

Key points

- 34 river sites are monitored across Marlborough on a monthly basis for the purpose of state of the environment reporting of freshwater quality.
- Diffuse pollution is Marlborough's biggest threat to water quality as poorer water quality is noted in more intensively developed areas.
- Good land management practices are intrinsically linked with good water quality.
- Nitrate shows a strong seasonal pattern, with highest concentrations observed in winter/spring.
- High concentrations of suspended solids, bacteria and heavy metals occur after heavy rainfall.

Why we monitor water quality

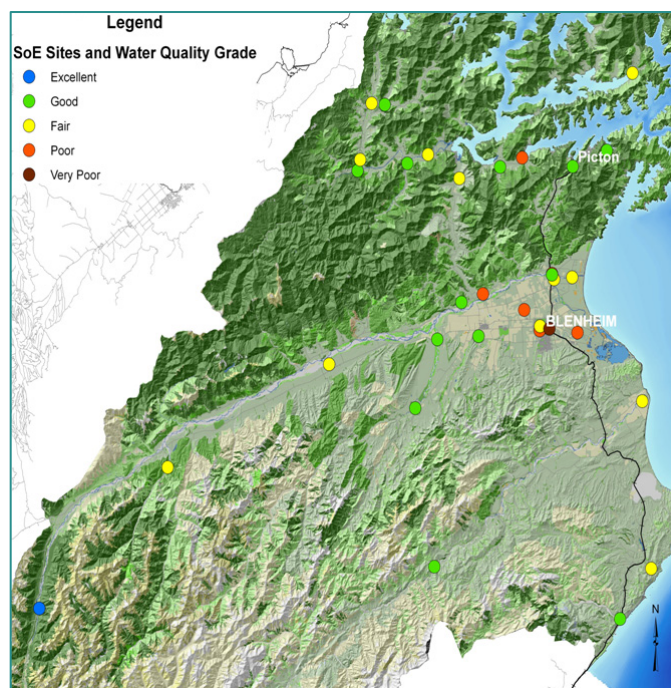
- To assess the current state of our freshwaters for the region.
- To identify trends in water quality over time to ensure deteriorating trends are reversed and improving trends are maintained.
- To ensure the values of our rivers and streams (i.e. recreational, ecological, fish spawning etc.) are not compromised by existing and changing land use practices.

Where and how we monitor water quality

State of the Environment (SoE) surface water quality monitoring takes a catchment management approach to water quality monitoring. One of the objectives of SoE water quality monitoring is to assess changes in water quality over time and to relate these changes to land use practices.

There are 34 SoE sites (shown to the right) which are monitored on a monthly basis. A number of key water quality parameters are analysed for which define the health of the waterways. The above map summarises water quality data from 2007-09 for seven water quality parameters. This information is summarised to produce a water quality grade for each site.

Approximately half of sites are graded as excellent or good, whilst 20% are graded as poor or very poor. The poorest water quality is in areas which have been intensively developed, either for agriculture or urbanisation.



SITE ID	SITE NAME
ARE-3	Are Are Creek
AWR-1	Awatere (lower)
AWR-3	Awatere at Awapiri
BBS-001	Black Birch Stream
BNR-1	Branch River upstream of Hydroelectric dam
CUL-3	Cullens Creek
DNC-002	Duncan Stream (Linkwater)
DRC-1	Doctors Creek
FLX-1	Flaxbourne at limestone quarry
GRR-001	Graham River at road bridge
KNR-1	Kenepuru upstream of NIWA flow site
KTR-005	Kaituna at Readers Road
MST-21	Mill Stream at Mill Road
MUR-1	Murphys Creek
OMR-1	Omaka River at Hawkesbury Road
ONR-1	Onamalutu
OPO-1	Opouri
OPR-1	Opawa at Swamp Road
OPR-3	Opawa at Hammerichs Road
PLR-4	Pelorus at Fishermans Flat
PLR-5	Pelorus at Kahikatea Flat
RAR-1	Rai at Rai Falls
RON-4	Ronga
SPC-1	Spring Creek at flood gates
TMR-1	Tuamarina at Wairau confluence
TYR-1	Taylor River at Riverside
WaiM	Waima upstream of SH bridge
WDV-1	Wairau Diversion at Neals Road
WHR-1	Waihopai at SH bridge
WHR-5	Waihopai at Craiglochart
WKR-1	Wakamarina upsteam of SH bridge
WRR-2	Wairau at Dip Flat
WRR-6	Wairau at SH6 Bridge
WTS-009	Waitohi at SH1 bridge

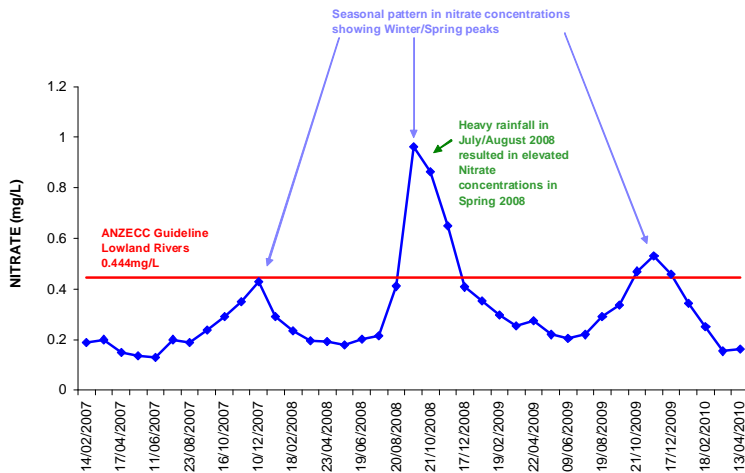
Water Quality 2010

Nitrate is one of the water quality parameters analysed for on a monthly basis. Nitrate concentrations are typically low (<0.15mg/L) in areas of native bush, concentrations increase as the degree of land intensification increases. Excess nitrate can lead to increased algal growth and algal blooms which can stress aquatic life and also increase the risk of toxic blooms forming. Nitrate exhibits a strong seasonal pattern with highest concentrations observed in winter/spring when rainfall is at its highest.

Suspended solids, bacteria and heavy metal concentrations are highest during and after heavy rainfall. Ammonia and phosphorus can also peak during rainfall events.

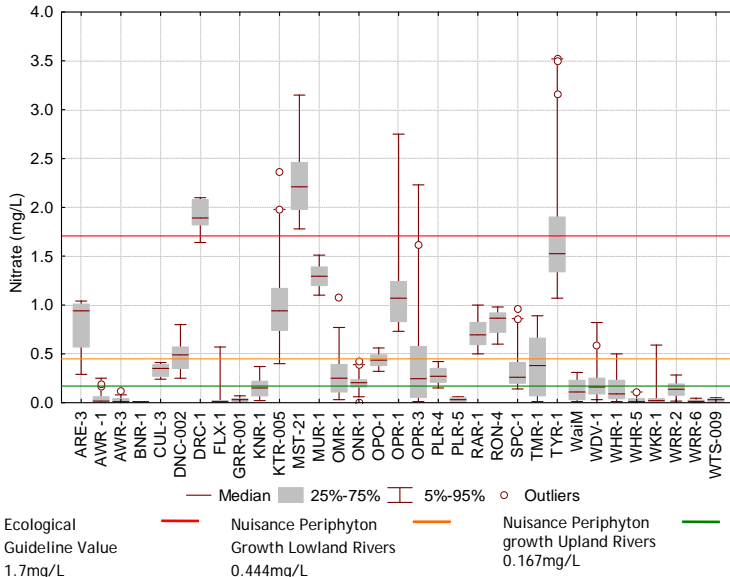


SPRING CREEK AT FLOOD GATES



Seasonal pattern of nitrate concentration for Spring Creek

Nitrate Concentrations
2007-09



Nitrate concentrations recorded at the SoE water quality sites.

The lower Pelorus after heavy rainfall when pollutants are known to be high and during dry weather, when the waters are clear and suitable for fishing and swimming. The amount of pollutants entering waterways during heavy rainfall is dependent on the surrounding land use and land use practices, intensive agriculture and urban areas have poorer water quality.

What can you do?

- Do not pour paint, household cleaners, herbicides, pesticides or other chemicals down stormwater drains as these lead directly into waterways. Dispose of appropriately according to manufacturers instructions.
- Do not use herbicide or pesticide sprays in wet weather or when rain is forecast.
- Maintain riparian strips along waterways where possible, these serve to filter out contaminants and to retard contaminant movement during wet weather. Riparian strips also serve to stabilise stream banks thereby preventing erosion and the addition of sediments into streams.
- Report any pollution events or incidences which you think may pollute our waterways to the Marlborough District Council.