	Aquatic life	Action plan	Wadeable rivers	No
Macroinvertebrates (2 of 2)	15	Ecosystem Health	Aquatic life	Action plan	Wadeable rivers	No
Deposited fine sediment	16	Ecosystem Health	Physical habitat	Action plan	Wadeable rivers	No
Dissolved oxygen	17	Ecosystem Health	Water quality	Action plan	Rivers	No
Lake-bottom dissolved oxygen	18	Ecosystem Health	Water quality	Action plan	Lakes	No

Attribute	Table number	Value	Component	Requirement	Freshwater body type	Reported
Mid-hypolimnetic dissolved oxygen	19	Ecosystem Health	Water quality	Action plan	Seasonally stratifying lakes	No
Dissolved reactive phosphorus	20	Ecosystem Health	Water quality	Action plan	Rivers	Yes
Ecosystem metabolism (both gross primary production and ecosystem respiration)	21	Ecosystem Health	Ecosystem processes	Action plan	Rivers	No
<i>Escherichia coli</i> (<i>E. coli</i>) (primary contact sites)	22	Human contact	Primary contact	Action plan	Primary contact sites in lakes and rivers (during the bathing season)	No
Dissolved inorganic nitrogen	--	Ecosystem Health	Water quality	--	Rivers	Yes

1.1 River monitoring sites

The Waikato Regional Council's river water quality monitoring is divided into two programmes, the 'Waikato River monitoring programme' (WaiRiMP) and the 'Regional rivers water quality monitoring programme' (ReRiMP).

Twelve locations along the Waikato River (WaiRiMP) are visited monthly (Taupo, Ohaaki, Ohakuri, Whakamaru, Waipapa, Karapiro, Hamilton-Narrows, Hamilton-Horotiu, Huntly, Rangiriri, Mercer and Tuakau) (Figure 1). For the Regional rivers programme (ReRiMP), one hundred and ten sites are sampled monthly (Figure 1). Each location is sampled at a similar time on each occasion (coefficient of variation $\approx 2-6\%$) to minimise the effect of diurnal variation on the measurement of water quality parameters. Information on the sample collection, locations and water quality parameters measured in the WaiRiMP and ReRiMP monitoring programmes can be found in: [Waikato River Water Quality Monitoring Programme - Data Report 2020 | Waikato Regional Council](#) and [Regional rivers water quality monitoring programme data report 2020 | Waikato Regional Council](#). However, it is noted here that the analytes analysed in this report are collected using the same field and laboratory methodologies across the two programmes and therefore the two datasets can be combined for analysis.

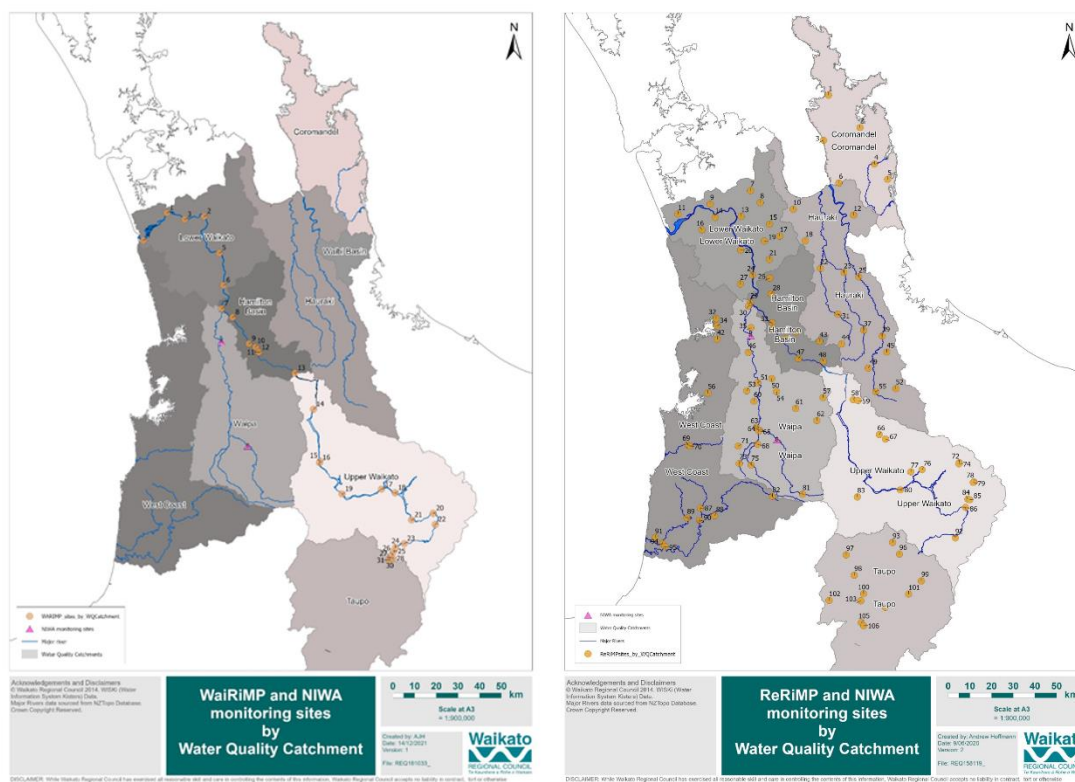


Figure 1. Waikato River water quality monitoring locations (WaiRiMP) and Regional Rivers monitoring locations (ReRiMP). Other locations form part of NIWA's National Rivers Water Quality Network, with data available from www.niwa.co.nz.

In addition, data from the NIWA National River Water Quality Network (NRWQN) was sourced to provide statistics at those locations.

2 Methods

Monthly samples from the two monitoring programmes (WaiRiMP and ReRiMP) were collated for baseline state computation. Sampled values that were less than detection limit (see Appendix A) were halved in-line with previous council water quality reports.

To calculate the baseline state for 7 September 2017, a five-year window ending 7th September 2017 was used, except where explicitly expressed in the in the NPS-FM 2020, for example, the *E. coli* attribute states “Attribute state should be determined by using a minimum of 60 samples over a maximum of 5 years, collected on a regular basis regardless of weather and flow conditions. However, where a sample has been missed due to adverse weather or error, attribute state may be determined using samples over a longer timeframe.” For this attribute, the window was extended backwards in time until 60 samples were available for analysis, but the window size was not allowed to exceed 6 years. Appendix A contains the analysis timeframe for each parameter and station.

The NPS-FM 2020 states that concentrations of ammonia (as ammoniacal-nitrogen) are to be assessed for compliance “... after pH adjustment”. The rationale and method for doing this was outlined in the Ministry for the Environment’s *Guide to Attributes in Appendix 2 of the National Policy Statement for Freshwater Management* (NPSFM) that was published in 2018. Values of pH from the sampling were used to adjust the ammonia values. The most extreme pH values in the guidance documents are a low of 6.0 and a high of 9.0, however a very small number of samples exist in the council’s database that are outside this range, in these cases the pH was adjusted to 6.0 and 9.0 as appropriate. The geothermally influenced site Waitapu Stm at Campbell Rd Br was excluded from analysis due to the high number (57 of 59) of pH values outside the range 6–9. There are 5 other sites where the pH value was adjusted as described above, in three cases only a single sample was involved, and the two remaining cases, two and three samples were adjusted. Analysis of state and band were rerun excluding these values and there were no band changes and no changes to maximum numeric values. At only one site (Mangakotukutuku Stm (Rukuhia) at Peacockes Rd) was there a change in the median value from 0.075 to 0.074 mg NH₄-N/L.

Where required (for example, nitrate and *E. coli* both have numeric attribute states that require 95th percentiles) percentiles were calculated using the “Hazen” method of calculation.

Over time changes have been made to the long-term water quality monitoring locations. Reasons for changes include health and safety requirements, and access issues. In these cases, a new site is selected, and a period of concurrent sampling is carried out, if possible. These site records were then merged into a single site for analysis with concurrent samples removed. Results of comparison analysis did not indicate a change in the record due to these monitoring locations changes.

The attribute for suspended fine sediment has an attribute unit of visual clarity which is measured in the field by black disk. Consequently, fewer sites are available for banding compared to chemical analysis due to the requirement of a site being suitable to measure visual clarity. That is, the site may prohibit the physical measurement of visual clarity due to depth.

3 Results

Data for the six-year or five-year period from 8th September 2011 or 8th September 2012 to 7th September 2017 was assessed against the attribute metrics in the National Objectives Framework in the NPS-FM (2020) (see Table 2). The overall band grades for the catchment of each site are mapped in Figures 2 – 6. Bands for the individual metrics per site and attribute are also reported in table form in Table A 1. The assessment period, number of samples assessed,

and number of samples with values less than the method detection limit are reported in Table A 2. The National bottom line refers to the minimum state for each attribute, indicating there are high concentrations of contaminants, and risks of adverse effects on the health of our waterways. Where a National bottom line exists, the grades that are below the bottom line are outlined with a black box on the figure key to indicate grades that don't meet the requirement.

The number and proportional of sites per NOF band by attribute and statistic are summarised in Table 2. While Table 3 contains the number and proportion of sites per NOF band for each attribute, where the NOF band is based on the worst grade from each statistic per attribute.

3.1 Ammonia (toxicity)

The ammonia toxicity attribute has numeric attribute states for annual median and annual maximum values as shown by the NOF bands related to ecosystem health (Figure 2).

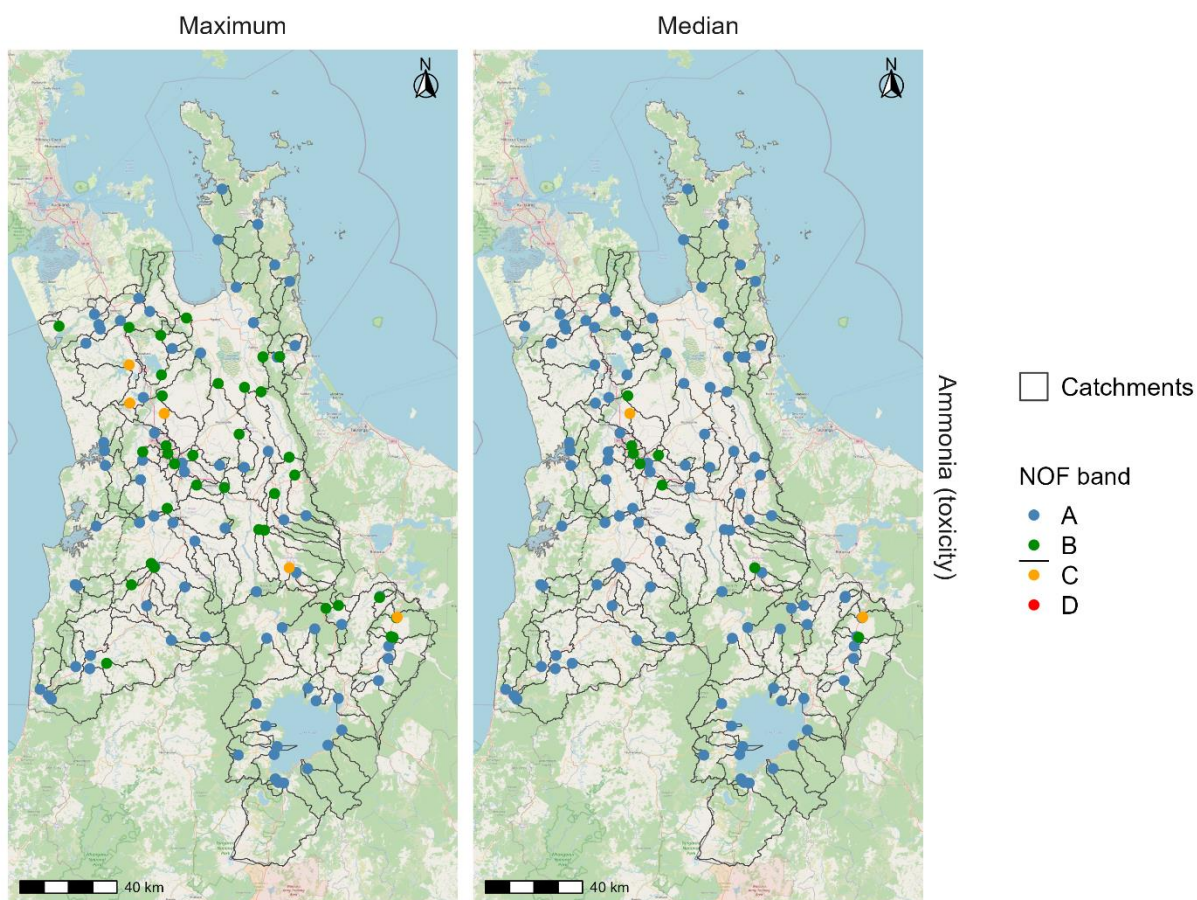


Figure 2. River maximum and median ammoniacal-N NPS-FM (2020) NOF banding (baseline state to 2017). National bottom line for attribute shown as black line on legend.

- The majority (91.3 %) of sites (Table 2) had a median concentration of ammoniacal-N at the 99% species protection level, where there is no observed toxicity effect on any species tested (NOF band A).
- 7.0% of sites had a median concentration of ammonia that could occasionally affect the growth or health of the 5 percent most sensitive species, based on comparison to the toxicity thresholds of NOF band B.
- 1.7% of sites exceeded the NOF bottom line for ammonia toxicity and had a median concentration of ammonia that could regularly affect the growth or health of the 20 percent most sensitive aquatic species (NOF band C) as a direct result of toxicity.
- When considering the annual maximum ammonia concentrations, most sites were in NOF band A and B (65.2% and 30.4% respectively), with a slightly greater percentage (4.3%) exceeding the National bottom line in comparison with the median attribute state (where 1.7% of sites exceeded). Overall, 4.3% of sites exceeded the National Bottom line for Ammonia (Toxicity) for either statistic.

3.2 Nitrate (toxicity)

The nitrate attribute has four numeric attribute states (bands A – D) for 95th percentile values and annual median values (Figure 3). The B/C band boundaries correspond to national bottom-lines for the annual median (2.4 mg/l) and annual 95th percentile (3.5 mg/l).

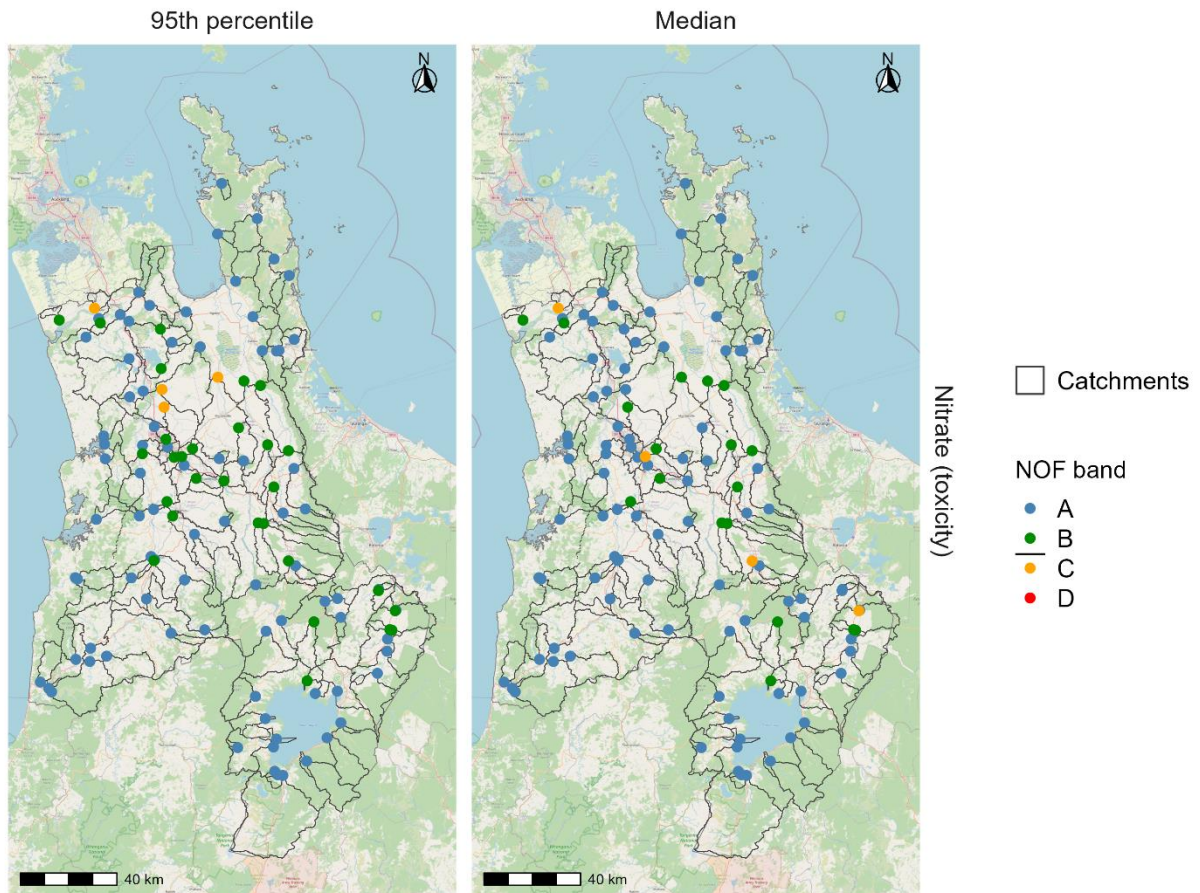


Figure 3. River 95th percentile and median nitrate NPS-FM (2020) NOF banding (baseline state to 2017). National bottom line for attribute shown as black line on legend

- A high percentage of the monitored sites were in NOF band A for nitrate toxicity (71.3% sites in the 95th percentile attribute state: 80.9% in the median attribute state)
- 15.7% of sites had a median concentration of nitrate that could occasionally affect the growth or health of the 5 percent most sensitive aquatic species, based on comparison to the toxicity thresholds of NOF band B. In comparison the 95th percentile attribute state had 25.2% of sites in band B.
- Less than 4 percent of sites (3.5%) exceeded the median and (3.5%) the 95th percentile NOF bottom line for nitrate (toxicity) (the point at which impacts on growth and mortality of multiple sensitive species are expected). Overall, 6.1% of sites exceed the bottom line for nitrate (toxicity) for either statistic.

3.3 Suspended fine sediment (visual clarity)

The NOF suspended fine sediment attribute state is based on visual clarity. The suspended fine sediment attribute has four numeric attribute states (bands A – D) (Figure 4).

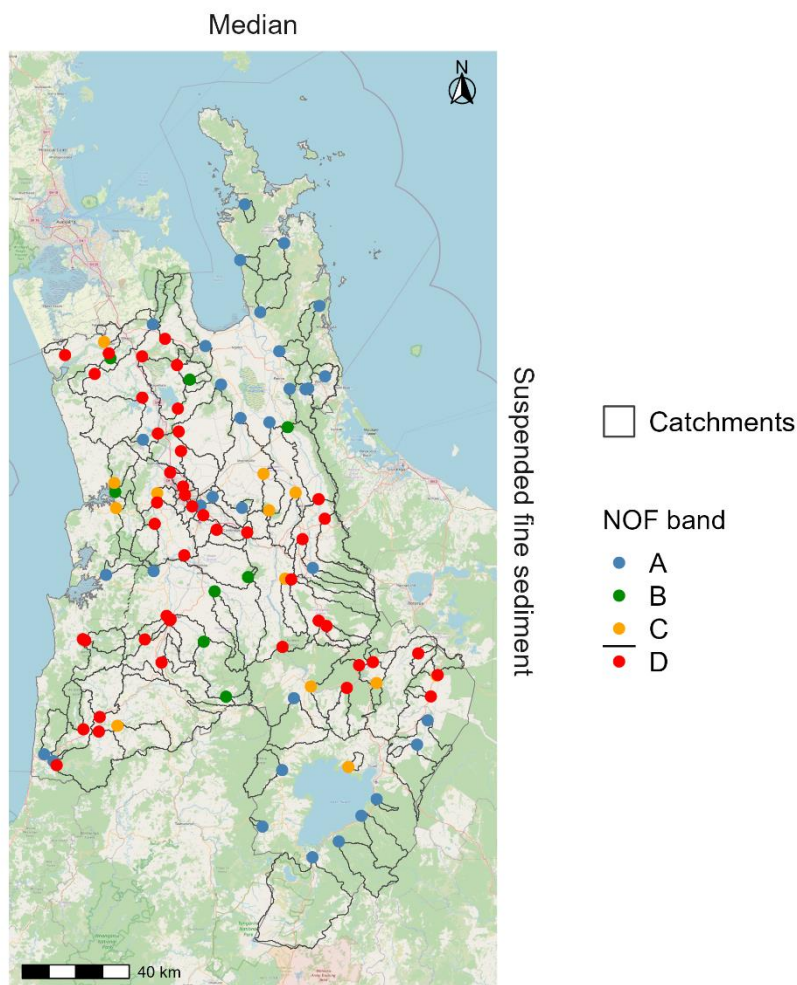


Figure 4. Suspended fine sediment NPS-FM (2020) NOF banding (baseline state to 2017). National bottom line for attribute shown as black line on legend

- 45.5% of sites were below the National bottom line for suspended fine sediment (band D), where there is a high impact of suspended sediment on instream biota. 13.1% of sites were in band C where there are moderate to high impacts of suspended sediment on instream biota. 41.4% of sites were classified into bands A and B where there is minimal to moderate impact of suspended sediment on biota.

3.4 Dissolved inorganic nitrogen and dissolved reactive phosphorus

Proposed changes to the NPS-FM released for consultation in 2019 included an attribute for dissolved inorganic nitrogen (DIN) to protect Ecosystem Health which is included in this report (Figure 5), alongside the banding for dissolved reactive phosphorus. The DIN and DRP attributes have four numeric attribute states (bands A – D) for annual maximum (95th percentile values) and annual median values.

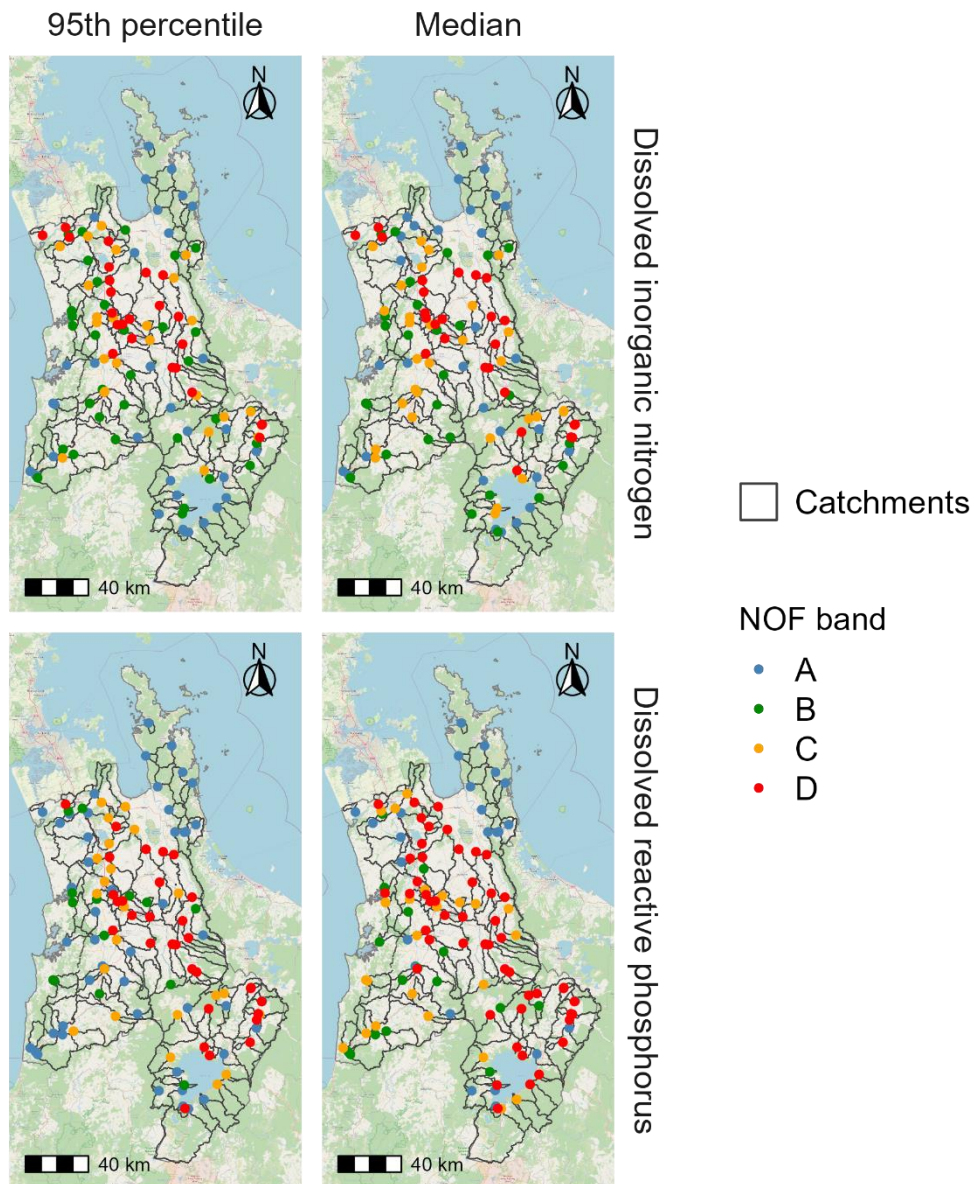


Figure 5. Dissolved inorganic nitrogen (top) and dissolved reactive phosphorus (bottom) NPS-FM (draft 2019 and 2020) NOF banding (baseline state to 2017).

- Noting the NOF banding values for dissolved inorganic nitrogen are sourced from the draft 2019 NPS-FM, which has been superseded by (omitted from) the 2020 version. In the draft version, the proposed national bottom line for dissolved inorganic nitrogen was 1.0 mg/L (median). 22.6% of sites exceeded the median and 20.9% exceeded the 95th percentile NOF bottom line (2.05 mg/L) for dissolved inorganic nitrogen, where ecological communities could be impacted by substantial DIN elevation above natural reference conditions. Overall, 26.1% of sites exceeded the bottom line for either dissolved inorganic nitrogen statistic.
- Attribute banding for dissolved reactive phosphorus showed the largest percentage (41.7%) of sites were in NOF band A for the 95th percentile attribute state, where no adverse effects attributable to DRP enrichment are expected.
- When classifying the data against the DRP median attribute state, only 21.7% of sites were in band A, with the largest percentage (43.5%) of sites in NOF band D. In band D ecological communities are impacted by substantial DRP elevations. Overall, 43.5% of sites were band D for DRP for either statistic.

3.5 *Escherichia coli*

The NOF bands for *E. coli* include four statistics: the percentage of sample exceeding 260 cfu/100 ml and 540 cfu/100 ml, 95th percentile and median. National bottom lines are not set for *E. coli* bacteria, instead the NZ Government has set targets of having >90% of specified rivers and lakes suitable for swimming by 2040 (Clean Waters 2017, NPS-FM 2017). The ‘overall state’ for *E. coli* was determined by selecting the ‘worst’ numeric attribute state in each of the four categories (Figure 6). The assessment is year-round, under all flow conditions and at all sites regardless of bathing site status in keeping with NOF guidance that human health applies to all natural freshwater bodies.

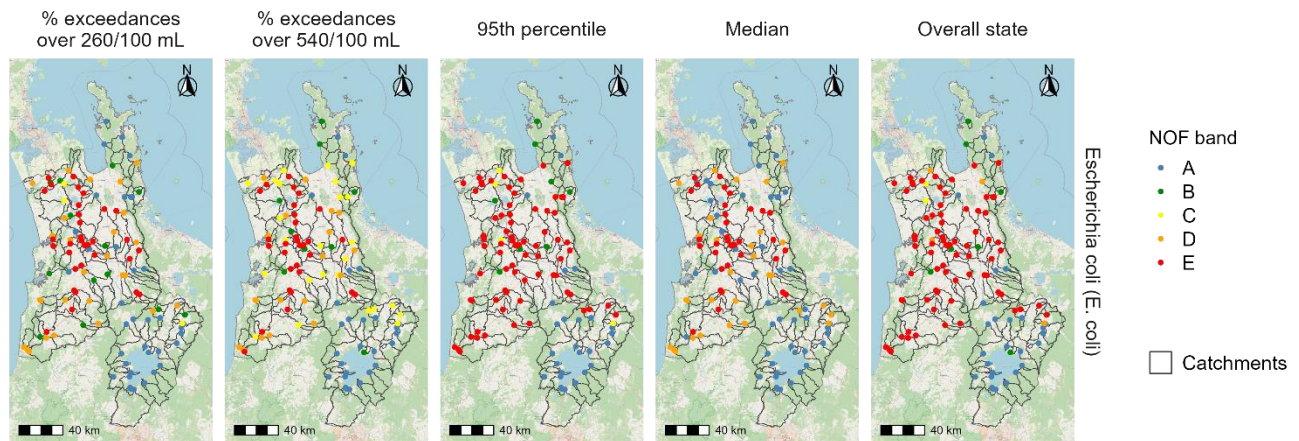


Figure 6. *Escherichia coli* NPS-FM (2020) NOF banding (baseline state to 2017).

- When assessing the ‘overall state’, the highest percentage of sites (63.5%) had an overall state in NOF band E, where the predicted average infection risk is >7%. Whereas in contrast, the second highest percentage of sites (25.5%) were in band A (where the predicted average infection risk is 1%), with the majority of these in the southern part of the region,
- Overall, 33.0% of sites were graded in band C or better. 67.0% of sites were in band D and E.

Table 2. Attribute counts and percentages by NOF band for each attribute and statistic.

NOF band	Ammonia (toxicity) maximum	Ammonia (toxicity) median	Nitrate (toxicity) 95 th percentile	Nitrate (toxicity) median	Suspended fine sediment median	Dissolved inorganic nitrogen 95 th percentile	Dissolved inorganic nitrogen median	Dissolved reactive phosphorus 95 th percentile	Dissolved reactive phosphorus median	<i>Escherichia coli</i> overall
A	75 (65.2%)	105 (91.3%)	82 (71.3%)	93 (80.9%)	33 (33.3%)	34 (29.6%)	31 (27.0%)	48 (41.7%)	25 (21.7%)	29 (25.2%)
B	35 (30.4%)	8 (7.0%)	29 (25.2%)	18 (15.7%)	8 (8.1%)	33 (28.7%)	28 (24.3%)	14 (12.2%)	16 (13.9%)	7 (6.1%)
C	5 (4.3%)	2 (1.7%)	4 (3.5%)	4 (3.5%)	13 (13.1%)	24 (20.9%)	30 (26.1%)	22 (19.1%)	24 (20.9%)	2 (1.7%)
D	--	--	--	--	45 (45.5%)	24 (20.9%)	26 (22.6%)	31 (27.0%)	50 (43.5%)	4 (3.5%)
E	--	--	--	--	--	--	--	--	--	73 (63.5%)

Table 3. Attribute counts and percentages by NOF band for each attribute. The lowest NOF grade for each statistic is used.

NOF band	Ammonia (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	<i>Escherichia coli</i>
A	75 (65.2%)	82 (71.3%)	33 (33.3%)	26 (22.6%)	25 (21.7%)	29 (25.2%)
B	35 (30.4%)	26 (22.6%)	8 (8.1%)	28 (24.3%)	14 (12.2%)	7 (6.1%)
C	5 (4.3%)	7 (6.1%)	13 (13.1%)	31 (27.0%)	26 (22.6%)	2 (1.7%)
D	--	--	45 (45.5%)	30 (26.1%)	50 (43.5%)	4 (3.5%)
E	--	--	--	--	--	73 (63.5%)

4 Conclusions

The National Objectives Framework within the NPS-FM requires regional councils to calculate baseline water quality state, using best available information. This report specifically assesses and reports on state from the Regional Council's observations of water quality for rivers. These results will be used to determine baseline state under the NPS-FM and NOF. Water quality data from Waikato Regional Council's SoE rivers monitoring programmes and NIWA's NRWQN has been compared to the attribute states set out in the NOF to provide the state as of 7 September 2017, with the 'National Bottom Line' referring to the minimum state for each attribute that must be met or worked towards meeting over time (if current state is worse than). Note the period of analysis varies by site and attribute, with all attributes except *E.coli* having a period of five years to 7 September 2017. For *E. coli*, the period varies by site but exceeds no more than 6 years and no less than 5 years to 7 September 2017.

Monitored river state was calculated for six attributes: ammoniacal-N, nitrate, suspended fine sediment, dissolved inorganic nitrogen, dissolved reactive phosphorus and *E. coli*. The state calculations showed there is exceedance of national bottom-line numeric attribute states for nutrients, suspended fine sediment and *E. coli*. All six attributes either had sites classified below the national bottom line, or where applicable, in bands D and E.

To summarise the key findings:

- Most sites had ammoniacal-N concentrations at the 99% species protection level, where there is no observed toxicity effect on any species tested (NOF band A). However, there were sites (4.3%) that exceeded the National bottom line for ammonia toxicity.
- A small percentage of sites exceeded the median (3.5%) and 95th percentile (3.5%) NOF bottom line for nitrate (the point at which impacts on growth and mortality of multiple sensitive species are expected). Overall, 6.1% of sites exceeded the NOF bottom line for nitrate.
- The amount of suspended fine sediment is a key factor affecting water clarity. 45.5% of sites were below the National bottom line for suspended fine sediment (band D), where there is a high impact of suspended sediment on instream biota.
- Median dissolved inorganic nitrogen exceeded the national bottom line in 26.1% of sites, where ecological communities are impacted by substantial DIN elevation above natural reference conditions
- 67.0% of sites had *E. coli* concentrations in the NPS-FM Band D or E, with a predicted average infection risk >3%. The highest percentage of sites (63.5%) were in band E, with an average infection risk of >7%.
- The largest portion of sites with exceedances were for the suspended fine sediment and *E. coli* attributes.

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Resource Management Act 1991 (No. 69).

Appendix A

Table A 1. Attribute state and NOF band.

Site	Ammonia (toxicity) Maximum	Ammonia (toxicity) Median	Nitrate (toxicity) 95th percentile	Nitrate (toxicity) Median	Suspended fine sediment Median	Dissolved inorganic nitrogen 95th percentile	Dissolved inorganic nitrogen Median	Dissolved reactive phosphorus 95th percentile	Dissolved reactive phosphorus Median	<i>Escherichia coli</i> (<i>E. coli</i>) % exceedances over 260/100 mL <i>E. coli</i> /100 mL	<i>Escherichia coli</i> (<i>E. coli</i>) % exceedances over 540/100 mL <i>E. coli</i> /100 mL	<i>Escherichia coli</i> (<i>E. coli</i>) 95th percentile <i>E. coli</i> /100 mL	<i>Escherichia coli</i> (<i>E. coli</i>) Median <i>E. coli</i> /100 mL	<i>Escherichia coli</i> (<i>E. coli</i>) Overall state
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L					
Awakino River at Gribbon Rd (33_6)	0.012 (A)	0.003 (A)	0.18 (A)	0.115 (A)	2.16 (D)	0.186 (A)	0.12 (A)	0.018 (a)	0.013 (c)	22 (B)	15 (C)	4050 (E)	75 (A)	(E)
Awakino River at SH3 Awakau Rd Junction (33_9)	0.032 (A)	0.003 (A)	0.52 (A)	0.23 (A)	1.3 (A)	0.542 (A)	0.238 (A)	0.016 (a)	0.009 (b)	43 (D)	27 (D)	4200 (E)	150 (D)	(E)
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd (41_9)	0.076 (B)	0.021 (A)	2.4 (B)	1.415 (B)	0.42 (D)	2.477 (D)	1.428 (D)	0.009 (a)	0.002 (a)	45 (D)	16 (C)	2200 (E)	210 (D)	(E)
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd (39_11)	0.548 (C)	0.027 (A)	1.155 (A)	0.635 (A)	0.97 (A)	1.222 (C)	0.688 (C)	0.005 (a)	0.002 (a)	48 (D)	15 (C)	1900 (E)	255 (D)	(E)
Hikutaia River at Old Maratoto Rd (169_2)	0.037 (A)	0.002 (A)	0.255 (A)	0.02 (A)	3.18 (A)	0.264 (A)	0.024 (A)	0.006 (a)	0.002 (a)	37 (D)	17 (C)	1000 (B)	240 (D)	(D)
Hinemaiaia River at SH1 (171_5)	0.009 (A)	0.003 (A)	0.132 (A)	0.093 (A)	2.26 (A)	0.138 (A)	0.098 (A)	0.035 (c)	0.024 (d)	0 (A)	0 (A)	82 (A)	16 (A)	(A)
Kaniwhaniwha Stm at Wright Rd (222_16)	0.031 (A)	0.009 (A)	0.88 (A)	0.395 (A)	0.89 (D)	0.916 (B)	0.416 (B)	0.016 (a)	0.007 (b)	60 (E)	36 (E)	3550 (E)	360 (E)	(E)
Karapiro Stm at Hickey Rd Bridge - Cambridge (230_5)	0.095 (B)	0.008 (A)	1.82 (B)	0.61 (A)	0.86 (D)	1.877 (C)	0.619 (C)	0.078 (d)	0.042 (d)	37 (D)	20 (D)	1650 (E)	220 (D)	(E)
Kauaeranga River at Smiths Cableway/Recorder (234_11)	0.016 (A)	0.002 (A)	0.159 (A)	0.025 (A)	3.84 (A)	0.164 (A)	0.03 (A)	0.007 (a)	0.002 (a)	22 (B)	12 (C)	1230 (E)	120 (A)	(E)

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Overall state
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median		
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL		
Kawaunui Stm at SH5 Br (240_5)	0.075 (B)	0.005 (A)	3.25 (B)	2.6 (C)	1.42 (C)	3.379 (D)	2.662 (D)	0.074 (d)	0.05 (d)	27 (B)	17 (C)	2100 (E)	155 (D)		(E)
Kirikiroa Stm at Tauhara Dr (253_4)	0.223 (B)	0.098 (B)	2.3 (B)	0.76 (A)	0.46 (D)	2.57 (D)	1.055 (D)	0.018 (a)	0.012 (c)	83 (E)	52 (E)	5350 (E)	570 (E)		(E)
Komakorau Stm at Henry Rd (258_4)	0.444 (C)	0.267 (C)	4.35 (C)	1.345 (B)	0.19 (D)	5.045 (D)	2.06 (D)	0.03 (c)	0.01 (b)	92 (E)	75 (E)	3800 (E)	1050 (E)		(E)
Kuratau River at SH41 Moerangi (282_4)	0.019 (A)	0.002 (A)	0.53 (A)	0.295 (A)	2.68 (A)	0.535 (A)	0.3 (B)	0.002 (a)	0.002 (a)	0 (A)	0 (A)	56 (A)	9 (A)		(A)
Kuratau River at Te Rae Street T10 (282_5)	0.026 (A)	0.003 (A)	0.95 (A)	0.655 (A)	--	0.956 (B)	0.66 (C)	0.017 (a)	0.004 (a)	0 (A)	0 (A)	170 (A)	33 (A)		(A)
Little Waipa Stm at Arapuni - Putaruru Rd (335_1)	0.302 (B)	0.005 (A)	2.7 (B)	1.67 (B)	1.54 (C)	2.705 (D)	1.692 (D)	0.097 (d)	0.054 (d)	38 (D)	15 (C)	1850 (E)	215 (D)		(E)
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1) (359_1)	0.052 (B)	0.003 (A)	0.985 (A)	0.515 (A)	0.92 (D)	1.001 (B)	0.52 (C)	0.038 (c)	0.032 (d)	47 (D)	18 (C)	1550 (E)	240 (D)		(E)
Mangakara Stm (Reporoa) at SH5 (380_2)	0.211 (B)	0.011 (A)	1.84 (B)	1.29 (B)	0.88 (D)	1.853 (C)	1.314 (D)	0.06 (d)	0.048 (d)	32 (C)	12 (C)	1100 (C)	170 (D)		(D)
Mangakino Stm (Whakamaru) at Sandel Rd (388_1)	0.016 (A)	0.002 (A)	0.975 (A)	0.67 (A)	1.87 (A)	0.98 (B)	0.675 (C)	0.054 (c)	0.038 (d)	9 (A)	4 (A)	370 (A)	41 (A)		(A)
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd (398_1)	0.201 (B)	0.074 (B)	2.015 (B)	0.82 (A)	0.5 (D)	2.305 (D)	0.968 (C)	1.19 (d)	0.182 (d)	85 (E)	42 (E)	16500 (E)	475 (E)		(E)
Mangamingi Stm (Tokoroa) at Paraonui Rd Br (407_1)	0.515 (C)	0.126 (B)	3.35 (B)	2.65 (C)	0.78 (D)	3.585 (D)	2.982 (D)	0.425 (d)	0.26 (d)	80 (E)	48 (E)	2950 (E)	505 (E)		(E)

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Overall state	
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median			
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL			
Manganui River at Off																
Manganui Rd (410_4)	0.011 (A)	0.003 (A)	0.27 (A)	0.141 (A)	1.08 (A)	0.283 (A)	0.146 (A)	0.021 (a)	0.013 (c)	35 (D)	23 (D)	6450 (E)	175 (D)			(E)
Mangaohoi Stm at South Branch Maru Rd (411_9)	0.009 (A)	0.003 (A)	0.375 (A)	0.225 (A)	1.55 (B)	0.38 (A)	0.234 (A)	0.063 (d)	0.04 (d)	23 (B)	10 (C)	1250 (E)	85 (A)			(E)
Mangaokewa Stm at Te Kuiti Borough W/S Intake (414_12)	0.037 (A)	0.006 (A)	1.03 (A)	0.56 (A)	0.9 (D)	1.052 (B)	0.577 (C)	0.026 (b)	0.015 (c)	75 (E)	40 (E)	10500 (E)	470 (E)			(E)
Mangaone Stm (Waikato) at Annebrooke Rd Br (417_7)	0.027 (A)	0.008 (A)	3 (B)	2.5 (C)	1.17 (A)	3.027 (D)	2.514 (D)	0.083 (d)	0.063 (d)	95 (E)	53 (E)	1950 (E)	600 (E)			(E)
Mangaonua Stm at Hoeka Rd (421_10)	0.059 (B)	0.032 (B)	2.15 (B)	1.46 (B)	1.07 (A)	2.223 (D)	1.53 (D)	0.029 (b)	0.012 (c)	90 (E)	78 (E)	6700 (E)	1100 (E)			(E)
Mangaonua Stm at Te Miro Rd (a.k.a Waitakaruru stm) (421_16)	0.008 (A)	0.003 (A)	1.205 (A)	0.47 (A)	1.29 (A)	1.218 (C)	0.475 (B)	0.024 (b)	0.015 (c)	29 (B)	12 (C)	1800 (E)	160 (D)			(E)
Mangaotaki River at SH3 Br (428_3)	0.023 (A)	0.004 (A)	1.066 (A)	0.67 (A)	0.78 (D)	1.074 (B)	0.68 (C)	0.021 (a)	0.012 (c)	59 (E)	31 (E)	15000 (E)	355 (E)			(E)
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd (438_3)	0.095 (B)	0.019 (A)	2.9 (B)	1.665 (B)	0.7 (D)	3.015 (D)	1.723 (D)	0.385 (d)	0.114 (d)	71 (E)	35 (E)	6500 (E)	390 (E)			(E)
Mangapu River at Otorohanga (443_3)	0.093 (B)	0.013 (A)	1.533 (B)	0.81 (A)	0.61 (D)	1.577 (C)	0.821 (C)	0.042 (c)	0.022 (d)	68 (E)	50 (E)	7250 (E)	535 (E)			(E)
Mangatangi River at SH2 Maramarua (453_6)	0.044 (A)	0.006 (A)	1.215 (A)	0.192 (A)	0.52 (D)	1.289 (C)	0.21 (A)	0.035 (c)	0.02 (d)	67 (E)	31 (E)	3550 (E)	360 (E)			(E)
Mangatawhiri River at Lyons Rd At Buckingham Br (459_6)	0.022 (A)	0.003 (A)	0.46 (A)	0.041 (A)	1.66 (A)	0.47 (A)	0.046 (A)	0.02 (a)	0.012 (c)	38 (D)	16 (C)	1100 (C)	220 (D)			(D)

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Overall state
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median		
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL		
Mangatutu Stm (Waikeria) at Walker Rd Br (476_7)	0.029 (A)	0.003 (A)	1.01 (A)	0.38 (A)	1.62 (B)	1.019 (B)	0.385 (B)	0.017 (a)	0.009 (b)	23 (B)	18 (C)	1800 (E)	130 (A)		(E)
Mangauika Stm at Te Awamutu Borough W/S Intake (477_10)	0.004 (A)	0.002 (A)	0.27 (A)	0.21 (A)	4.03 (A)	0.275 (A)	0.215 (A)	0.008 (a)	0.002 (a)	13 (A)	8 (B)	1000 (B)	18 (A)		(B)
Mangawara Stm at Rutherford Rd Br (481_7)	0.22 (B)	0.124 (B)	4.55 (C)	0.8 (A)	0.27 (D)	4.975 (D)	1.15 (D)	0.133 (d)	0.056 (d)	89 (E)	75 (E)	5575 (E)	1100 (E)		(E)
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd (488_1)	0.133 (B)	0.044 (B)	2.7 (B)	1.93 (B)	0.24 (D)	2.955 (D)	2.054 (D)	0.255 (d)	0.038 (d)	88 (E)	47 (E)	3150 (E)	505 (E)		(E)
Mangawhero Stm (Kaihere) at Mangawara Rd (489_2)	0.007 (A)	0.003 (A)	0.495 (A)	0.315 (A)	0.93 (A)	0.5 (A)	0.32 (B)	0.048 (c)	0.036 (d)	8 (A)	3 (A)	405 (A)	42 (A)		(A)
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res) T1 (504_2)	0.009 (A)	0.005 (A)	0.87 (A)	0.775 (A)	1.47 (C)	0.877 (B)	0.783 (C)	0.149 (d)	0.124 (d)	7 (A)	5 (B)	470 (A)	56 (A)		(B)
Marokopa River at Speedies Rd (Off Te Anga Rd) (513_3)	0.014 (A)	0.004 (A)	0.4 (A)	0.27 (A)	1.05 (D)	0.408 (A)	0.275 (B)	0.022 (b)	0.014 (c)	40 (D)	20 (D)	1800 (E)	140 (D)		(E)
Matahuru Stm at Waiterimu Road Below Confluence (516_5)	0.101 (B)	0.024 (A)	1.99 (B)	0.765 (A)	0.32 (D)	2.119 (D)	0.827 (C)	0.038 (c)	0.024 (d)	87 (E)	51 (E)	7350 (E)	550 (E)		(E)
Mokau River at Awakau Rd (556_2)	0.038 (A)	0.007 (A)	0.93 (A)	0.42 (A)	0.5 (D)	0.972 (B)	0.432 (B)	0.013 (a)	0.008 (b)	47 (D)	35 (E)	3300 (E)	180 (D)		(E)
Mokau River at Mangaokewa Rd (Off SH30) (556_5)	0.013 (A)	0.002 (A)	0.695 (A)	0.325 (A)	--	0.7 (B)	0.33 (B)	0.032 (c)	0.014 (c)	30 (B)	15 (C)	4100 (E)	135 (D)		(E)

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli) Overall state
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median	
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	
Mokau River at Totoro Rd Recorder (556_9)	0.027 (A)	0.004 (A)	1.145 (A)	0.545 (A)	0.75 (D)	1.158 (C)	0.55 (C)	0.02 (a)	0.01 (b)	42 (D)	28 (D)	8850 (E)	200 (D)	(E)
Mokauiti Stm at Three Way Point - Aria (557_5)	0.078 (B)	0.009 (A)	1.035 (A)	0.28 (A)	0.76 (C)	1.095 (B)	0.316 (B)	0.037 (c)	0.008 (b)	45 (D)	27 (D)	18500 (E)	225 (D)	(E)
Ohaeroa Stm at SH22 Br (612_9)	0.014 (A)	0.003 (A)	2.15 (B)	1.575 (B)	0.86 (B)	2.155 (D)	1.584 (D)	0.016 (a)	0.008 (b)	60 (E)	33 (E)	2025 (E)	380 (E)	(E)
Ohautira Stm at Waingaro Te Uku Rd (616_1)	0.014 (A)	0.003 (A)	0.606 (A)	0.33 (A)	0.85 (B)	0.617 (B)	0.34 (B)	0.026 (b)	0.019 (d)	61 (E)	34 (E)	3250 (E)	370 (E)	(E)
Ohinemuri River at Karangahake (619_16)	0.056 (B)	0.01 (A)	0.898 (A)	0.384 (A)	2.96 (A)	0.953 (B)	0.41 (B)	0.005 (a)	0.002 (a)	15 (A)	13 (C)	1986 (E)	58 (A)	(E)
Ohinemuri River at Queens Head (619_19)	0.139 (B)	0.021 (A)	1.29 (A)	0.94 (A)	3.09 (A)	1.508 (C)	0.988 (C)	0.01 (a)	0.002 (a)	15 (A)	12 (C)	1950 (E)	60 (A)	(E)
Ohinemuri River at SH25 Br (619_20)	0.019 (A)	0.002 (A)	0.915 (A)	0.455 (A)	3.01 (A)	0.92 (B)	0.46 (B)	0.013 (a)	0.004 (a)	23 (B)	5 (B)	900 (B)	105 (A)	(B)
Ohote Stm at Whatawhata/Horotiu Rd (624_5)	0.074 (B)	0.025 (A)	1.42 (A)	0.465 (A)	0.62 (C)	1.498 (C)	0.538 (C)	0.042 (c)	0.02 (d)	40 (D)	13 (C)	1050 (C)	205 (D)	(D)
Oparau River at Langdon Rd (Off Okupata Rd) (658_1)	0.009 (A)	0.003 (A)	0.34 (A)	0.126 (A)	1.6 (A)	0.345 (A)	0.132 (A)	0.01 (a)	0.007 (b)	27 (B)	11 (C)	2125 (E)	120 (A)	(E)
Opuatia Stm at Ponganui Rd (665_5)	0.02 (A)	0.005 (A)	1.12 (A)	0.74 (A)	0.52 (D)	1.14 (C)	0.751 (C)	0.013 (a)	0.006 (a)	65 (E)	32 (E)	4000 (E)	400 (E)	(E)
Oraka Stm at Lake Rd (669_6)	0.32 (B)	0.015 (A)	2.75 (B)	2.1 (B)	1 (D)	3.12 (D)	2.14 (D)	0.172 (d)	0.079 (d)	68 (E)	18 (C)	3150 (E)	300 (E)	(E)
Otamakokore Stm at Hossack Rd (683_4)	0.151 (B)	0.007 (A)	2.03 (B)	0.75 (A)	1.23 (D)	2.048 (C)	0.759 (C)	0.191 (d)	0.15 (d)	42 (D)	12 (C)	1800 (E)	235 (D)	(E)

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli) Overall state
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median	
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	
Piako River at Kiwitahi (749_10)	0.268 (B)	0.003 (A)	3.35 (B)	0.815 (A)	1.5 (C)	3.404 (D)	0.941 (C)	0.067 (d)	0.042 (d)	45 (D)	22 (D)	3700 (E)	260 (D)	(E)
Piako River at Paeroa-Tahuna Rd Br (749_15)	0.058 (B)	0.016 (A)	4 (C)	1.37 (B)	0.96 (A)	4.088 (D)	1.404 (D)	0.57 (d)	0.2 (d)	80 (E)	45 (E)	5350 (E)	500 (E)	(E)
Piakonui Stm at Piakonui Rd (753_4)	0.03 (A)	0.002 (A)	0.67 (A)	0.205 (A)	1.51 (C)	0.675 (B)	0.21 (A)	0.02 (a)	0.011 (c)	17 (A)	7 (B)	825 (B)	65 (A)	(B)
Pokaiwhenua Stm at Puketurua (786_2)	0.089 (B)	0.002 (A)	2.65 (B)	1.835 (B)	1.12 (D)	2.675 (D)	1.84 (D)	0.116 (d)	0.09 (d)	37 (D)	22 (D)	1800 (E)	220 (D)	(E)
Pueto Stm at Broadlands Rd Br (802_1)	0.008 (A)	0.003 (A)	0.67 (A)	0.465 (A)	1.83 (A)	0.678 (B)	0.474 (B)	0.08 (d)	0.072 (d)	0 (A)	0 (A)	102 (A)	26 (A)	(A)
Puniu River at Bartons Corner Rd Br (818_2)	0.049 (A)	0.007 (A)	1.51 (B)	0.655 (A)	--	1.575 (C)	0.667 (C)	0.032 (c)	0.022 (d)	38 (D)	31 (E)	3325 (E)	180 (D)	(E)
Tahunaatara Stm at Ohakuri Rd (934_1)	0.083 (B)	0.003 (A)	1.1 (A)	0.59 (A)	1.27 (D)	1.183 (C)	0.603 (C)	0.05 (c)	0.034 (d)	22 (B)	15 (C)	3850 (E)	130 (A)	(E)
Tairua River at Morrisons Br Hikuai (940_10)	0.006 (A)	0.002 (A)	0.106 (A)	0.015 (A)	--	0.11 (A)	0.02 (A)	0.002 (a)	0.002 (a)	12 (A)	2 (A)	450 (A)	60 (A)	(A)
Tapu River at Tapu-Coroglen Rd (954_5)	0.007 (A)	0.003 (A)	0.031 (A)	0.003 (A)	4.06 (A)	0.036 (A)	0.008 (A)	0.005 (a)	0.002 (a)	15 (A)	7 (B)	685 (B)	80 (A)	(B)
Tauranga-Taupo River at Te Kono Slackline (971_4)	0.005 (A)	0.002 (A)	0.09 (A)	0.059 (A)	3.11 (A)	0.095 (A)	0.064 (A)	0.016 (a)	0.013 (c)	0 (A)	0 (A)	88 (A)	16 (A)	(A)
Tawarau River at Off Speedies Rd (976_1)	0.016 (A)	0.004 (A)	0.455 (A)	0.33 (A)	1.19 (D)	0.46 (A)	0.335 (B)	0.029 (b)	0.015 (c)	40 (D)	22 (D)	3275 (E)	170 (D)	(E)
Tokaanu Power Station	0.046 (A)	0.003 (A)	0.014 (A)	0.002 (A)	--	0.048 (A)	0.007 (A)	0.006 (a)	0.002 (a)	0 (A)	0 (A)	18 (A)	3 (A)	(A)
Tailrace Canal at SH41 Bridge	0.046 (A)	0.003 (A)	0.014 (A)	0.002 (A)	--	0.048 (A)	0.007 (A)	0.006 (a)	0.002 (a)	0 (A)	0 (A)	18 (A)	3 (A)	(A)

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Overall state	
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median			
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL			
Over Canal (1491_1)																
Tokaanu Stm at Off SH41																
Turangi (1045_3)	0.005 (A)	0.002 (A)	0.48 (A)	0.435 (A)	--	0.488 (A)	0.44 (B)	0.081 (d)	0.076 (d)	2 (A)	2 (A)	130 (A)	10 (A)		(A)	
Tongariro River at Turangi Cableway (1050_2)	0.005 (A)	0.002 (A)	0.096 (A)	0.026 (A)	3.51 (A)	0.1 (A)	0.03 (A)	0.017 (a)	0.015 (c)	5 (A)	3 (A)	219 (A)	15 (A)		(A)	
Torepatutahi Stm at Vaile Rd Br (1057_6)	0.01 (A)	0.002 (A)	1.07 (A)	0.485 (A)	--	1.075 (B)	0.493 (B)	0.098 (d)	0.084 (d)	4 (A)	0 (A)	208 (A)	55 (A)		(A)	
Waerenga Stm at Taniwha Rd (1098_1)	0.028 (A)	0.006 (A)	1.31 (A)	0.86 (A)	0.91 (B)	1.319 (C)	0.875 (C)	0.054 (d)	0.02 (d)	78 (E)	38 (E)	6200 (E)	500 (E)		(E)	
Waiau River at E309 Rd Ford (1105_3)	0.009 (A)	0.002 (A)	0.156 (A)	0.013 (A)	2.67 (A)	0.166 (A)	0.018 (A)	0.002 (a)	0.002 (a)	12 (A)	5 (B)	695 (B)	90 (A)		(B)	
Waihaha River at SH32 (1106_4)	0.007 (A)	0.002 (A)	0.144 (A)	0.106 (A)	3.3 (A)	0.149 (A)	0.111 (A)	0.032 (c)	0.017 (c)	0 (A)	0 (A)	60 (A)	8 (A)		(A)	
Waihou River at Okauia (1122_18)	0.081 (B)	0.005 (A)	1.645 (B)	1.145 (B)	1.09 (D)	1.658 (C)	1.155 (D)	0.078 (d)	0.06 (d)	38 (D)	17 (C)	2000 (E)	230 (D)		(E)	
Waihou River at Te Aroha (1122_34)	0.116 (B)	0.01 (A)	1.621 (B)	1.094 (B)	0.9 (B)	1.651 (C)	1.115 (D)	0.084 (d)	0.05 (d)	50 (D)	27 (D)	1860 (E)	261 (E)		(E)	
Waihou River at Whites Rd (1122_41)	0.011 (A)	0.002 (A)	0.865 (A)	0.76 (A)	5.2 (A)	0.87 (B)	0.765 (C)	0.08 (d)	0.074 (d)	5 (A)	3 (A)	260 (A)	42 (A)		(A)	
Waikato River at Horotiu Br (1131_69)	0.028 (A)	0.005 (A)	0.62 (A)	0.3 (A)	1.58 (D)	0.649 (B)	0.305 (B)	0.039 (c)	0.02 (d)	12 (A)	8 (B)	1450 (E)	80 (A)		(E)	
Waikato River at Huntly-Tainui Br (1131_77)	0.031 (A)	0.005 (A)	1.05 (A)	0.42 (A)	0.99 (D)	1.076 (B)	0.431 (B)	0.03 (c)	0.021 (d)	27 (B)	20 (D)	2750 (E)	130 (A)		(E)	
Waikato River at Mercer Br (1131_91)	0.029 (A)	0.003 (A)	0.94 (A)	0.395 (A)	--	0.96 (B)	0.4 (B)	0.028 (b)	0.018 (c)	20 (B)	13 (C)	1950 (E)	80 (A)		(E)	
Waikato River at Narrows Br (1131_101)	0.033 (A)	0.009 (A)	0.565 (A)	0.28 (A)	1.83 (D)	0.581 (B)	0.296 (B)	0.03 (c)	0.018 (c)	10 (A)	5 (B)	900 (B)	49 (A)		(B)	

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Overall state
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median		
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL		
Waikato River at Ohaaki Br (1131_105)	0.013 (A)	0.003 (A)	0.064 (A)	0.036 (A)	4.73 (A)	0.082 (A)	0.042 (A)	0.01 (a)	0.006 (a)	2 (A)	0 (A)	75 (A)	14 (A)	(A)	
Waikato River at Ohakuri Tailrace Br (1131_107)	0.016 (A)	0.003 (A)	0.24 (A)	0.091 (A)	2.42 (C)	0.265 (A)	0.096 (A)	0.016 (a)	0.009 (b)	0 (A)	0 (A)	20 (A)	3 (A)	(A)	
Waikato River at Taupo Control Gates (1131_127)	0.008 (A)	0.003 (A)	0.006 (A)	0.001 (A)	--	0.012 (A)	0.006 (A)	0.002 (a)	0.002 (a)	0 (A)	0 (A)	18 (A)	2 (A)	(A)	
Waikato River at Tuakau Br (1131_133)	0.022 (A)	0.003 (A)	0.935 (A)	0.395 (A)	0.66 (D)	0.957 (B)	0.406 (B)	0.026 (b)	0.014 (c)	23 (B)	13 (C)	1850 (E)	70 (A)	(E)	
Waikato River at Waipapa Tailrace (1131_143)	0.018 (A)	0.007 (A)	0.375 (A)	0.175 (A)	2.13 (D)	0.383 (A)	0.198 (A)	0.023 (b)	0.016 (c)	5 (A)	3 (A)	240 (A)	7 (A)	(A)	
Waikato River at Whakamaru Tailrace (1131_147)	0.018 (A)	0.003 (A)	0.305 (A)	0.09 (A)	2.38 (C)	0.31 (A)	0.102 (A)	0.016 (a)	0.008 (b)	2 (A)	0 (A)	105 (A)	8 (A)	(A)	
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22 (1167_4)	0.021 (A)	0.005 (A)	0.932 (A)	0.495 (A)	0.7 (C)	0.969 (B)	0.504 (C)	0.017 (a)	0.01 (b)	43 (D)	23 (D)	4520 (E)	250 (D)	(E)	
Waiohotu Stm at Waiohotu Rd (Off SH5) (1173_2)	0.003 (A)	0.002 (A)	0.235 (A)	0.145 (A)	--	0.24 (A)	0.15 (A)	0.02 (a)	0.013 (c)	8 (A)	2 (A)	395 (A)	56 (A)	(A)	
Waiomou Stm at Matamata-Tauranga Rd (1174_4)	0.051 (B)	0.004 (A)	1.045 (A)	0.51 (A)	1.28 (D)	1.059 (B)	0.518 (C)	0.026 (b)	0.018 (c)	68 (E)	28 (D)	2750 (E)	320 (E)	(E)	
Waiotapu Stm at Campbell Rd Br (1186_2)	--	0.346 (C)	1.136 (A)	0.92 (A)	1.17 (D)	2.09 (D)	1.9 (D)	0.006 (a)	0.002 (a)	2 (A)	2 (A)	42 (A)	2 (A)	(A)	
Waiotapu Stm at Homestead Rd Br (1186_4)	0.219 (B)	0.122 (B)	1.926 (B)	1.33 (B)	--	2.303 (D)	1.62 (D)	0.048 (c)	0.033 (d)	15 (A)	2 (A)	490 (A)	120 (A)	(A)	

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Overall state
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median		
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL		
Waipa River at Mangaokewa Rd (1191_5)	0.029 (A)	0.003 (A)	0.54 (A)	0.305 (A)	1.7 (B)	0.545 (A)	0.322 (B)	0.013 (a)	0.006 (a)	36 (D)	24 (D)	2175 (E)	180 (D)		(E)
Waipa River at Otewa (1191_7)	0.04 (A)	0.004 (A)	0.568 (A)	0.261 (A)	1.65 (B)	0.578 (B)	0.268 (B)	0.014 (a)	0.008 (b)	42 (D)	22 (D)	3262 (E)	232 (D)		(E)
Waipa River at Pirongia-Ngutunui Rd Br (1191_10)	0.041 (A)	0.008 (A)	1.41 (A)	0.65 (A)	--	1.433 (C)	0.676 (C)	0.022 (b)	0.015 (c)	57 (E)	38 (E)	6050 (E)	305 (E)		(E)
Waipa River at SH23 Br Whatawhata (1191_11)	0.027 (A)	0.01 (A)	1.522 (B)	0.72 (A)	0.52 (D)	1.559 (C)	0.745 (C)	0.025 (b)	0.017 (c)	53 (E)	37 (E)	4762 (E)	308 (E)		(E)
Waipa River at SH3 Otorohanga (1191_12)	0.046 (A)	0.006 (A)	1.11 (A)	0.41 (A)	1.11 (D)	1.128 (C)	0.435 (B)	0.016 (a)	0.008 (b)	35 (D)	27 (D)	4800 (E)	180 (D)		(E)
Waipapa Stm (Mokai) at Tirohanga Rd Br (1202_7)	0.01 (A)	0.003 (A)	1.705 (B)	1.26 (B)	1.15 (D)	1.71 (C)	1.269 (D)	0.134 (d)	0.089 (d)	5 (A)	2 (A)	375 (A)	90 (A)		(A)
Waitahanui River at Blake Rd (1226_1)	0.01 (A)	0.003 (A)	0.445 (A)	0.4 (A)	2.91 (A)	0.452 (A)	0.405 (B)	0.048 (c)	0.042 (d)	2 (A)	0 (A)	145 (A)	20 (A)		(A)
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br (1230_1)	0.068 (B)	0.007 (A)	0.885 (A)	0.188 (A)	0.94 (A)	0.961 (B)	0.21 (A)	0.038 (c)	0.023 (d)	47 (D)	20 (D)	3050 (E)	240 (D)		(E)
Waitawhiriwhiri Stm at Edgecumbe Street (1236_2)	0.366 (B)	0.24 (B)	1.265 (A)	0.84 (A)	0.42 (D)	1.745 (C)	1.47 (D)	0.134 (d)	0.026 (d)	90 (E)	62 (E)	7500 (E)	750 (E)		(E)
Waitekauri River at U/S Ohinemuri Conflu (1239_32)	0.022 (A)	0.002 (A)	0.361 (A)	0.108 (A)	3.5 (A)	0.366 (A)	0.122 (A)	0.008 (a)	0.002 (a)	10 (A)	8 (B)	2890 (E)	70 (A)		(E)
Waitetuna River at Te Uku-Waingaro Rd (1247_2)	0.033 (A)	0.004 (A)	0.722 (A)	0.425 (A)	0.74 (C)	0.743 (B)	0.448 (B)	0.021 (b)	0.012 (c)	64 (E)	34 (E)	3110 (E)	400 (E)		(E)

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Escherichia coli (E. coli)	Overall state
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL	% exceedances over 540/100 mL	95th percentile	Median		
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL	E. coli/100 mL		
Waitoa River at Landsdowne Rd Br (1249_15)	0.034 (A)	0.005 (A)	2.75 (B)	1.5 (B)	1.46 (C)	2.8 (D)	1.505 (D)	0.044 (c)	0.022 (d)	77 (E)	33 (E)	2200 (E)	400 (E)		(E)
Waitoa River at Mellon Rd Recorder (1249_18)	0.161 (B)	0.018 (A)	3.5 (B)	1.98 (B)	1.23 (A)	3.681 (D)	2.05 (D)	0.111 (d)	0.058 (d)	63 (E)	30 (D)	3550 (E)	325 (E)		(E)
Waitomo Stm at SH31 Otorohanga (1253_5)	0.069 (B)	0.01 (A)	0.855 (A)	0.53 (A)	0.6 (D)	0.926 (B)	0.545 (C)	0.019 (a)	0.006 (a)	63 (E)	40 (E)	4800 (E)	370 (E)		(E)
Waitomo Stm at Tumutumu Rd (1253_7)	0.063 (B)	0.004 (A)	0.78 (A)	0.61 (A)	0.94 (D)	0.812 (B)	0.615 (C)	0.02 (a)	0.01 (b)	43 (D)	25 (D)	2400 (E)	205 (D)		(E)
Waiwawa River at SH25 Coroglen (1257_3)	0.004 (A)	0.002 (A)	0.046 (A)	0.005 (A)	3.2 (A)	0.054 (A)	0.01 (A)	0.002 (a)	0.002 (a)	13 (A)	3 (A)	455 (A)	60 (A)		(A)
Whakapipi Stm at SH22 Br (1282_8)	0.034 (A)	0.006 (A)	5.55 (C)	3.55 (C)	1.47 (C)	5.56 (D)	3.572 (D)	0.092 (d)	0.026 (d)	69 (E)	29 (D)	2150 (E)	320 (E)		(E)
Whakauru Stm at U/S SH1 Br (1287_7)	0.037 (A)	0.006 (A)	1.13 (A)	0.445 (A)	0.64 (D)	1.144 (C)	0.455 (B)	0.055 (d)	0.027 (d)	93 (E)	60 (E)	2250 (E)	620 (E)		(E)
Whangamarino River at Island Block Rd (1293_7)	0.239 (B)	0.018 (A)	0.885 (A)	0.134 (A)	0.21 (D)	1.14 (C)	0.228 (A)	0.018 (a)	0.005 (a)	31 (C)	16 (C)	1075 (C)	110 (A)		(C)
Whangamarino River at Jefferies Rd Br (1293_9)	0.069 (B)	0.014 (A)	2.4 (B)	0.68 (A)	0.4 (D)	2.55 (D)	0.729 (C)	0.051 (c)	0.028 (d)	95 (E)	67 (E)	5500 (E)	800 (E)		(E)
Whangamata Stm (Kinloch) at Whangamata Rd (1300_1)	0.009 (A)	0.002 (A)	1.74 (B)	1.35 (B)	--	1.754 (C)	1.355 (D)	0.092 (d)	0.066 (d)	5 (A)	4 (A)	298 (A)	80 (A)		(A)
Whanganui Stm at Lakeside Lake Taupo T8 (1301_1)	0.011 (A)	0.002 (A)	0.5 (A)	0.31 (A)	--	0.505 (A)	0.315 (B)	0.017 (a)	0.008 (b)	2 (A)	0 (A)	140 (A)	28 (A)		(A)

Site	Ammonia (toxicity)	Ammonia (toxicity)	Nitrate (toxicity)	Nitrate (toxicity)	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Dissolved reactive phosphorus	<i>Escherichia coli</i> (<i>E. coli</i>)	<i>Escherichia coli</i> (<i>E. coli</i>)	<i>Escherichia coli</i> (<i>E. coli</i>)	<i>Escherichia coli</i> (<i>E. coli</i>)	<i>Escherichia coli</i> (<i>E. coli</i>) Overall state
	Maximum	Median	95th percentile	Median	Median	95th percentile	Median	95th percentile	Median	% exceedances over 260/100 mL <i>E. coli</i> /100 mL	% exceedances over 540/100 mL <i>E. coli</i> /100 mL	95th percentile <i>E. coli</i> /100 mL	Median <i>E. coli</i> /100 mL	
	mg NH4-N/L	mg NH4-N/L	mg NO3 – N/L	mg NO3 – N/L	Visual clarity (metres)	mg/L	mg/L	mg/L	mg/L					
Whangape Stm at Rangiriri-Glen Murray Rd (1302_1)	0.505 (C)	0.007 (A)	0.89 (A)	0.016 (A)	0.18 (D)	0.98 (B)	0.066 (A)	0.02 (a)	0.002 (a)	33 (C)	9 (B)	728 (B)	120 (A)	(C)
Wharekawa River at SH25 (1312_3)	0.021 (A)	0.002 (A)	0.22 (A)	0.041 (A)	2.49 (A)	0.225 (A)	0.05 (A)	0.005 (a)	0.002 (a)	35 (D)	13 (C)	1600 (E)	190 (D)	(E)
Whareroa Stm (Taupo) at Lakeside Lake Taupo T9 (1318_4)	0.003 (A)	0.002 (A)	1.005 (A)	0.67 (A)	--	1.01 (B)	0.675 (C)	0.026 (b)	0.02 (d)	8 (A)	2 (A)	400 (A)	95 (A)	(A)
Whirinaki Stm at Corbett Rd (1323_1)	0.034 (A)	0.002 (A)	1.005 (A)	0.78 (A)	--	1.014 (B)	0.785 (C)	0.066 (d)	0.061 (d)	5 (A)	2 (A)	325 (A)	32 (A)	(A)

Table A 2. Data assessment period (first value), number of samples assessed (second value), and number of samples less than method detection limit (third value) for the parameters assessed.

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	<i>Escherichia coli</i> (<i>E. coli</i>)
Awakino River at Gribbon Rd (33_6)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Awakino River at SH3 Awakau Rd Junction (33_9)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd (41_9)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 53 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd (39_11)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Hikutaia River at Old Maratoto Rd (169_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Hinemaiaia River at SH1 (171_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Kaniwhaniwha Stm at Wright Rd (222_16)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 54 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Karapiro Stm at Hickey Rd Bridge - Cambridge (230_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 48 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Kauaeranga River at Smiths Cableway/Recorder (234_11)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2011–Sep 2017 59 0
Kawaunui Stm at SH5 Br (240_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Kirikiroa Stm at Tauhara Dr (253_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Komakorau Stm at Henry Rd (258_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Escherichia coli (E. coli)
Kuratau River at SH41 Moerangi (282_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Kuratau River at Te Rae Street T10 (282_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Little Waipa Stm at Arapuni - Putaruru Rd (335_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1) (359_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Mangakara Stm (Reporoa) at SH5 (380_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Mangakino Stm (Whakamaru) at Sandel Rd (388_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 50 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Mangakotukutuku Stm (Rukuhia) at Peacocks Rd (398_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Mangamingi Stm (Tokoroa) at Paraonui Rd Br (407_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Manganui River at Off Manganui Rd (410_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Mangaohoi Stm at South Branch Maru Rd (411_9)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Mar 2012–Sep 2017 60 0
Mangaokewa Stm at Te Kuiti Borough W/S Intake (414_12)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Mangaone Stm (Waikato) at Annebrooke Rd Br (417_7)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Mangaonua Stm at Hoeka Rd (421_10)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Escherichia coli (E. coli)
Mangaonua Stm at Te Miro Rd (a.k.a Waitakaruru stm) (421_16)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Mar 2012–Sep 2017 58 0
Mangaotaki River at SH3 Br (428_3)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 54 0
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd (438_3)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 51 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Mangapu River at Otorohanga (443_3)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 51 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2011–Sep 2017 60 0
Mangatangi River at SH2 Maramarua (453_6)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 53 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Mangatawhiri River at Lyons Rd At Buckingham Br (459_6)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Mangatutu Stm (Waikeria) at Walker Rd Br (476_7)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Dec 2011–Sep 2017 60 0
Mangauika Stm at Te Awamutu Borough W/S Intake (477_10)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2011–Sep 2017 60 0
Mangawara Stm at Rutherford Rd Br (481_7)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd (488_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Mangawhero Stm (Kaihere) at Mangawara Rd (489_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res) T1 (504_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Marokopa River at Speedies Rd (Off Te Anga Rd) (513_3)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Escherichia coli (E. coli)
Matahuru Stm at Waiterimu Road Below Confluence (516_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 41 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Mokau River at Awakau Rd (556_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Mokau River at Mangaokewa Rd (Off SH30) (556_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Mokau River at Totoro Rd Recorder (556_9)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Mokauiti Stm at Three Way Point - Aria (557_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Ohaeroa Stm at SH22 Br (612_9)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 53 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Ohautira Stm at Waingaro Te Uku Rd (616_1)	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 53 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 58 0	Sep 2011–Sep 2017 59 0
Ohinemuri River at Karangahake (619_16)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Ohinemuri River at Queens Head (619_19)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Ohinemuri River at SH25 Br (619_20)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Ohote Stm at Whatawhata/Horotiu Rd (624_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Oparau River at Langdon Rd (Off Okupata Rd) (658_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Opuatia Stm at Ponganui Rd (665_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Escherichia coli (E. coli)
Oraka Stm at Lake Rd (669_6)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Otamakokore Stm at Hossack Rd (683_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Piako River at Kiwitahi (749_10)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Piako River at Paeroa-Tahuna Rd Br (749_15)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Piakonui Stm at Piakonui Rd (753_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Pokaiwhenua Stm at Puketurua (786_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Pueto Stm at Broadlands Rd Br (802_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Puniu River at Bartons Corner Rd Br (818_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Tahunaatara Stm at Ohakuri Rd (934_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Tairua River at Morrisons Br Hikuai (940_10)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Tapu River at Tapu-Coroglen Rd (954_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Tauranga-Taupo River at Te Kono Slackline (971_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Tawarau River at Off Speedies Rd (976_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Escherichia coli (E. coli)
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal (1491_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Tokaanu Stm at Off SH41 Turangi (1045_3)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Tongariro River at Turangi Cableway (1050_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Torepatutahi Stm at Vaile Rd Br (1057_6)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Waerenga Stm at Taniwha Rd (1098_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waiau River at E309 Rd Ford (1105_3)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Waihaha River at SH32 (1106_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 53 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waihou River at Okauia (1122_18)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 57 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waihou River at Te Aroha (1122_34)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waihou River at Whites Rd (1122_41)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waikato River at Horotiu Br (1131_69)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waikato River at Huntly-Tainui Br (1131_77)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Aug 2012–Sep 2017 60 0
Waikato River at Mercer Br (1131_91)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Escherichia coli (E. coli)
Waikato River at Narrows Br (1131_101)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waikato River at Ohaaki Br (1131_105)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waikato River at Ohakuri Tailrace Br (1131_107)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waikato River at Taupo Control Gates (1131_127)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 --	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waikato River at Tuakau Br (1131_133)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waikato River at Waipapa Tailrace (1131_143)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waikato River at Whakamaru Tailrace (1131_147)	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 54 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 56 0	Jun 2012–Sep 2017 60 0
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22 (1167_4)	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 51 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 53 0
Waiohotu Stm at Waiohotu Rd (Off SH5) (1173_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 --	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waiomou Stm at Matamata-Tauranga Rd (1174_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waiotapu Stm at Campbell Rd Br (1186_2)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2011–Sep 2017 60 0
Waiotapu Stm at Homestead Rd Br (1186_4)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 --	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 54 0
Waipa River at Mangaokewa Rd (1191_5)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Escherichia coli (E. coli)
Waipa River at Otewa (1191_7)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waipa River at Pirongia-Ngutunui Rd Br (1191_10)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	--	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2011–Sep 2017 60 0
Waipa River at SH23 Br Whatawhata (1191_11)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0
Waipa River at SH3 Otorohanga (1191_12)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 57 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waipapa Stm (Mokai) at Tirohanga Rd Br (1202_7)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waitahanui River at Blake Rd (1226_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br (1230_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waitawhiriwhiri Stm at Edgecumbe Street (1236_2)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Waitekauri River at U/S Ohinemuri Conflu (1239_32)	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 57 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 59 0	Sep 2011–Sep 2017 59 0
Waitetuna River at Te Uku-Waingaro Rd (1247_2)	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 54 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 58 0	Sep 2011–Sep 2017 59 0
Waitoa River at Landsdowne Rd Br (1249_15)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Waitoa River at Mellon Rd Recorder (1249_18)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Waitomo Stm at SH31 Otorohanga (1253_5)	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 56 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 59 0	Sep 2011–Sep 2017 60 0

Site	Ammonia	Nitrate	Suspended fine sediment	Dissolved inorganic nitrogen	Dissolved reactive phosphorus	Escherichia coli (E. coli)
Waitomo Stm at Tumutumu Rd (1253_7)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 50 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Waiwawa River at SH25 Coroglen (1257_3)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Whakapipi Stm at SH22 Br (1282_8)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 58 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Whakauru Stm at U/S SH1 Br (1287_7)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Whangamarino River at Island Block Rd (1293_7)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 59 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Whangamarino River at Jefferies Rd Br (1293_9)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Whangamata Stm (Kinloch) at Whangamata Rd (1300_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Whanganui Stm at Lakeside Lake Taupo T8 (1301_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Whangape Stm at Rangiriri-Glen Murray Rd (1302_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0
Wharekawa River at SH25 (1312_3)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 54 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2011–Sep 2017 60 0
Whareroa Stm (Taupo) at Lakeside Lake Taupo T9 (1318_4)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Dec 2011–Sep 2017 60 0
Whirinaki Stm at Corbett Rd (1323_1)	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	--	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 60 0	Sep 2012–Sep 2017 55 0