

RIVER AND STREAM HEALTH

Annual Monitoring Summary 2015/16



Why we monitor water quality and ecosystem health

Rivers and streams have important natural and cultural values. They are also important resources for drinking water, farming, recreational activities, managing storm water and industrial use. Human activities and discharges to rivers from various sources affect the quality of water and its suitability for human use and biodiversity.

Reporting of Nelson's water quality

Nelson's streams and rivers are classified from grades A to E (Excellent to Very Degraded) using the Nelson Freshwater Classification system, based on regular water quality and stream sediment monitoring across 26 sites. 2015 is the first year that monthly water quality sampling has occurred to meet national monitoring and reporting requirements for the National Objectives Framework for Freshwater Management and for the regional council reporting web portal Land Air Water Aotearoa (LAWA).

Trends in water quality

Overall the 2015 annual water quality class for each site has reflected the long term trend. 73% of monitoring sites were classified at grade C or above, a slight improvement compared to their classifications reported in the Nelson Plan (2007). Nelson waterways were significantly impacted by the 2011 flood and are now recovering from subsequent instream flood maintenance works. Stoke also experienced a flood event in 2013, resulting in further erosion and surface run off and disturbance to stream beds and their aquatic communities.

Four sites, Jenkins at Pascoe, York at Waimea Road, Maitai at Groom Road and Todds at SH6 had improvements in annual grades compared to the long term classification and trend, mainly due to moderate to good macroinvertebrate community scores. Other water quality measures remained largely the same.

Annual water quality grades declined for two sites, the Lud at 4.7km and Whangamoia at Hippolite Road compared to the long term classification and trend, mainly due to slightly elevated dissolved nitrate and phosphate. Elevated nitrate was also recorded in York Stream and Sharland Creek.

Hillwood at the Glen was below the Bottom Line or the minimal acceptable state for *Escherichia coli* Human Health required for secondary contact recreation (i.e. not full immersion in water). Recreation (swimmable) bathing sites are reported separately in the recreation Bathing Water Quality scorecard.

The annual classification for all water quality monitoring sites is summarised in Table 1.



Table 1. 2015 Annual water quality grades for each catchment. Sites are listed for each Freshwater Management Unit, by catchment from source to sea.

Nelson Freshwater Classification		2015 Annual Classification
Map #	Stoke FMU	
4	Poorman at Barnicoat Walkway	B
3	Poorman at Seaview Rd	D
2	Orphanage at Saxton Rd East	C
1	Jenkins at Pascoe St	C
1	Saxton at Main Rd	Not Monitored
Maitai FMU		
12	Maitai South Branch at Intake	A
14	Groom at Maitai Confluence	B
11	Maitai at Groom Rd	B
13	Sharland at Maitai Confluence	D
10	Maitai at Riverside	C
9	Brook at Motor Camp	A
8	Brook at Burn Pl	C
7	Brook at Manuka St	D
6	York at Waimea Rd	D
15	Todds at SH6	C
28	Hillwood at Glen Rd	D
Wakapuaka FMU		
16	Wakapuaka at Duckpond Rd	A
17	Wakapuaka at Maori Pa Rd	B
18	Wakapuaka at Hira	B
19	Teal at 1.9km	B
21	Lud at SH6	C
22	Lud at 4.7km	D
20	Pitchers at 890m	Not Monitored
Whangamoia FMU		
23	Whangamoia at Hippolite Rd	B
24	Graham at SH6	A
26	Colins at SH6	B
27	Dencker at Kokorua Rd	B
25	Whangamoia at Kokorua Bridge	B

The Freshwater Management Units and water quality grades for each site are shown in Figure 1.

Phormidium cyanobacteria monitoring

Cawthron students undertook weekly monitoring in the lower Maitai for the *Phormidium* cyanobacteria, also known as toxic blue green algae. Blooms of *Phormidium* were less extensive than those found in the previous two years of Cawthron monitoring, and were limited to a short period pre-Christmas 2015. The role of algal competition appears important in the Maitai with a succession of blooms of the filamentous green algae *Chladophora* in spring and diatoms in late summer. A cyanobacteria public awareness action plan was developed with representatives of the Nelson and Tasman communication and science staff, Nelson Marlborough Health Board, Cawthron Institute, Nelson Veterinary Practices and Friends of the Maitai. Actions included updating information leaflets and events for veterinary staff, public and dog owners that occurred over the summer of 2015/16.



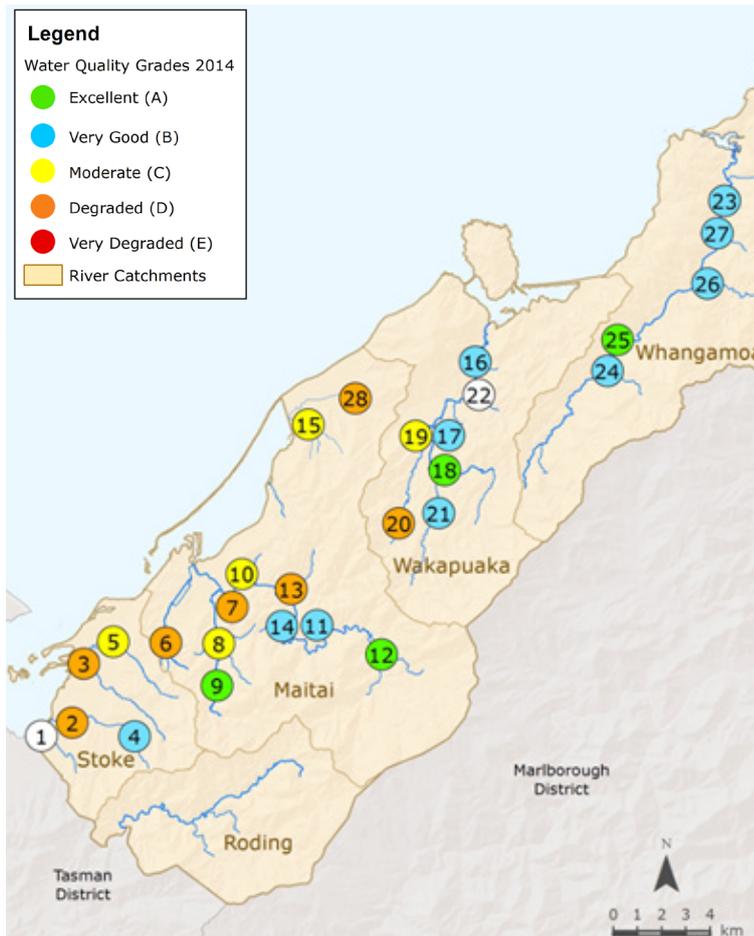
Biodiversity fish surveys

Fish surveys across the Whangamoia water quality monitoring sites were undertaken for the first time this year. Overall seven fish species were recorded, their distribution reflecting the distance from the sea, fish habitat preferences and presence of fish passage barriers. The first record of bluegill bully was found in the lower Collins River at the confluence with the Whangamoia River. All fish records have been reported to the New Zealand Freshwater Fish Database hosted by NIWA.



Image: Bluegill bully found in the lower Collins River

Figure 1. 2015 Annual water quality grades for the Nelson region



Further information and contacts

Get involved

The Friends of the Maitai community group brings community members together to care for the Maitai River. For more information contact friendsofmaitai@gmail.com

The Waimaori Streamcare Programme works with schools and local people through hands-on-workshops and brings a cultural perspective as to why clean water matters. For more information about Waimaori contact waimaori@ncc.govt.nz

Council has collaborated with the NIWA led citizen science project to assess whether community monitoring data can be used alongside regional council water quality monitoring and add value to the national environmental picture. For more information visit www.niwa.co.nz (search citizen science)

The Nelson Nature programme targets environmental restoration work with landowners, community groups and key agencies in the region. For more information visit www.nelsonnature.nz (search=Nelson Nature)

Project Maitai/Mahitahi is working to restore the Maitai River so that it is swim-able and fish-able from source to sea, by addressing a range of issues affecting water quality. For more information visit nelson.govt.nz (search = project maitai).

Council will be working with community groups to establish Fresh Water Management Units and monitoring requirements under the National Policy Statement for Freshwater Management. For more information visit nelson.govt.nz (search=freshwater working groups)

Environmental reporting

For further information about Nelson's water management, visit the Nelson regional section on the LAWa website (www.lawa.org.nz), which provides a summary of the national and regional outlook for water quality at freshwater and recreational bathing monitoring sites, news stories and events across the country. A summary of freshwater fish species and their known distributions within the Nelson region is available at nelson.govt.nz (search = freshwater review) and the NIWA fish database