

2021/22 Recreational water quality monitoring



Contents

- [2021/22 Recreational water quality monitoring](#)
 - [Contents](#)
- [Disclaimer](#)
- [Overview](#)
 - [Monitoring network](#)
- [Methods](#)
 - [Sampling *E. coli*/Enterococci](#)
 - [Toxic algae sentinel site framework](#)
- [Freshwater *E. coli* results](#)
 - [National Objectives Framework \(NOF\) states](#)
 - [Summary of action guideline breaches for *E. coli*](#)
- [Freshwater toxic algae results](#)
 - [Te Whanganui-a-Tara Whaitua](#)
 - [Ruamāhanga Whaitua](#)
 - [Kāpiti Coast Whaitua](#)
- [Coastal Enterococci results](#)
 - [Microbiological Assessment Categories \(MACs\)](#)
 - [Summary of action guideline breaches for Enterococci](#)
- [Shellfish gathering water quality results](#)
- [Resources](#)
- [Appendix](#)
 - [Monitoring details](#)
 - [Data tables](#)

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For the latest available results go to the [GW environmental data hub](#).

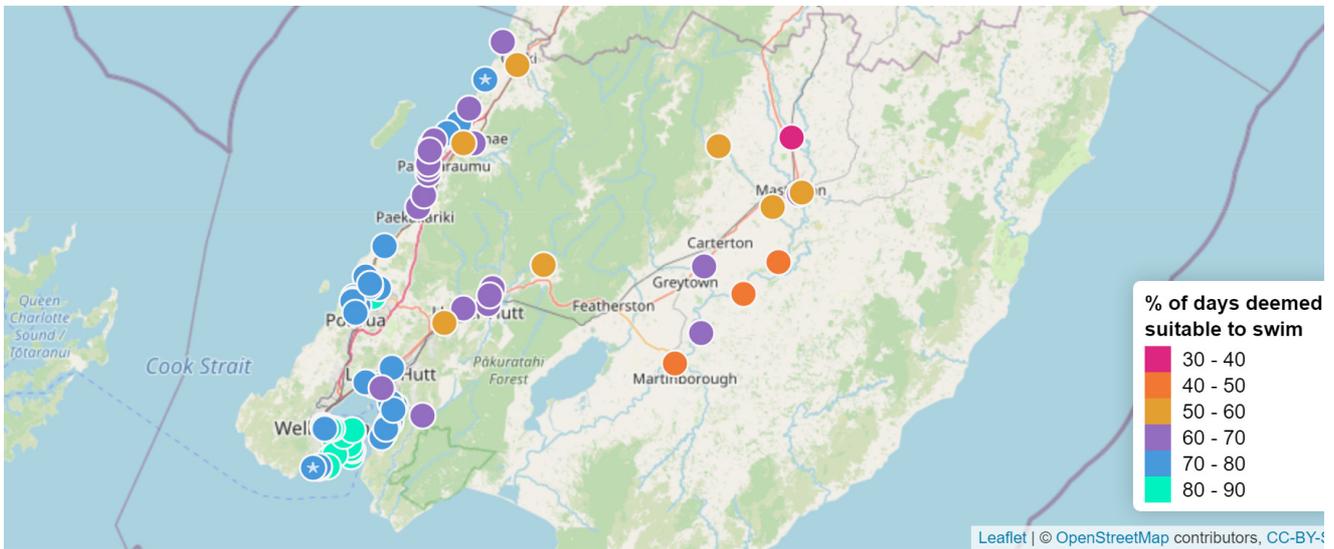


Figure 2: % of days deemed suitable to swim over the **summer** bathing period (last week of October to the end of March).

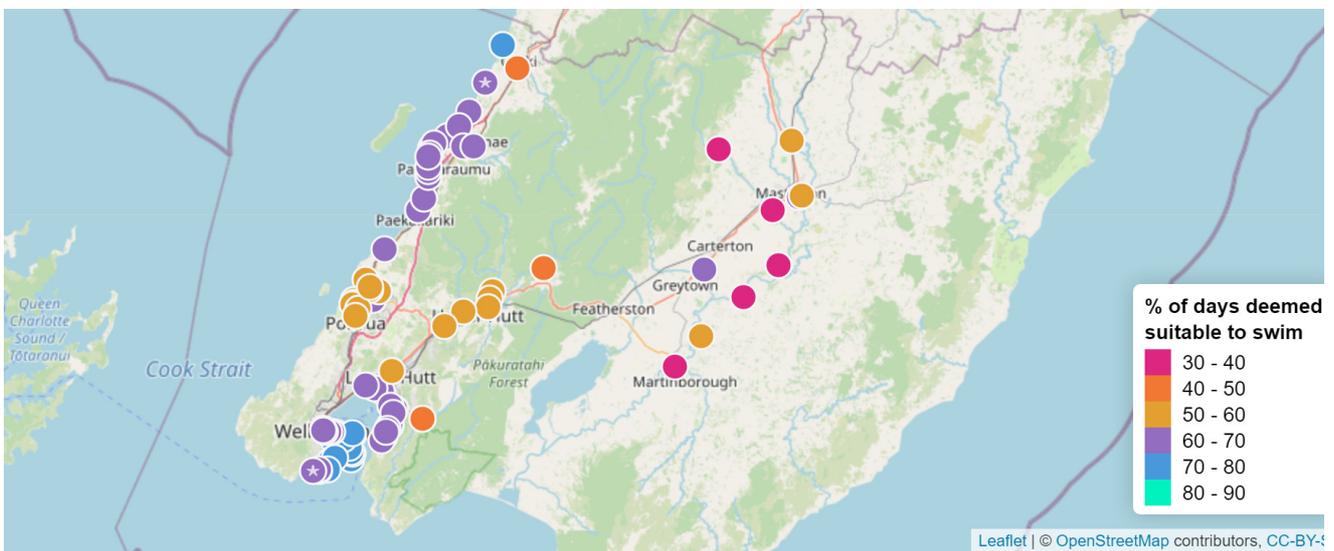


Figure 3: % of days deemed suitable to swim over the **winter** bathing period (April up to the last week of October).

Methods

Sampling *E. coli*/Enterococci

To maintain quality control, monitoring occurs at selected sites in order to validate the assumptions of the model and to ensure that it remains fit for purpose.

In 2021/22, 20 freshwater sites and 61 coastal sites were sampled either weekly or fortnightly during the summer bathing season (November to March inclusive). Six coastal sites were also monitored for their suitability for shellfish gathering over this time. Fourteen coastal sites were monitored fortnightly during the winter period (April to October), reflecting significant year-round use at these sites.

Water sampling is carried out in accordance with the [Ministry for the Environment \(MfE\)/Ministry of Health \(MoH\) \(2003\) microbiological water quality guidelines for marine and freshwater recreational areas](#). This involves the analysis of water samples for *E. coli* (fresh waters), enterococci (coastal waters) or faecal coliform (recreational shellfish waters) indicator bacteria.

Toxic algae sentinel site framework

A two-tier sentinel site monitoring framework (implemented December 2018) targets monitoring efforts at known 'sentinel' sites, allowing for flexibility to increase surveillance and responsiveness in responding to current health risks.

Tier-1 Sentinel Sites

Classed as sites where toxic algae has been known to historically and predictively bloom under optimal weather and river flow conditions.

Monitoring of Tier 1 sites occurs if there had been an accrual period of seven days. An accrual period is defined as the number of days between a freshwater flushing flow (i.e. 6x median flow). At this flushing flow, toxic algae mats are generally washed away and the potential health risk due to the algae is negligible.

Tier-2 Sentinel Sites

Known to bloom when coverages at Tier-1 Sites reaches a critical threshold level of (i.e. >15%, defined for the Wellington region only).

Monitoring of Tier 2 sites occurs if a toxic algae coverage greater than 15% is observed at a Tier-1 Sites. Tier-2 site monitoring is restricted to sites within the same Whaitua where a threshold exceedance was observed. This benchmark of 15% is regionally specific for Greater Wellington,

based on analysis of historical toxic algae coverage across sites in relation to the probability of heightened risk alerts.

Action guidelines for the Wellington Region

Greater Wellington Regional Council has adopted a more conservative action level guideline of 20%, driven by the rapid growth rates of toxic algae experienced in the region and the subsequent need to manage risks to the public. This approach is consistent with the procedures set out in [Brasell and Conwell 2018](#).

In addition to the routine transect assessment as set out in the [Interim Guidelines](#), a bankside assessment was introduced to assess non-wadeable sections of a river site, and where the assessment from a transect method alone was insufficient to assess percentage toxic algae cover.

Full details of methods and guideline comparisons are described in full in the 2017/18 annual technical report (see [Brasell and Conwell 2018](#)).

Freshwater *E. coli* results

Key freshwater *E. coli* monitoring results are presented in the following sections and supplementary tables can be found in the [Appendix](#).

National Objectives Framework (NOF) states

Microbiological water quality states are reported as National Objectives Framework (NOF) states in accordance with the [2020 National Policy Statement for Freshwater Management](#).

Freshwater NOF states are based on routine sampling over five recreational bathing periods, which run from the last week of October to the end of March, with a minimum of 50 samples required to assign a state. “A” can be seen as excellent bathing water quality, while “D” is poor quality with higher risk of *Campylobacter* infection, see these LAWA factsheets on [coastal and freshwater recreation monitoring](#) and [faecal indicator bacteria](#) for more information.

Arrows over the circles in the maps below indicate change in levels from the previous season – i.e. a single up arrow means that this season’s state is one level higher (worse) than last season’s state.

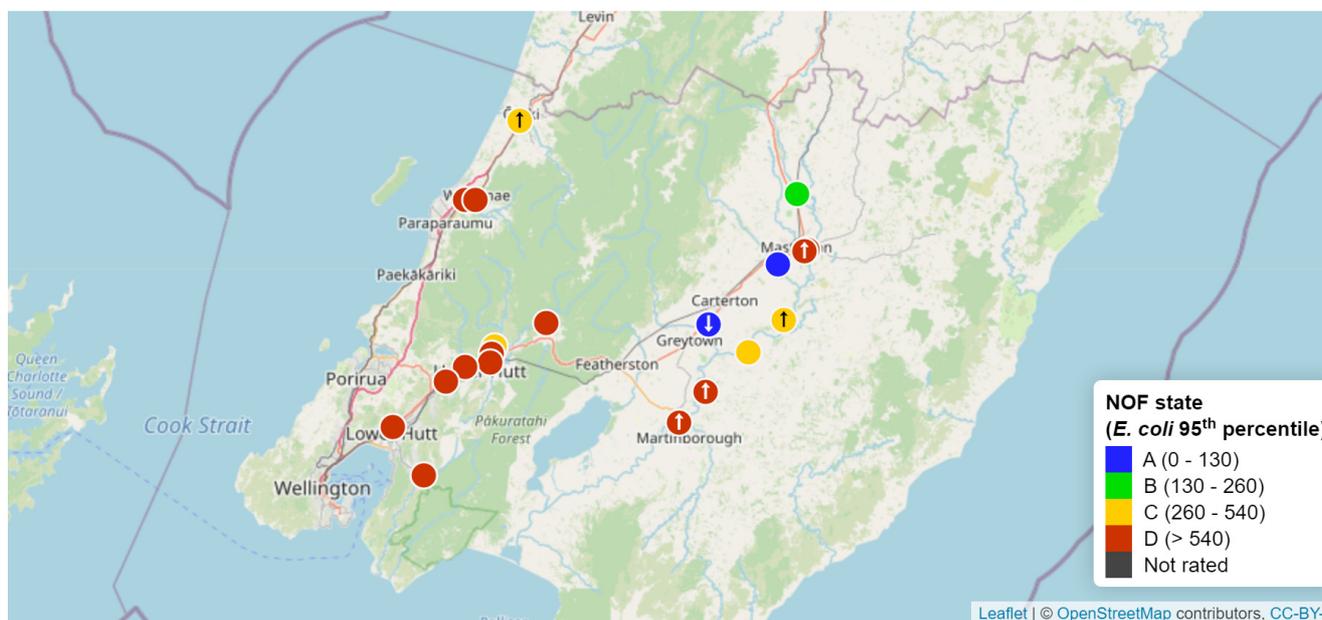


Figure 4: NOF states calculated for samples taken in **all** river flow conditions.

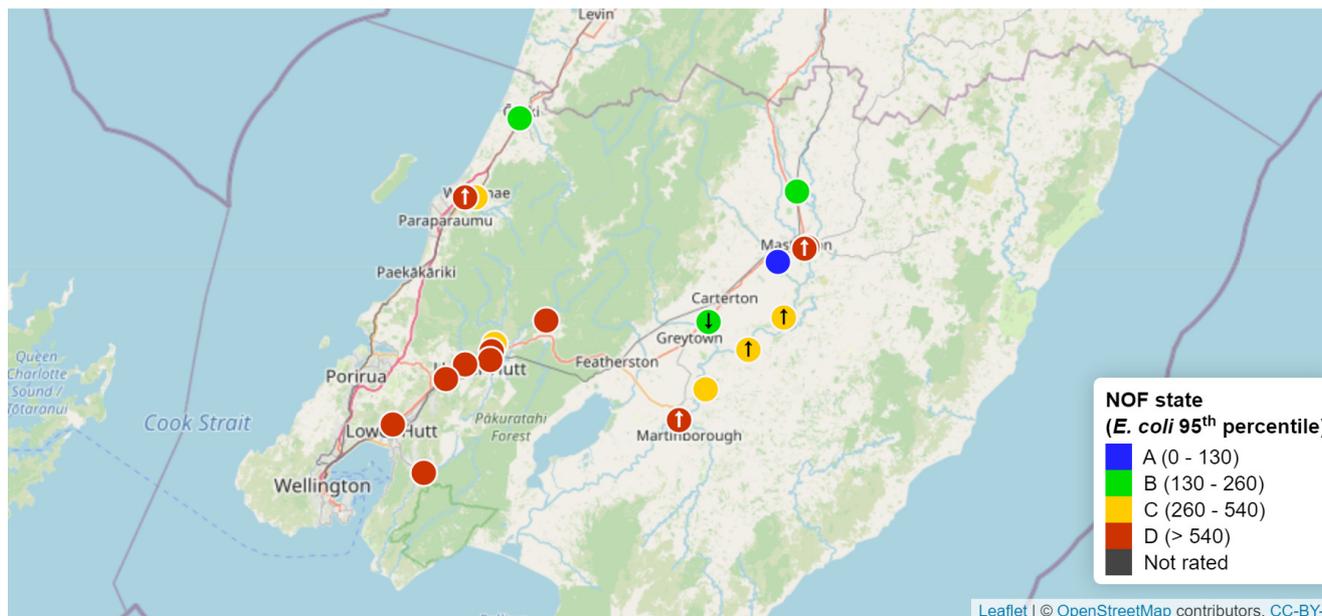


Figure 5: NOF states calculated for samples taken in **low flow** river flow conditions where river flow is less than three times the median of long-term flow. These states do not require the minimum 50 data points, see the appendix data tables for sample numbers when making comparisons.

Summary of action guideline breaches for *E. coli*

Action guideline breaches for *E. coli* (>550 cfu/100mL) from routine surveillance monitoring.

Table 1: The total number of sites that breached guidelines broken down by those sites total number of breaches in the monitoring season.

Total breaches per site	Te Whanganui-a-			Total no. sites	% of sites
	Kāpiti	Tara	Ruamāhanga		
Zero (no breaches)	0	0	2	2	10.0
One	3	3	3	9	45.0
Two	0	4	2	6	30.0
Three	0	1	2	3	15.0
Total monitored sites:	3	8	9	20	

Table 2: Preceding rainfall (mm) and the number of follow up samples required before compliance with the surveillance guideline was met for each action level breach. Alert level breaches (>260 cfu/100mL) are also included and suffixed an asterisk (*) when they required follow-up samples to be taken. Whaitua abbreviations: **RMH**: Ruamāhanga, **TWT**: Te Whanganui-a-Tara, **KC**: Kāpiti Coast.

Whaitua	Date	Site name	<i>E. coli</i> count (cfu/100mL)	Rainfall (mm) 00-24h	Rainfall (mm) 25-48h	Rainfall (mm) 49-72h	# follow up samples
TWT	2021-11-22	Hutt River upstream of Silverstream Bridge	570	0.0	0.0	0.0	0
TWT	2021-11-22	Hutt River at Birchville	830	0.0	0.0	0.0	0
TWT	2021-11-22	Hutt River at Maoribank Corner	560	0.0	0.0	0.0	0
TWT	2021-11-22	Hutt River at Melling Bridge	710	0.0	0.0	0.0	0
TWT	2021-11-22	Hutt River at Poets Park	790	0.0	0.0	0.0	0
TWT	2021-11-22	Pakuratahi River at Hutt Forks	830	0.0	0.0	0.0	0
TWT	2021-11-22	Wainuiomata River at Richard Prouse Park	760	0.0	0.0	0.0	0
RMH	2021-11-22	Ruamāhanga River at Waihenga Bridge	800	0.0	0.0	0.0	0
RMH	2021-11-22	Waipoua River at Colombo Road	700	0.0	0.0	0.0	0
KC	2021-11-30	Ōtaki River at State Highway One	280*	38.0	0.0	0.0	1
KC	2021-11-30	Waikanae River at Jim Cooke Park	980	21.4	0.0	0.0	1
KC	2021-11-30	Waikanae River at State Highway One	880	21.2	0.0	0.0	1
TWT	2021-12-06	Akatarawa River at Hutt Confluence	2,400	3.0	9.0	0.0	0
TWT	2021-12-06	Hutt River upstream of Silverstream Bridge	7,000	4.6	9.8	0.2	0
TWT	2021-12-06	Hutt River at Birchville	6,600	5.8	8.6	0.2	0
TWT	2021-12-06	Hutt River at Maoribank Corner	5,300	5.8	8.6	0.2	0
TWT	2021-12-06	Hutt River at Poets Park	6,800	5.2	9.2	0.2	0
TWT	2021-12-06	Pakuratahi River at Hutt Forks	4,800	2.8	6.8	2.0	0
RMH	2021-12-06	Ruamāhanga River at Double Bridges	1,200	2.2	1.4	0.8	0
RMH	2021-12-06	Ruamāhanga River at Morrisons Bush	1,300	3.0	0.5	3.0	0
RMH	2021-12-06	Ruamāhanga River at Te Ore Ore	1,000	2.2	1.4	0.6	0
RMH	2021-12-06	Ruamāhanga River at Waihenga Bridge	1,500	24.0	16.0	4.0	0
RMH	2021-12-06	Waipoua River at Colombo Road	3,700	1.2	1.0	1.8	0
RMH	2021-12-20	Waipoua River at Colombo Road	1,100	0.0	0.0	4.2	0

Whaitua	Date	Site name	<i>E. coli</i> count (cfu/100mL)	Rainfall (mm) 00-24h	Rainfall (mm) 25-48h	Rainfall (mm) 49-72h	# follow up samples
KC	2021-12-21	Ōtaki River at State Highway One	730	2.0	0.0	0.0	1
TWT	2022-02-08	Pakuratahi River at Hutt Forks	700	36.0	90.6	40.0	0
RMH	2022-02-21	Ruamāhanga River at Kokotau	2,300	62.5	0.5	0.0	0
RMH	2022-02-21	Ruamāhanga River at Morrisons Bush	970	59.5	0.0	0.0	0
RMH	2022-02-21	Ruamāhanga River at Te Ore Ore	2,300	34.6	0.0	0.0	0
RMH	2022-02-21	Ruamāhanga River at The Cliffs	2,100	63.0	0.0	0.0	0
RMH	2022-02-21	Ruamāhanga River at Waihenga Bridge	4,500	62.0	1.5	0.0	0
KC	2022-02-22	Waikanae River at State Highway One	300*	0.0	37.6	0.0	1

Freshwater toxic algae results

Summer toxic algae monitoring results are assessed in accordance with [New Zealand guidelines for cyanobacteria in recreational freshwaters: Interim guidelines \(2009\)](#). The green (●) and blue (●) dots on the charts below show observed toxic algae cover by transect and bankside assessment methods with red circles (○) around them if detached toxic algae mats were present. River flow is shown by the continuous black line (—) and the orange (—) and red (—) dotted lines mark alert (>20%) and action (>50%) levels of toxic algae cover respectively.

Note that the y-axes for flow (right side of plots) are on different scales across sites, this is to highlight the possible effect of relative flow events on toxic algae cover rather than comparing absolute rates.

Te Whanganui-a-Tara Whaitua

Tier 1 sentinel sites

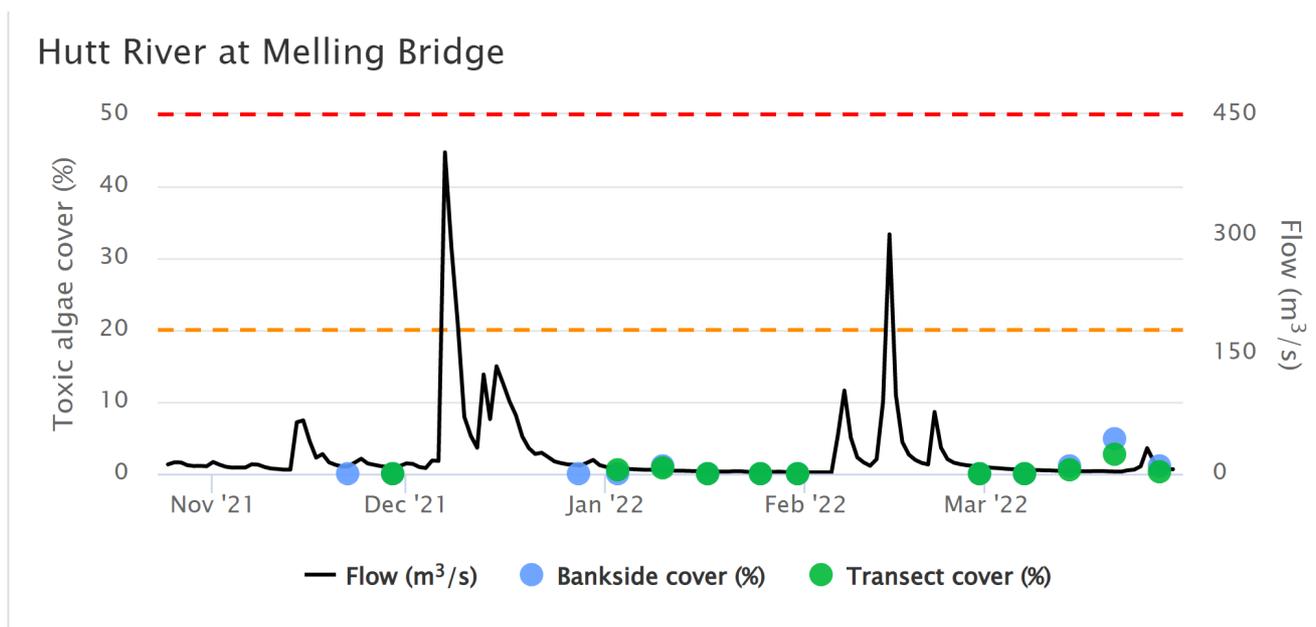


Figure 6: Toxic algae cover and flow at **Hutt River at Melling Bridge**.

Hutt River upstream of Silverstream Bridge

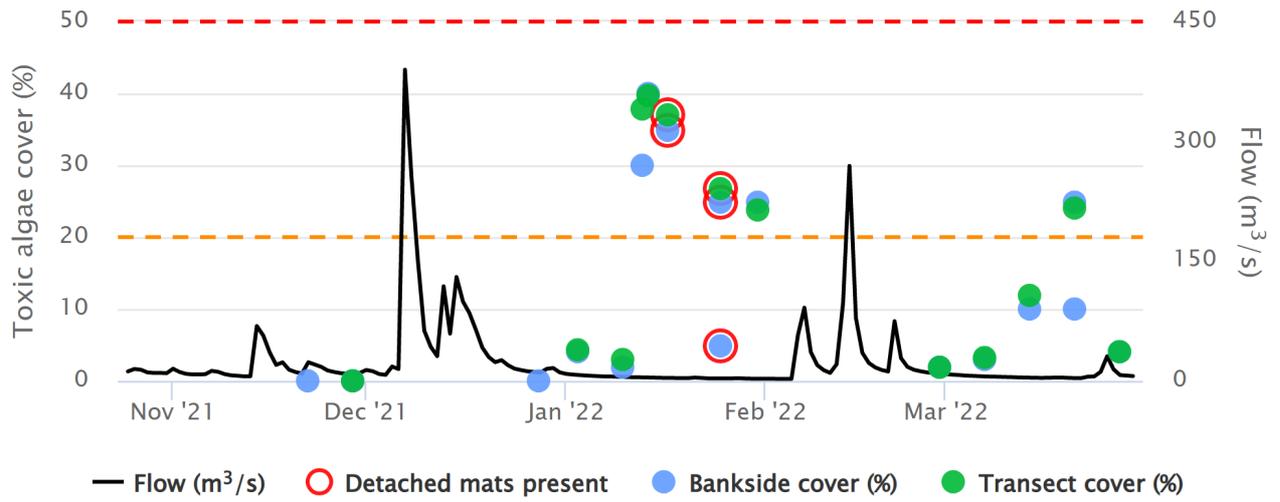


Figure 7: Toxic algae cover and flow at **Hutt River upstream of Silverstream Bridge**.

Tier 2 sentinel sites

Hutt River at Birchville

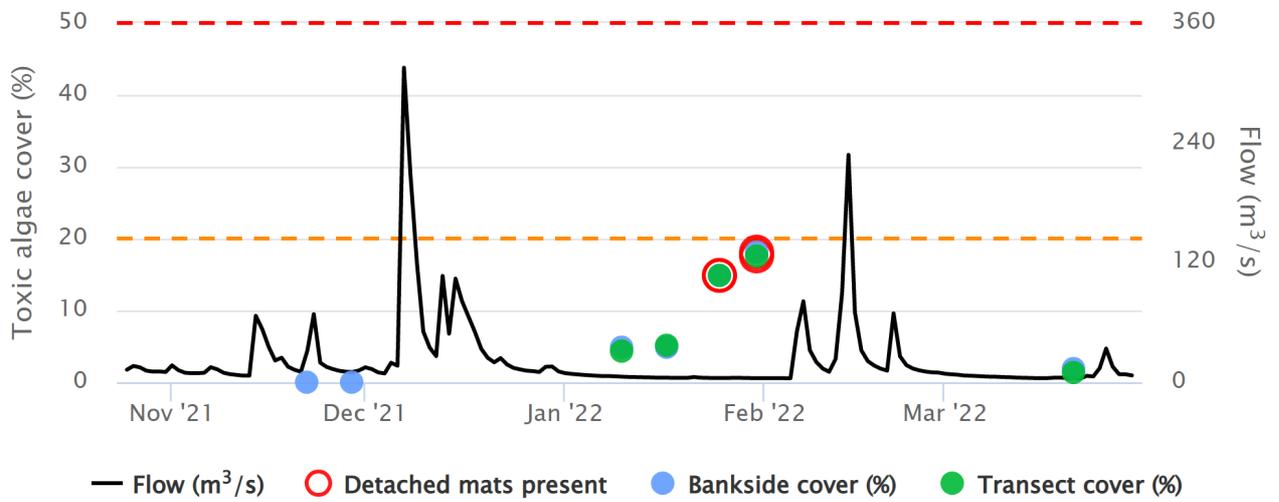


Figure 8: Toxic algae cover and flow at **Hutt River at Birchville**.

Hutt River at Poets Park

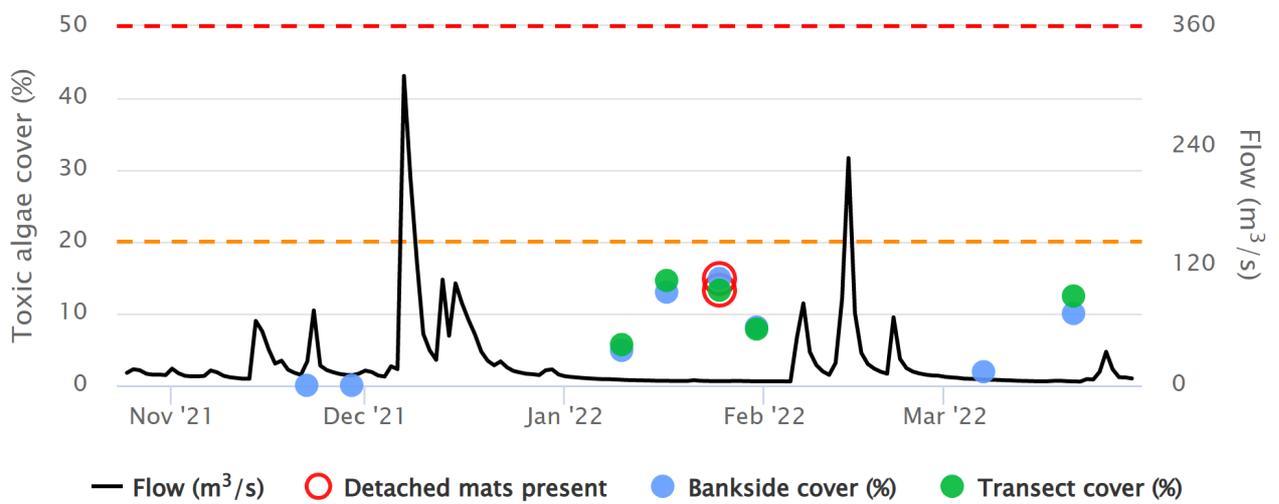


Figure 9: Toxic algae cover and flow at **Hutt River at Poets Park**.

Ruamāhanga Whaitua

Tier 1 sentinel sites

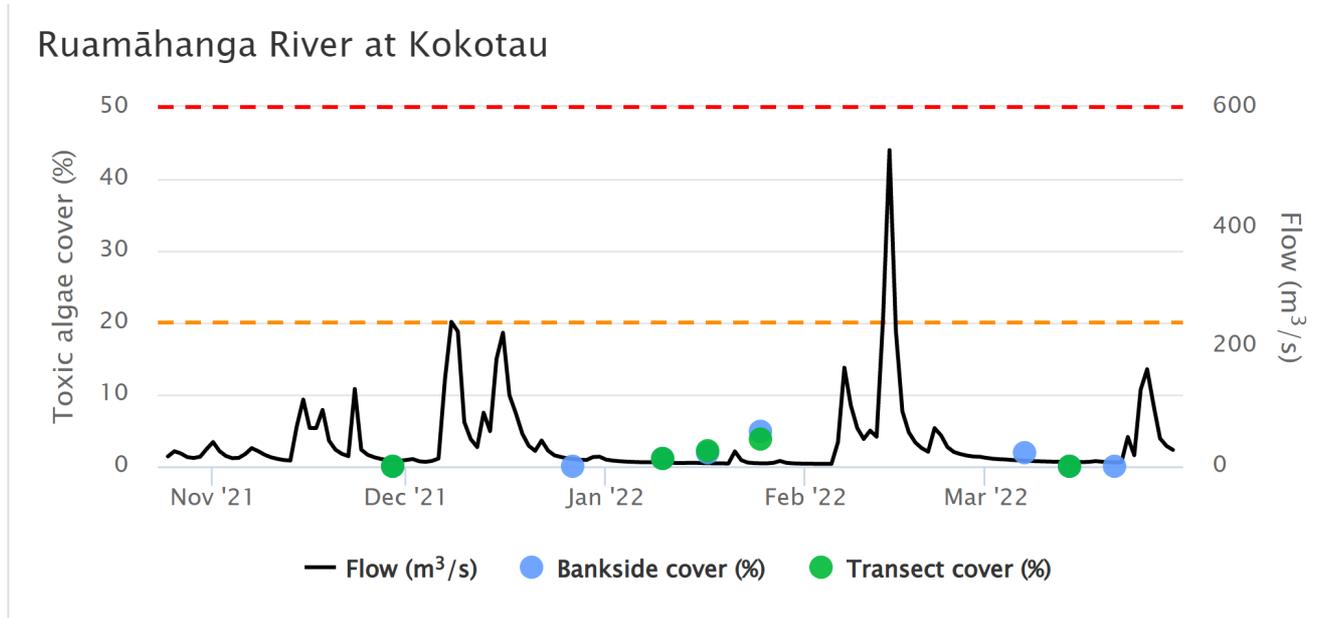


Figure 10: Toxic algae cover and flow at **Ruamāhanga River at Kokotau**.

Waipoua River at Colombo Road

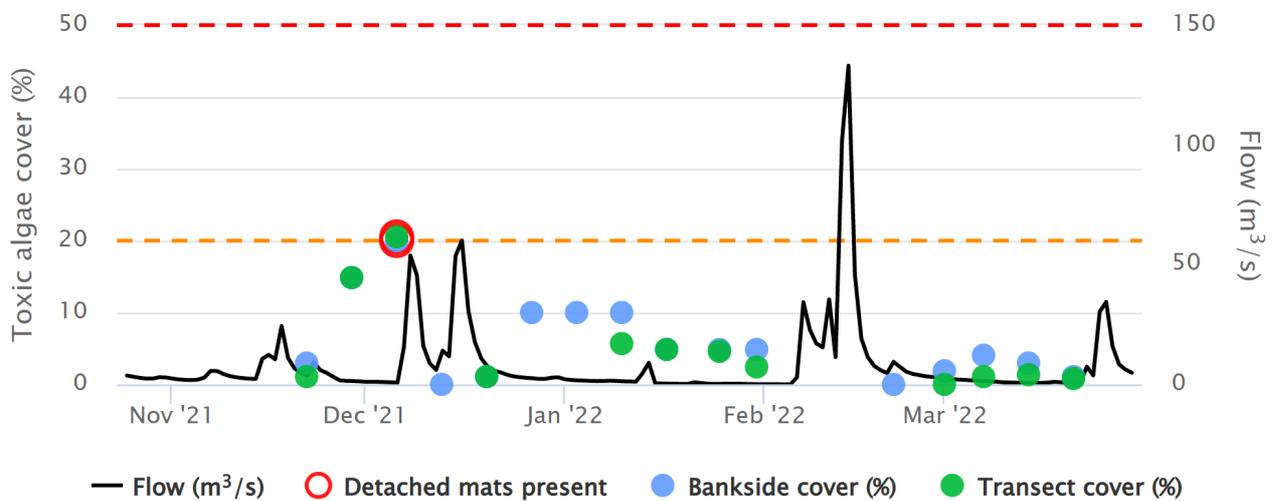


Figure 11: Toxic algae cover and flow at **Waipoua River at Colombo Road**.

Tier 2 sentinel sites

Ruamāhanga River at Te Ore Ore

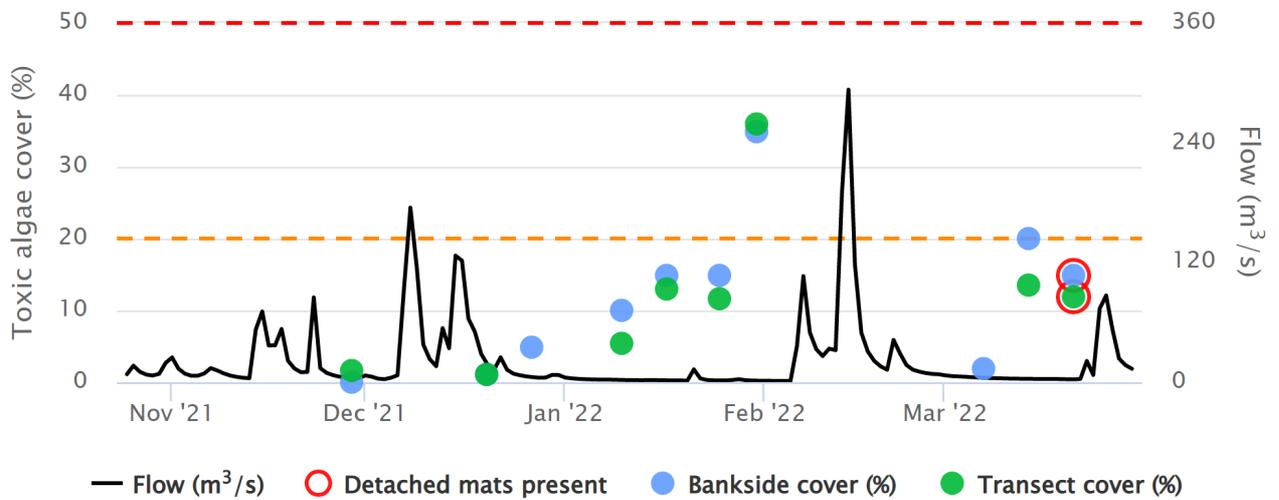


Figure 12: Toxic algae cover and flow at **Ruamāhanga River at Te Ore Ore**.

Ruamāhanga River at The Cliffs

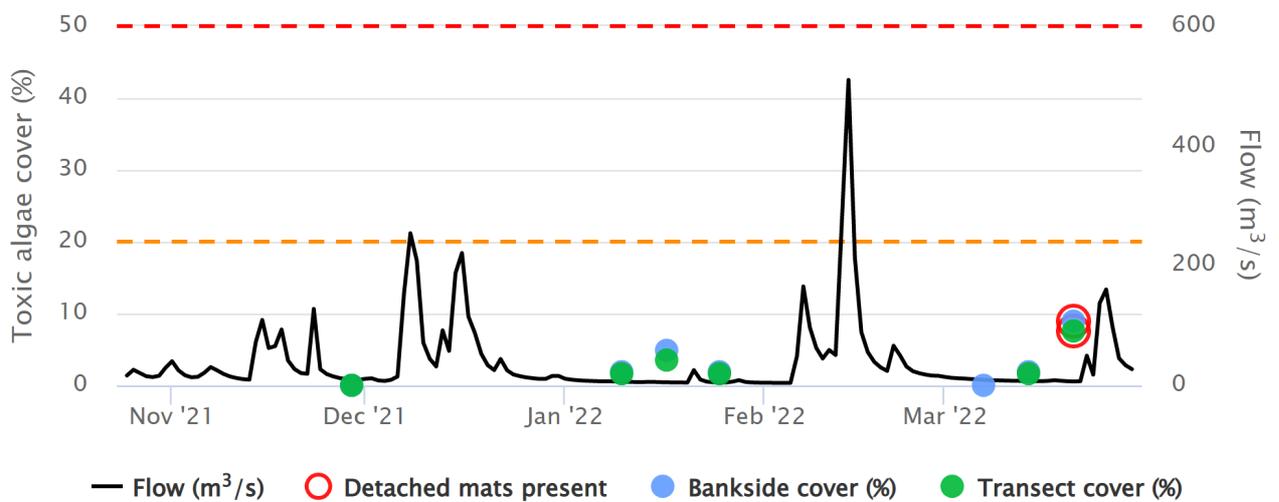


Figure 13: Toxic algae cover and flow at **Ruamāhanga River at The Cliffs**.

Waingawa River at South Road

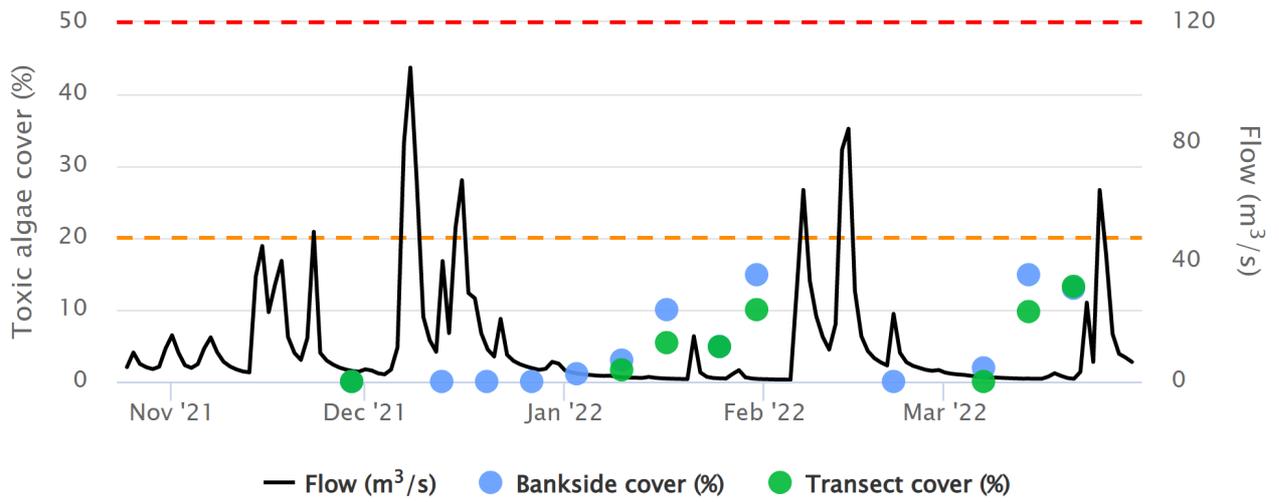


Figure 14: Toxic algae cover and flow at **Waingawa River at South Road**.

Ruamāhanga River at Double Bridges

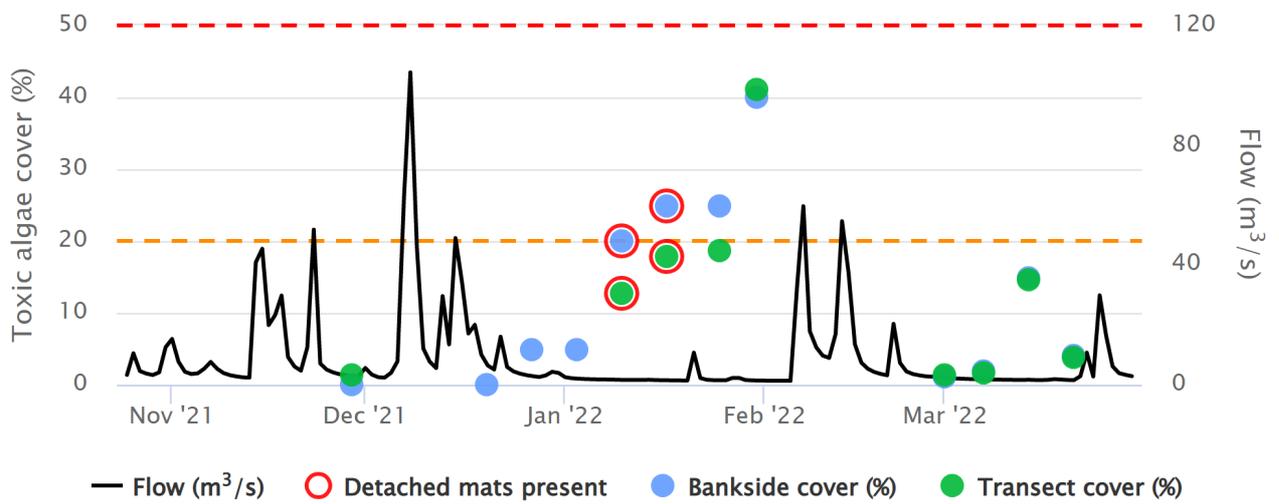


Figure 15: Toxic algae cover and flow at **Ruamāhanga River at Double Bridges**.

Kāpiti Coast Whaitua

Tier 1 sentinel sites

Ōtaki River at State Highway One

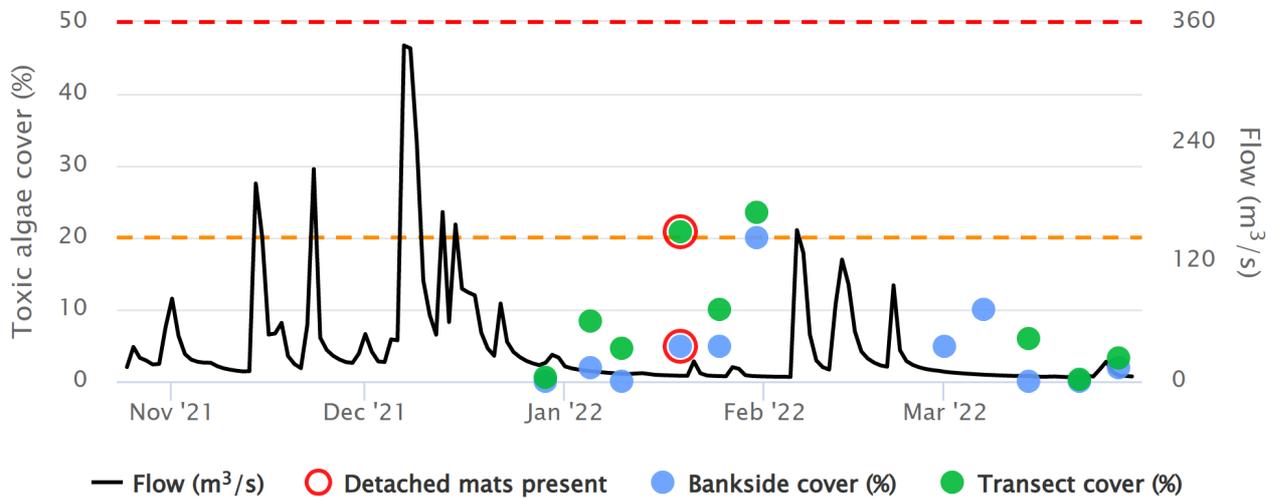


Figure 16: Toxic algae cover and flow at **Ōtaki River at State Highway One**.

Waikanae River at State Highway One

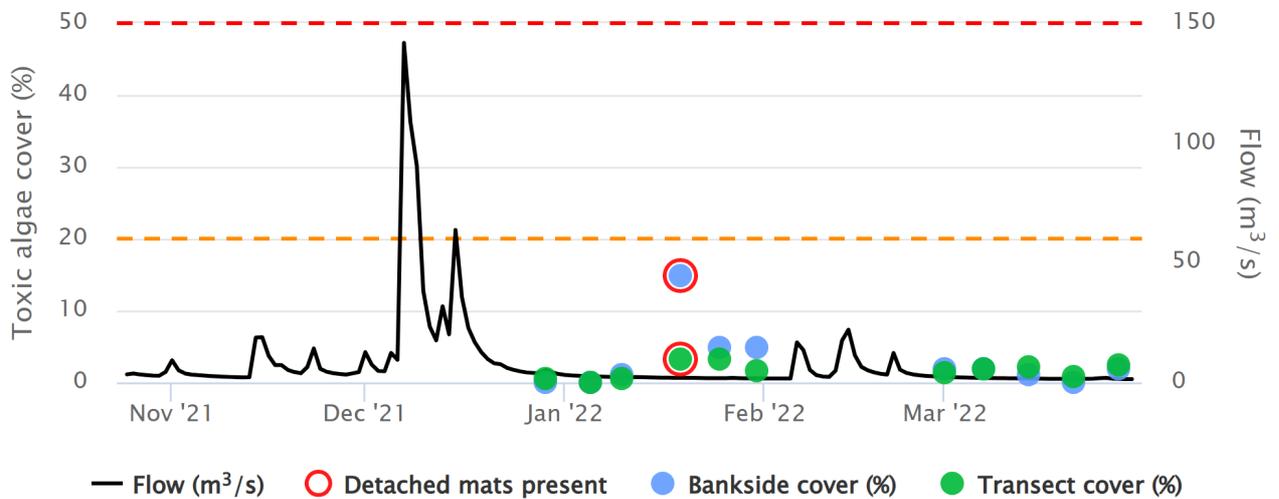


Figure 17: Toxic algae cover and flow at **Waikanae River at State Highway One**.

Waikanae River at Jim Cooke Park

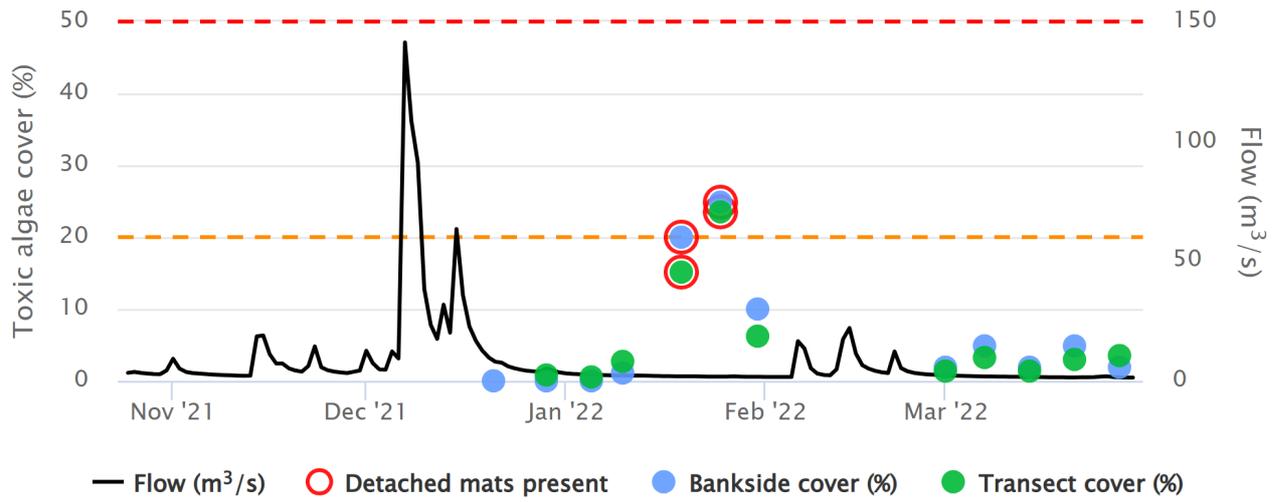


Figure 18: Toxic algae cover and flow at **Waikanae River at Jim Cooke Park**.

Coastal Enterococci results

Key coastal enterococci monitoring results are presented in the following sections and supplementary tables can be found in the [Appendix](#).

Microbiological Assessment Categories (MACs)

Microbiological water quality grades are reported as long term Microbiological Assessment Category (MAC) grades in accordance with [The Ministry for the Environment & Ministry of Health 2003 Microbiological water quality guidelines for marine and freshwater recreational areas](#).

Coastal MAC grades are based on routine sampling over five recreational bathing periods, which run from the last week of October to the end of March, and also for some sites during the winter period where there is significant year-round use. A minimum of 50 samples are required to assign a grade. “A” can be seen as excellent bathing water quality, while “D” is poor quality and potentially harmful, see these LAWA factsheets on [coastal and freshwater recreation monitoring](#) and [faecal indicator bacteria](#) for more information.

Arrows over the circles in the maps below indicate change in levels from the previous season – i.e. a single up arrow means that this season’s grade is one level higher (worse) than last season’s grade.

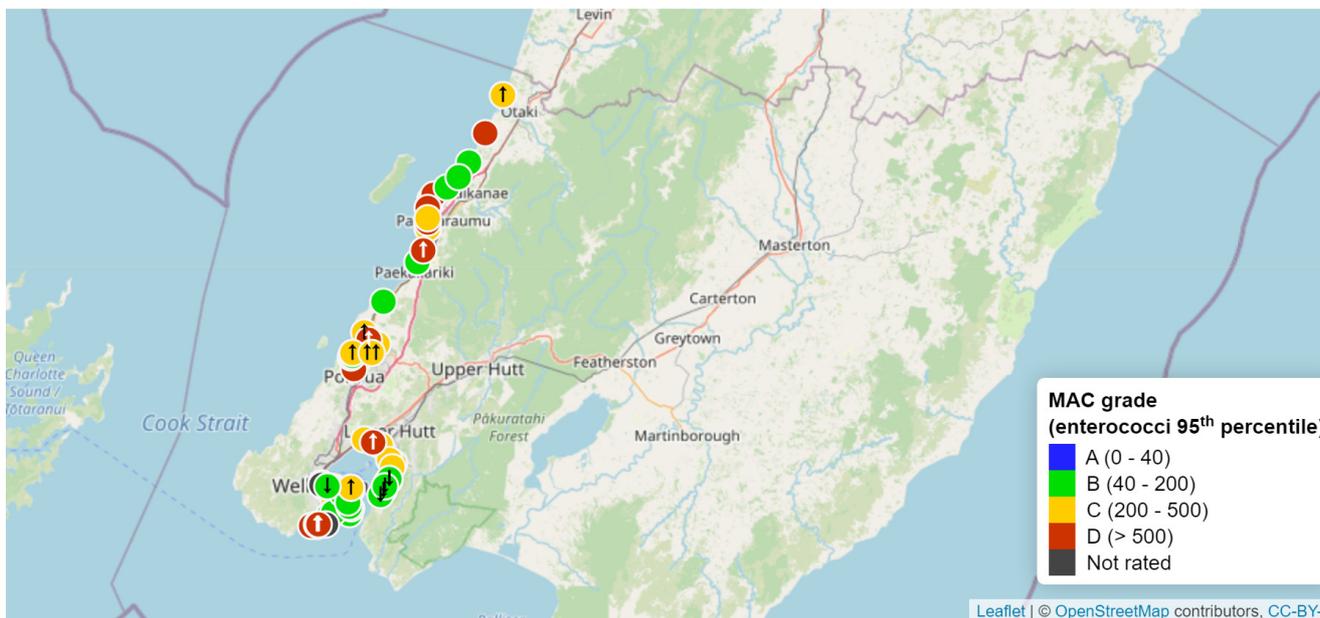


Figure 19: MAC grades calculated for samples taken over the **summer** bathing season (last week of October to the end of March).

Table 4: The total number of sites that breached guidelines during the **winter** bathing season (April up to the last week of October) broken down by those sites total number of breaches in the winter season.

Total breaches per site	Kāpiti	Te Awarua-o-Porirua	Te Whanganui-a-Tara	Total no. sites	% of sites
Zero (no breaches)	2	4	4	10	55.6
One	1	1	3	5	27.8
Three	0	2	0	2	11.1
Four	0	1	0	1	5.6
Total monitored sites:	3	8	7	18	

Table 5: Preceding rainfall (mm) and the number of follow up samples required before compliance with the surveillance guideline was met for each breach. Alert level breaches (>140 cfu/100mL) are also included and suffixed an asterisk (*) when they required follow-up samples to be taken.

Whaitua abbreviations: **TAoP**: Te Awarua-o-Porirua, **TWT**: Te Whanganui-a-Tara, **KC**: Kāpiti Coast.

Whaitua	Date	Site name	Enterococci count (cfu/100mL)	Rainfall (mm) 00-24h	Rainfall (mm) 25-48h	Rainfall (mm) 49-72h	# follow up samples
TWT	2021-07-14	Lyall Bay at Tirangi Road	2,000	2.4	0.4	0.6	0
KC	2021-07-27	Paekākāriki Beach at Surf Club	420	0.0	0.0	0.0	1
TAoP	2021-07-27	Porirua Harbour at Rowing Club	340	2.4	0.0	0.0	0
TAoP	2021-07-27	Porirua Harbour at Wi Neera Drive Boat Ramp	650	2.4	0.0	0.0	0
TWT	2021-08-09	Petone Beach at Kiosk	540	25.8	0.0	2.6	0
TAoP	2021-08-10	Porirua Harbour at Rowing Club	430	36.0	9.0	0.6	0
TAoP	2021-08-10	Porirua Harbour at Wi Neera Drive Boat Ramp	300	34.4	11.0	0.6	0
TAoP	2021-08-10	South Beach at Plimmerton	380	26.4	5.6	0.0	0
TAoP	2021-09-07	Titahi Bay at Bay Drive	370	0.0	0.0	0.0	0
TAoP	2021-11-16	Plimmerton Beach at Bath Street	560	0.4	8.2	10.4	0
TAoP	2021-11-16	Porirua Harbour at Wi Neera Drive Boat Ramp	850	0.2	13.2	11.2	0
TAoP	2021-11-16	South Beach at Plimmerton	800	0.4	8.4	10.2	0
TWT	2021-11-17	Wellington Harbour at Taranaki St Dive Platform	560	0.2	0.0	3.4	0

Whaitua	Date	Site name	Enterococci count (cfu/100mL)	Rainfall (mm) 00-24h	Rainfall (mm) 25-48h	Rainfall (mm) 49-72h	# follow up samples
KC	2021-11-22	Paekākāriki Beach at Whareroa Road	238*	0.0	0.0	0.0	1
KC	2021-11-29	Paraparaumu Beach at Maclean Park	560	0.0	0.0	0.0	2
KC	2021-11-29	Paraparaumu Beach at Nathan Avenue	380	0.0	0.0	0.0	2
KC	2021-11-29	Paraparaumu Beach at Ngapotiki Street	300	0.0	0.0	0.0	2
KC	2021-11-29	Paraparaumu Beach at Toru Road	660	0.0	0.0	0.0	1
KC	2021-11-29	Raumati Beach at Tainui Street	200*	0.0	0.0	0.0	1
KC	2021-11-30	Te Horo Beach at Sea Road	2,330	12.6	0.0	0.2	1
TAoP	2021-11-30	Plimmerton Beach at Bath Street	640	7.2	0.4	0.0	0
TAoP	2021-11-30	Porirua Harbour at Wi Neera Drive Boat Ramp	6,800	8.4	0.0	0.0	0
TAoP	2021-11-30	South Beach at Plimmerton	640	7.2	0.4	0.0	0
TAoP	2021-12-07	Karehana Bay at Cluny Road	4,300	93.2	0.8	13.8	0
TAoP	2021-12-07	Pāuatahanui Inlet at Paremata Bridge	390	87.4	0.0	9.2	0
TAoP	2021-12-07	Pāuatahanui Inlet at Water Ski Club	3,600	95.4	0.6	13.8	0
TAoP	2021-12-07	Plimmerton Beach at Bath Street	2,200	92.0	0.8	13.8	0
TAoP	2021-12-07	Porirua Harbour at Rowing Club	2,700	80.6	0.6	8.6	0
TAoP	2021-12-07	Porirua Harbour at Wi Neera Drive Boat Ramp	4,300	81.4	0.6	8.6	0
TAoP	2021-12-07	South Beach at Plimmerton	6,200	91.2	1.0	13.6	0
TAoP	2021-12-07	Titahi Bay at South Beach Access Road	550	88.8	1.8	13.2	0
TAoP	2021-12-07	Titahi Bay at Toms Road	390	89.8	1.8	13.2	0
KC	2021-12-08	Paekākāriki Beach at Whareroa Road	1,530	0.0	0.0	0.0	0
KC	2021-12-08	Raumati Beach at Marine Gardens	1,270	0.0	0.0	0.0	0
KC	2021-12-08	Waikanae Beach at Ara Kuaka Carpark	310	67.8	84.8	1.2	0
TWT	2021-12-08	Mahanga Bay	430	42.4	65.2	0.0	0
TWT	2021-12-08	Oriental Bay at Band Rotunda	450	55.0	84.8	0.0	0
TWT	2021-12-08	Oriental Bay at Freyberg Beach	480	56.0	83.8	0.0	0
TWT	2021-12-08	Oriental Bay at Wishing Well	290	55.4	84.4	0.0	0
TWT	2021-12-08	Seatoun Beach at Wharf	430	41.6	66.0	0.0	0
TWT	2021-12-08	Shark Bay	380	47.6	75.4	0.0	0
TWT	2021-12-08	Wellington Harbour at Taranaki St Dive Platform	780	79.4	59.8	0.0	0

Whaitua	Date	Site name	Enterococci count (cfu/100mL)	Rainfall (mm) 00-24h	Rainfall (mm) 25-48h	Rainfall (mm) 49-72h	# follow up samples
TWT	2021-12-08	Whairepo Lagoon	340	80.8	58.4	0.0	0
TWT	2021-12-08	Worsler Bay	360	41.8	65.8	0.0	0
KC	2021-12-09	Te Horo Beach at Sea Road	440	33.2	53.8	46.0	0
TAoP	2021-12-14	Karehana Bay at Cluny Road	4,000	4.0	20.2	0.0	0
TAoP	2021-12-14	Pāuatahanui Inlet at Paremata Bridge	480	0.6	19.4	0.0	0
TAoP	2021-12-14	Pāuatahanui Inlet at Water Ski Club	4,200	4.0	20.2	0.0	0
TAoP	2021-12-14	Plimmerton Beach at Bath Street	2,800	4.0	20.2	0.0	0
TAoP	2021-12-14	South Beach at Plimmerton	350	4.0	20.2	0.0	0
TAoP	2021-12-14	Titahi Bay at Bay Drive	320	6.6	17.6	0.2	0
TAoP	2021-12-14	Titahi Bay at Toms Road	2,500	7.2	17.0	0.2	0
TWT	2021-12-15	Island Bay at Derwent Street	670	11.6	1.2	32.2	0
TWT	2021-12-15	Island Bay at Reef St Recreation Ground	980	4.2	3.8	29.6	0
TWT	2021-12-15	Island Bay at Surf Club	840	4.2	3.6	29.8	0
TWT	2021-12-15	Ōwhiro Bay	960	4.4	4.2	29.0	0
TWT	2021-12-15	Seatoun Beach at Inglis Street	320	4.4	3.4	17.4	0
TWT	2021-12-15	Wellington Harbour at Taranaki St Dive Platform	790	11.8	0.6	30.2	0
KC	2021-12-20	Paekākāriki Beach at Whareroa Road	274*	0.0	0.0	0.0	1
KC	2021-12-20	Paraparaumu Beach at Maclean Park	170*	0.0	0.0	1.2	1
TAoP	2021-12-21	Pāuatahanui Inlet at Paremata Bridge	440	0.0	0.0	0.0	1
TWT	2021-12-22	Wellington Harbour at Taranaki St Dive Platform	360	0.0	0.0	0.0	1
TWT	2021-12-28	Sorrento Bay	770	0.0	0.0	0.0	0
TWT	2021-12-29	Island Bay at Reef St Recreation Ground	690	1.4	0.0	0.0	0
TWT	2021-12-29	Island Bay at Surf Club	640	1.4	0.0	0.0	0
TWT	2021-12-29	Lyall Bay at Tirangi Road	350	0.0	0.0	0.0	0
TWT	2021-12-29	Ōwhiro Bay	750	1.4	0.0	0.0	0
TWT	2021-12-29	Wellington City Waterfront at Shed 6	320	0.0	0.0	0.0	0
KC	2021-12-30	Paekākāriki Beach at Whareroa Road	220*	0.0	0.0	0.0	1
KC	2021-12-30	Paraparaumu Beach at Toru Road	310	15.4	12.4	0.0	1
KC	2021-12-30	Raumati Beach at Marine Gardens	640	0.0	0.0	0.0	1
TWT	2022-01-07	Island Bay at Derwent Street	450	0.2	0.0	0.0	0
TWT	2022-01-07	Island Bay at Reef St Recreation Ground	570	0.2	0.0	0.0	0
TWT	2022-01-07	Island Bay at Surf Club	450	0.2	0.0	0.0	0

Whaitua	Date	Site name	Enterococci count (cfu/100mL)	Rainfall (mm) 00-24h	Rainfall (mm) 25-48h	Rainfall (mm) 49-72h	# follow up samples
TWT	2022-01-07	Lyall Bay at Onepu Road	360	0.0	0.0	0.0	0
TWT	2022-01-07	Lyall Bay at Tirangi Road	520	0.0	0.0	0.0	0
TWT	2022-01-07	Ōwhiro Bay	480	0.2	0.0	0.0	0
KC	2022-02-01	Paekākāriki Beach at Whareroa Road	330	0.0	0.0	0.0	1
KC	2022-02-01	Paraparaumu Beach at Maclean Park	560	0.0	0.0	0.0	1
KC	2022-02-01	Paraparaumu Beach at Toru Road	200*	0.0	0.0	0.0	1
KC	2022-02-01	Raumati Beach at Tainui Street	610	0.0	0.0	0.0	1
TWT	2022-02-14	Days Bay at Moana Road	450	105.6	19.8	0.0	0
TWT	2022-02-14	Days Bay at Wellesley College	690	105.0	20.6	0.0	0
TWT	2022-02-14	Days Bay at Wharf	800	105.2	20.4	0.0	0
TWT	2022-02-14	Petone Beach at Kiosk	2,000	100.8	24.8	0.0	0
TWT	2022-02-14	Petone Beach at Sydney Street	1,200	98.4	27.2	0.0	0
TWT	2022-02-14	Petone Beach at Water Ski Club	1,300	97.8	27.8	0.0	0
TWT	2022-02-14	Rona Bay at N end of Cliff Bishop Park	700	106.6	18.8	0.0	0
TWT	2022-02-14	York Bay	800	104.4	21.2	0.0	0
TAoP	2022-02-15	Porirua Harbour at Rowing Club	320	11.2	89.0	8.4	0
TAoP	2022-02-15	Porirua Harbour at Wi Neera Drive Boat Ramp	820	12.8	87.4	8.4	0
TAoP	2022-02-15	South Beach at Plimmerton	780	14.2	110.6	16.2	0
KC	2022-02-16	Paraparaumu Beach at Maclean Park	370	0.0	3.4	29.2	1
KC	2022-02-16	Raumati Beach at Aotea Road	161*	0.0	0.0	0.0	1
TWT	2022-02-28	Days Bay at Moana Road	600	1.0	0.0	0.0	0
TAoP	2022-03-01	Pāuatahanui Inlet at Paremata Bridge	310	0.0	0.4	0.0	0
TAoP	2022-03-01	Porirua Harbour at Wi Neera Drive Boat Ramp	500	0.0	0.4	0.0	0
TAoP	2022-03-01	Titahi Bay at South Beach Access Road	580	0.0	0.0	0.0	0
TWT	2022-03-02	Oriental Bay at Band Rotunda	670	0.0	0.0	0.0	0
TWT	2022-03-02	Ōwhiro Bay	1,100	0.0	0.0	0.0	0
TWT	2022-03-16	Oriental Bay at Band Rotunda	360	0.2	0.0	0.0	0
TWT	2022-03-16	Ōwhiro Bay	820	0.0	0.0	0.0	0
TWT	2022-03-16	Wellington Harbour at Taranaki St Dive Platform	810	0.2	0.0	0.0	0

Whaitua	Date	Site name	Enterococci count (cfu/100mL)	Rainfall (mm) 00-24h	Rainfall (mm) 25-48h	Rainfall (mm) 49-72h	# follow up samples
TWT	2022-03-28	Rona Bay at N end of Cliff Bishop Park	1,400	0.0	0.2	20.0	0
KC	2022-03-29	Raumati Beach at Aotea Road	520	0.0	0.0	0.0	0
TAoP	2022-03-29	Pāuatahanui Inlet at Water Ski Club	420	0.0	0.0	0.4	0
TAoP	2022-03-29	Porirua Harbour at Rowing Club	390	0.0	0.0	0.6	0
TAoP	2022-03-29	Titahi Bay at Bay Drive	560	0.0	0.0	0.6	0
TWT	2022-03-30	Balaena Bay	330	0.0	0.0	0.2	0
TWT	2022-03-30	Oriental Bay at Band Rotunda	500	0.0	0.0	0.0	0
TWT	2022-03-30	Ōwhiro Bay	1,200	0.0	0.2	0.2	0
TWT	2022-03-30	Wellington City Waterfront at Shed 6	340	0.0	0.0	0.0	0
TWT	2022-03-30	Wellington Harbour at Taranaki St Dive Platform	2,200	0.0	0.0	0.0	0
TWT	2022-03-30	Whairepo Lagoon	420	0.0	0.0	0.0	0
TAoP	2022-05-10	Porirua Harbour at Rowing Club	7,200	4.2	0.0	0.0	0
TAoP	2022-05-10	Porirua Harbour at Wi Neera Drive Boat Ramp	4,400	2.8	0.0	0.0	0
TAoP	2022-05-10	South Beach at Plimmerton	800	1.2	0.0	0.0	0
TWT	2022-05-11	Ōwhiro Bay	390	10.6	8.4	0.2	0
TAoP	2022-06-07	Porirua Harbour at Wi Neera Drive Boat Ramp	2,700	0.0	0.0	3.2	0
TAoP	2022-06-07	South Beach at Plimmerton	890	0.2	0.2	0.2	0

Shellfish gathering water quality results

Summary of faecal coliform counts from routine summer (last week of October to the end of March) monitoring are benchmarked against the recreational shellfish-gathering water quality criteria. Both criteria must be exceeded (values in **red**) to fail guidelines.

- Median faecal coliform content of samples taken over a shellfish-gathering season shall not exceed a Most Probable Number (MPN) of 14 cfu/100 mL, and
- Not more than 10% of samples should exceed an MPN of 43 cfu/100 mL (using a five-tube decimal dilution test)

See [water quality criteria \(MfE/MoH 2003\)](#) for more information.

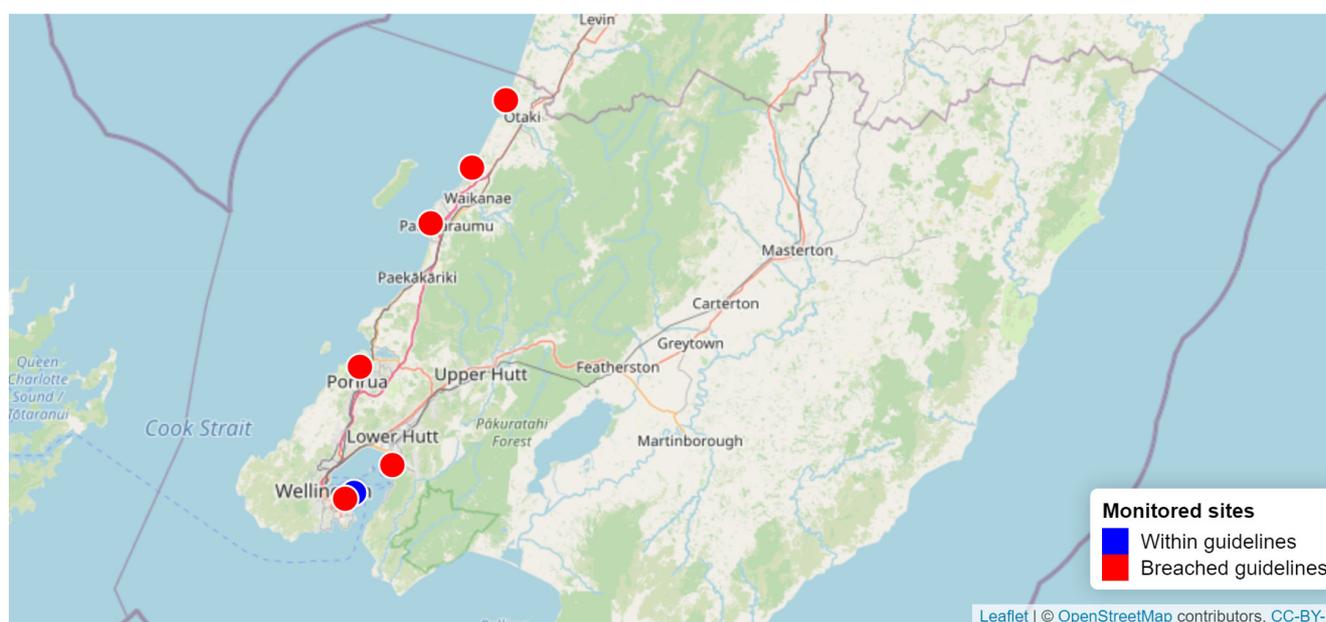


Figure 21: Shellfish gathering water quality monitoring sites coloured by whether they met MfE/MoH 2003 guidelines.

Table 6: Faecal coliform results for the 2021/22 summer season. Bold red cells indicate breaches of water quality criteria.

Whaitua	Site	MfE/MoH guidelines	Median (cfu/100mL)	Maximum (cfu/100mL)	No. (and %) of results >43 cfu/100mL	Total no. of samples
Kāpiti	Ōtaki Beach at Surf Club	Exceeded	18	1,080	5 (45%)	11
Kāpiti	Peka Peka Beach at Road End	Exceeded	17	725	4 (33%)	12
Kāpiti	Raumati Beach at Tainui Street	Exceeded	76	460	8 (73%)	11
Te Awarua-o-Porirua	Porirua Harbour at Rowing Club	Exceeded	76	3,200	9 (60%)	15
Te Whanganui-a-Tara	Mahanga Bay	Within	8	400	5 (31%)	16
Te Whanganui-a-Tara	Shark Bay	Exceeded	20	310	6 (38%)	16
Te Whanganui-a-Tara	Sorrento Bay	Exceeded	28	2,800	5 (31%)	16

Resources

Greater Wellington Regional Council

[Is it safe to swim- Recreational water quality in the Wellington Region](#)

[Water quality and monitoring FAQs](#)

Land, Air, Water Aotearoa (LAWA)

[LAWA summary of the microbiological water quality guidelines](#)

[LAWA Factsheet: what are faecal indicator bacteria?](#)

[LAWA factsheet: potentially toxic algae](#)

NIWA

[Recreational water quality monitoring and reporting in New Zealand. A discussion paper for Regional and Unitary Councils](#)

Appendix

Monitoring details

Table A1: Monitoring site information. Whaitua abbreviations: **TAoP**: Te Awarua-o-Porirua, **RMH**: Ruamāhanga, **TWT**: Te Whanganui-a-Tara, **KC**: Kāpiti Coast.

Whaitua	Site	Rainfall station	Type	Toxic algae tier	Winter monitoring
TWT	Akatarawa River at Hutt Confluence	Akatarawa River at Cemetery	freshwater		
TWT	Balaena Bay	Hataitai at Old Post Office	marine		
TWT	Breaker Bay	Miramar at Miramar Bowling Club	marine		
TWT	Days Bay at Moana Road	Hutt River at Shandon Golf Club	marine		
TWT	Days Bay at Wellesley College	Hutt River at Shandon Golf Club	marine		
TWT	Days Bay at Wharf	Hutt River at Shandon Golf Club	marine		
TWT	Hataitai Beach	Hataitai at Old Post Office	marine		
TWT	Hutt River at Birchville	Hutt River at Te Marua	freshwater	2	
TWT	Hutt River at Maoribank Corner	Hutt River at Te Marua	freshwater		
TWT	Hutt River at Melling Bridge	Hutt River at Te Marua	freshwater	1	
TWT	Hutt River at Poets Park	Hutt River at Te Marua	freshwater	2	
TWT	Hutt River upstream of Silverstream Bridge	Hutt River at Te Marua	freshwater	1	
TWT	Island Bay at Derwent Street	Berhampore at Nursery	marine		
TWT	Island Bay at Reef St Recreation Ground	Berhampore at Nursery	marine		
TWT	Island Bay at Surf Club	Berhampore at Nursery	marine		Y
TAoP	Karehana Bay at Cluny Road	Taupo Stream at Whenua Tapu	marine		Y
TWT	Lowry Bay at Cheviot Road	Hutt River at Shandon Golf Club	marine		
TWT	Lyll Bay at Onepu Road	Newtown at Mansfield Street	marine		
TWT	Lyll Bay at Queens Drive	Newtown at Mansfield Street	marine		
TWT	Lyll Bay at Tirangi Road	Newtown at Mansfield Street	marine		Y
TWT	Mahanga Bay	Miramar at Miramar Bowling Club	marine		
TWT	Oriental Bay at Band Rotunda	Wellington at Te Papa	marine		
TWT	Oriental Bay at Freyberg Beach	Wellington at Te Papa	marine		
TWT	Oriental Bay at Wishing Well	Wellington at Te Papa	marine		Y
KC	Ōtaki Beach at Surf Club	Ōtaki River at Depot	marine		
KC	Ōtaki River at State Highway One	Waitatapia Stream at Taungata	freshwater	1	
TWT	Ōwhiro Bay	Berhampore at Nursery	marine		Y
KC	Paekākāriki Beach at Surf Club	Whareroa Stream at Mackays Crossing	marine		Y
KC	Paekākāriki Beach at Whareroa Road	Whareroa Stream at Mackays Crossing	marine		
TWT	Pakuratahi River at Hutt Forks	Pakuratahi River at Centre Ridge	freshwater		
KC	Paraparaumu Beach at Maclean Park	Waikanae River at Water Treatment Plant	marine		
KC	Paraparaumu Beach at Nathan Avenue	Whareroa Stream at Mackays Crossing	marine		

Whaitua	Site	Rainfall station	Type	Toxic algae tier	Winter monitoring
KC	Paraparaumu Beach at Ngapotiki Street	Whareroa Stream at Mackays Crossing	marine		
KC	Paraparaumu Beach at Toru Road	Waikanae River at Water Treatment Plant	marine		
TAoP	Pāuatahanui Inlet at Paremata Bridge	Porirua Stream at Tawa Pool	marine		
TAoP	Pāuatahanui Inlet at Water Ski Club	Taupo Stream at Whenua Tapu	marine		
KC	Peka Peka Beach at Road End	Waikanae River at Water Treatment Plant	marine		
TWT	Petone Beach at Kiosk	Hutt River at Shandon Golf Club	marine		Y
TWT	Petone Beach at Sydney Street	Hutt River at Shandon Golf Club	marine		
TWT	Petone Beach at Water Ski Club	Hutt River at Shandon Golf Club	marine		
TAoP	Plimmerton Beach at Bath Street	Taupo Stream at Whenua Tapu	marine		
TAoP	Porirua Harbour at Rowing Club	Porirua Stream at Tawa Pool	marine		
TAoP	Porirua Harbour at Wi Neera Drive Boat Ramp	Porirua Stream at Tawa Pool	marine		Y
TWT	Princess Bay	Newtown at Mansfield Street	marine		
TAoP	Pukerua Bay	Taupo Stream at Whenua Tapu	marine		Y
KC	Raumati Beach at Aotea Road	Whareroa Stream at Mackays Crossing	marine		
KC	Raumati Beach at Marine Gardens	Whareroa Stream at Mackays Crossing	marine		Y
KC	Raumati Beach at Tainui Street	Whareroa Stream at Mackays Crossing	marine		
TWT	Robinson Bay at HW Shortt Rec Ground	Hutt River at Shandon Golf Club	marine		
TWT	Robinson Bay at Nikau Street	Hutt River at Shandon Golf Club	marine		Y
TWT	Rona Bay at N end of Cliff Bishop Park	Hutt River at Shandon Golf Club	marine		
TWT	Rona Bay at Wharf	Hutt River at Shandon Golf Club	marine		
RMH	Ruamāhanga River at Double Bridges	Ruamāhanga River at Mt Bruce	freshwater	2	
RMH	Ruamāhanga River at Kokotau	Waingawa River at Angle Knob	freshwater	1	
RMH	Ruamāhanga River at Morrisons Bush	Waiohine River at Gorge	freshwater		
RMH	Ruamāhanga River at Te Ore Ore	Ruamāhanga River at Mt Bruce	freshwater	2	
RMH	Ruamāhanga River at The Cliffs	Waingawa River at Angle Knob	freshwater	2	
RMH	Ruamāhanga River at Waihenga Bridge	Waingawa River at Angle Knob	freshwater		
TWT	Scorching Bay	Miramar at Miramar Bowling Club	marine		Y
TWT	Seatoun Beach at Inglis Street	Miramar at Miramar Bowling Club	marine		
TWT	Seatoun Beach at Wharf	Miramar at Miramar Bowling Club	marine		
TWT	Shark Bay	Hataitai at Old Post Office	marine		
TWT	Sorrento Bay	Hutt River at Shandon Golf Club	marine		
TAoP	South Beach at Plimmerton	Taupo Stream at Whenua Tapu	marine		Y
KC	Te Horo Beach at Sea Road	Ōtaki River at Depot	marine		
TAoP	Titahi Bay at Bay Drive	Taupo Stream at Whenua Tapu	marine		
TAoP	Titahi Bay at South Beach Access Road	Taupo Stream at Whenua Tapu	marine		
TAoP	Titahi Bay at Toms Road	Taupo Stream at Whenua Tapu	marine		Y
KC	Waikanae Beach at Ara Kuaka Carpark	Waikanae River at Water Treatment Plant	marine		
KC	Waikanae Beach at William Street	Waikanae River at Water Treatment Plant	marine		

Whaitua Site	Rainfall station	Type	Toxic algae tier	Winter monitoring
KC	Waikanae River at Jim Cooke Park	Waikanae River at Water Treatment Plant	freshwater	1
KC	Waikanae River at State Highway One	Waikanae River at Water Treatment Plant	freshwater	1
RMH	Waingawa River at South Road	Waingawa River at Angle Knob	freshwater	2
TWT	Wainuiomata River at Richard Prouse Park	Wainuiomata River at Wainui Reservoir	freshwater	
RMH	Waiohine River at State Highway 2	Waiohine River at Gorge	freshwater	
RMH	Waipoua River at Colombo Road	Waipoua at Westons	freshwater	1
TWT	Wellington City Waterfront at Shed 6	Wellington at Te Papa	marine	
TWT	Wellington Harbour at Taranaki St Dive Platform	Wellington at Te Papa	marine	
TWT	Whairepo Lagoon	Wellington at Te Papa	marine	
TWT	Worser Bay	Miramar at Miramar Bowling Club	marine	
TWT	York Bay	Hutt River at Shandon Golf Club	marine	

Data tables

Freshwater *E. coli* NOF states

Table A2: NOF states calculated for samples taken in “All” and “Low” flow conditions. Low flow is considered less than three times the median of long-term flow, and these states do not require the minimum 50 data points so please take this in to account when making comparisons. Arrows over next to NOF states indicate change in levels from the previous season – i.e. a single up arrow means that this season’s state is one level higher (worse) than last season’s state. See the [results section](#) for more details.

Whaitua abbreviations: **RMH**: Ruamāhanga, **TWT**: Te Whanganui-a-Tara, **KC**: Kāpiti Coast.

Whaitua	Site	Flows	95 th % of <i>E. coli</i>	NOF state	Samples this year	Total samples
KC	Ōtaki River at State Highway One	Low	172	B	14	63
KC	Ōtaki River at State Highway One	All	286	C↑	15	68
KC	Waikanae River at Jim Cooke Park	All	1,092	D	15	67
KC	Waikanae River at Jim Cooke Park	Low	733	D↑	13	59
KC	Waikanae River at State Highway One	All	719	D	15	67
KC	Waikanae River at State Highway One	Low	492	C	13	59
TWT	Akatarawa River at Hutt Confluence	All	520	C	11	62
TWT	Akatarawa River at Hutt Confluence	Low	533	C	9	57
TWT	Hutt River at Birchville	All	1,212	D	11	63
TWT	Hutt River at Birchville	Low	820	D	9	57
TWT	Hutt River at Maoribank Corner	All	1,354	D	11	63
TWT	Hutt River at Maoribank Corner	Low	1,193	D	9	57
TWT	Hutt River at Melling Bridge	All	1,072	D	10	61
TWT	Hutt River at Melling Bridge	Low	979	D	6	53
TWT	Hutt River at Poets Park	All	957	D	11	63
TWT	Hutt River at Poets Park	Low	849	D	9	57
TWT	Hutt River upstream of Silverstream Bridge	All	790	D	11	63
TWT	Hutt River upstream of Silverstream Bridge	Low	860	D	8	56
TWT	Pakuratahi River at Hutt Forks	All	752	D	11	62
TWT	Pakuratahi River at Hutt Forks	Low	824	D	8	51
TWT	Wainuiomata River at Richard Prouse Park	All	1,428	D	11	62
TWT	Wainuiomata River at Richard Prouse Park	Low	1,458	D	10	57
RMH	Ruamāhanga River at Double Bridges	All	215	B	11	60
RMH	Ruamāhanga River at Double Bridges	Low	220	B	8	49
RMH	Ruamāhanga River at Kokotau	All	512	C	11	58
RMH	Ruamāhanga River at Kokotau	Low	476	C↑	8	52
RMH	Ruamāhanga River at Morrisons Bush	Low	400	C	8	55
RMH	Ruamāhanga River at Morrisons Bush	All	714	D↑	11	59
RMH	Ruamāhanga River at Te Ore Ore	All	830	D	11	60
RMH	Ruamāhanga River at Te Ore Ore	Low	584	D	8	54
RMH	Ruamāhanga River at The Cliffs	All	339	C↑	11	59
RMH	Ruamāhanga River at The Cliffs	Low	268	C↑	8	53

Whaitua	Site	Flows	95 th % of <i>E. coli</i>	NOF state	Samples this year	Total samples
RMH	Ruamāhanga River at Waihenga Bridge	All	1,185	D↑	11	59
RMH	Ruamāhanga River at Waihenga Bridge	Low	725	D↑	8	55
RMH	Waingawa River at South Road	All	96	A	11	60
RMH	Waingawa River at South Road	Low	94	A	8	53
RMH	Waiohine River at State Highway 2	All	130	A↓	11	57
RMH	Waiohine River at State Highway 2	Low	218	B↓	8	46
RMH	Waipoua River at Colombo Road	All	1,210	D↑	11	60
RMH	Waipoua River at Colombo Road	Low	1,258	D↑	7	52

Marine enterococci MAC grades

Table A3: MAC grades calculated for samples taken in the summer (last week of October to the end of March) and winter bathing periods (outsider of summer). Arrows over next to NOF states indicate change in levels from the previous season – i.e. a single up arrow means that this season's grade is one level higher (worse) than last season's grade. Sites with too few data points are not rated (**N/R**), see the [results section](#) for more details.

Whaitua abbreviations: **TAoP**: Te Awarua-o-Porirua, **TWT**: Te Whanganui-a-Tara, **KC**: Kāpiti Coast.

Whaitua	Site	Season	95 th % of Enterococci	MAC	Samples this year	Total samples
KC	Ōtaki Beach at Surf Club	Summer	227	C↑	12	63
KC	Paekākāriki Beach at Surf Club	Summer	85	B	14	73
KC	Paekākāriki Beach at Surf Club	Winter	80	B	14	67
KC	Paekākāriki Beach at Whareroa Road	Summer	1,033	D↑	12	63
KC	Paraparaumu Beach at Maclean Park	Summer	560	D	12	63
KC	Paraparaumu Beach at Nathan Avenue	Summer	405	C	12	63
KC	Paraparaumu Beach at Ngapotiki Street	Summer	647	D	12	63
KC	Paraparaumu Beach at Toru Road	Summer	634	D	12	63
KC	Peka Peka Beach at Road End	Summer	185	B	12	63
KC	Raumati Beach at Aotea Road	Summer	449	C	12	63
KC	Raumati Beach at Marine Gardens	Summer	904	D	14	73
KC	Raumati Beach at Marine Gardens	Winter	396	C	13	66
KC	Raumati Beach at Tainui Street	Summer	231	C	12	63
KC	Te Horo Beach at Sea Road	Summer	869	D	12	63
KC	Waikanae Beach at Ara Kuaka Carpark	Summer	194	B	12	63
KC	Waikanae Beach at William Street	Summer	135	B	12	63
TAoP	Karehana Bay at Cluny Road	Winter	542	N/R	15	27
TAoP	Karehana Bay at Cluny Road	Summer	380	C↑	15	70
TAoP	Pāuatahanui Inlet at Paremata Bridge	Summer	314	C↑↑	16	69
TAoP	Pāuatahanui Inlet at Water Ski Club	Summer	420	C	16	70
TAoP	Plimmerton Beach at Bath Street	Summer	960	D↑	16	70
TAoP	Porirua Harbour at Rowing Club	Summer	2,460	D	16	76
TAoP	Porirua Harbour at Rowing Club	Winter	2,625	D	15	65
TAoP	Porirua Harbour at Wi Neera Drive Boat Ramp	Summer	2,760	D	16	71
TAoP	Porirua Harbour at Wi Neera Drive Boat Ramp	Winter	4,475	N/R	15	25
TAoP	Pukerua Bay	Summer	182	B	15	69
TAoP	Pukerua Bay	Winter	71	N/R	15	27

Whaitua	Site	Season	95 th % of Enterococci	MAC	Samples this year	Total samples
TAoP	South Beach at Plimmerton	Summer	791	D	16	79
TAoP	South Beach at Plimmerton	Winter	690	D	15	67
TAoP	Titahi Bay at Bay Drive	Summer	298	C↑	19	79
TAoP	Titahi Bay at South Beach Access Road	Summer	293	C	19	77
TAoP	Titahi Bay at South Beach Access Road	Winter	129	N/R	16	28
TAoP	Titahi Bay at Toms Road	Summer	200	B	19	87
TAoP	Titahi Bay at Toms Road	Winter	311	C	16	68
TWT	Ōwhiro Bay	Summer	869	D	16	83
TWT	Ōwhiro Bay	Winter	363	N/R	14	28
TWT	Balaena Bay	Summer	300	C	16	82
TWT	Breaker Bay	Summer	75	B	16	82
TWT	Days Bay at Moana Road	Summer	327	C	16	83
TWT	Days Bay at Wellesley College	Summer	188	B↓	16	83
TWT	Days Bay at Wharf	Summer	195	B↓	16	83
TWT	Hataitai Beach	Summer	248	C	16	82
TWT	Island Bay at Derwent Street	Summer	276	C	16	82
TWT	Island Bay at Reef St Recreation Ground	Summer	602	D↑	16	82
TWT	Island Bay at Surf Club	Winter	280	C	14	69
TWT	Island Bay at Surf Club	Summer	555	D↑	16	91
TWT	Lowry Bay at Cheviot Road	Summer	205	C	16	83
TWT	Lyllall Bay at Onepu Road	Summer	72	B	16	82
TWT	Lyllall Bay at Queens Drive	Summer	128	B	16	82
TWT	Lyllall Bay at Tirangi Road	Summer	190	B	16	90
TWT	Lyllall Bay at Tirangi Road	Winter	443	C	14	69
TWT	Mahanga Bay	Summer	204	C↑	16	82
TWT	Oriental Bay at Band Rotunda	Summer	392	C	16	82
TWT	Oriental Bay at Freyberg Beach	Summer	132	B↓	16	82
TWT	Oriental Bay at Wishing Well	Summer	156	B	16	91
TWT	Oriental Bay at Wishing Well	Winter	337	C	14	68
TWT	Petone Beach at Kiosk	Summer	497	C	16	93
TWT	Petone Beach at Kiosk	Winter	322	C	14	68
TWT	Petone Beach at Sydney Street	Summer	501	D↑	16	83
TWT	Petone Beach at Water Ski Club	Summer	494	C	16	83
TWT	Princess Bay	Summer	66	B	16	82
TWT	Robinson Bay at HW Shortt Rec Ground	Summer	154	B↓	16	83
TWT	Robinson Bay at Nikau Street	Winter	297	C	14	68
TWT	Robinson Bay at Nikau Street	Summer	155	B↓	16	92
TWT	Rona Bay at N end of Cliff Bishop Park	Summer	208	C	16	83
TWT	Rona Bay at Wharf	Summer	189	B↓	16	84
TWT	Scorching Bay	Summer	67	B	16	91
TWT	Scorching Bay	Winter	228	C	14	68
TWT	Seatoun Beach at Inglis Street	Summer	190	B	16	82
TWT	Seatoun Beach at Wharf	Summer	148	B	16	82
TWT	Shark Bay	Summer	178	B	16	82
TWT	Sorrento Bay	Summer	210	C	16	83
TWT	Wellington City Waterfront at Shed 6	Summer	340	C	16	79
TWT	Wellington Harbour at Taranaki St Dive Platform	Summer	865	D	16	81

Whaitua	Site	Season	95th % of Enterococci	MAC	Samples this year	Total samples
TWT	Whairepo Lagoon	Summer	300	C	16	80
TWT	Worser Bay	Summer	164	B	16	82
TWT	York Bay	Summer	275	C	16	83