

# Regional Swimming Targets for Northland

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## The Targets

The targets for swimming water quality in Northland rivers and lakes are:

**Rivers:** 25.6% or more rivers (by length) that are fourth order or larger are to meet swimming standards by 2030 (during normal flow conditions).

**Lakes:** more than 66% of lakes with a perimeter greater than 1.5km are to meet swimming standards by 2030.

The targets set out above are interim in nature given:

- Council decisions on the Proposed Regional Plan have yet to be released (council decisions are expected by mid-2019).
- New water quality related measures in the 2018-2028 Long Term Plan have only recently been confirmed and the likely improvements in swimming water quality have not been modelled / quantified (we do not have the evidence base at this point to support a change to the targets).
- The government has signalled changes to the National Policy Statement for Freshwater Management (NPS-FM) in 2019/2020.
- Also a number of water quality related requirements of the NPS-FM have yet to be implemented in the regional plan (including objectives and limits for E.coli and the identification and management of primary contact sites required by Policy A5 of the NPS-FM). This is to be addressed in a future change to the regional plan prior to 2025 after which the targets can be revisited.

## Introduction

The National Policy Statement for Freshwater Management (NPS-FM) as amended in August 2017 directs all regional councils (including unitary authorities) to improve the quality of fresh water so it is suitable for primary contact more often. "Primary contact" includes swimming, and means people's contact with fresh water that involves immersion in the water. For the purposes of the NPS-FM, being suitable for primary contact more often means an improvement in water quality (as measured by *E.coli* in rivers and cyanobacteria and *E.coli* in lakes) from one "state" to another. The states are: Excellent (blue), Good (green), Fair (yellow), Intermittent (orange) and Poor (red). The minimum state deemed suitable for primary contact is 'Fair'. The measures used to define each state are set out in Appendix 2 of the NPS-FM.

The NPS-FM also requires regional councils to set regional targets to improve the quality of freshwater in 'specified' rivers and lakes by 31 December 2018. Specified rivers and lakes are defined in the NPS-FM as: fourth order (or larger) rivers and lakes with a perimeter of 1.5km or more - these waterbodies have been identified and categorised in terms of their 'swimming state' by the Ministry for the Environment: see: <http://www.mfe.govt.nz/fresh-water/about-freshwater/northland>

All regional councils have worked together to use the best information available to identify:

- For each region (including Northland) the improvements that will be made to water quality in rivers and lakes under programmes that are planned or underway
- When the anticipated water quality improvements will be achieved
- The likely costs of all interventions, and where these costs will fall

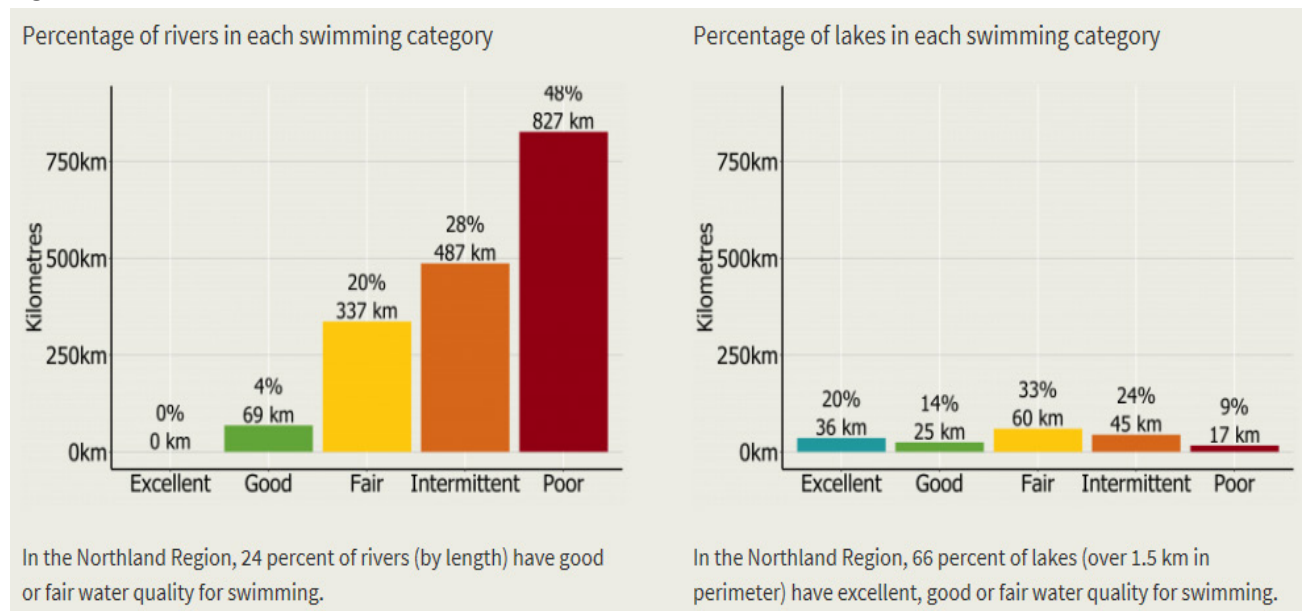
A report on these theoretical improvements and costs, presented region by region, is available here <http://www.mfe.govt.nz/publications/fresh-water/regional-information-setting-draft-targets-swimmable-lakes-and-rivers>. The assumptions and limitations of the modelling approaches taken are described in the report. The report has been used by regional councils as the basis for setting regional targets.

## Regional context and focus

The main factors that affect swimming water quality in Northland are faecal contamination (as measured by *E.coli*) and sediment / water clarity in rivers and cyanobacteria in lakes. The main sources of *E.coli* are ruminants (grazing mammals), wildfowl and to a lesser degree humans and plants. There is also some evidence of ‘naturalised’ *E.coli* occurring in Northland rivers (that is *E.coli* may be able to persist in the environment independent of new faecal inputs). Sediment sources are predominantly from highly erodible land and streambanks. Cyanobacteria blooms often occur when there is a combination of suitable conditions influenced by nutrient concentrations, temperature, light, and water clarity. These factors can be exacerbated by Northland’s warm climate, high rainfall and geology.

The overall state of the Northland region’s specified rivers and lakes in terms of NPS-FM swimming water quality measures (*E.coli* in rivers and cyanobacteria in lakes) has been modelled by the Ministry for the Environment – See Figure 1 below.

Figure 1



For more information and related maps showing Northland’s modelled swimming water quality please see the Ministry for the Environment website: <http://www.mfe.govt.nz/fresh-water/about-freshwater/northland>

Regional priorities for improving water quality in Northland's rivers and coastal waters are to reduce the amount of faecal pathogens and sediment that enter them. For lakes, our focus is to reduce sediment and nutrients inputs. Council also seeks improvement in the biodiversity and cultural values of water bodies generally with a particular focus on dune lakes and wetlands.

We therefore have a freshwater improvement programme that has a broad focus and is not limited to contact recreation. The programme takes a strategic approach to addressing the priorities above and to meeting community aspirations for freshwater. Resources are prioritised to those actions that make the biggest difference to the issues that matter most in Northland. Our strategic approach is informed by science and investigations that are specific to Northland and include detailed cost-benefit assessments to ensure actions are well targeted (recent examples include the Kaipara Harbour Sediment Mitigation Study<sup>1</sup> and Managing Sediment and *E. coli* in the Whangarei Harbour Catchment<sup>2</sup>).

In delivering its freshwater improvement programme, council uses both regulatory methods and operational programmes. Regulatory methods are primarily delivered through policies and rules in regional plans developed under the Resource Management Act. The council has recently developed a new regional plan (Proposed Regional Plan for Northland) which includes a range of measure to improve water quality. We expect decisions on the Proposed Regional Plan to be released mid-2019.

Council undertakes compliance monitoring in relation to a range of discharge consents to ensure conditions are met. We also monitor effluent systems on all dairy farms in Northland annually and do follow-up visits to significantly non-complaint effluent systems.

While regulatory methods are important, they are not the only approach available and council places a great deal of emphasis on the non-regulatory / operational elements of the water quality improvement programme. These include:

- Monitoring popular swimming sites during the bathing season and investigation where necessary and undertaking actions to improve water quality at these sites.
- An extensive soil conservation programme aimed at reducing sediment loads to fresh and coastal waters. We also have developed our own poplar and willow nursery to provide landowners with planting material to reduce soil erosion.
- Northern Wairoa Freshwater Improvement Project – a project aimed at reducing sediment and pathogens supported by the Governments Freshwater Improvement Fund.
- Northland Dune Lakes Strategic Water Quality Improvement project, aimed at reducing nutrient levels, pest impacts and improving biodiversity values (also supported by the Freshwater Improvement Fund)
- Otuihau-Hatea water quality improvement project – aimed at improving water quality at the iconic swimming spot Whangarei Falls (a three-year project co-funded by council and the government's Community Environment Fund).
- Implementation of the non-regulatory elements of priority catchment plans - most of which target sediment, pathogens and the ecological health of fresh waterbodies.

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<sup>1</sup> <http://www.knowledgeauckland.org.nz/search/?Keywords=%22KHSMS%22>

<sup>2</sup> See: <https://www.bing.com/search?q=MPI+Technical+Paper+No%3A+2016%2F67&src=IE-TopResult&FORM=IETR02&conversationid=>

- Farm water quality improvement plans – a free council service to assist landowners improve water quality.
- Restoration and enhancement of wetlands.
- Council’s Environment Fund which provides advice and financial assistance for landowners to improve water.

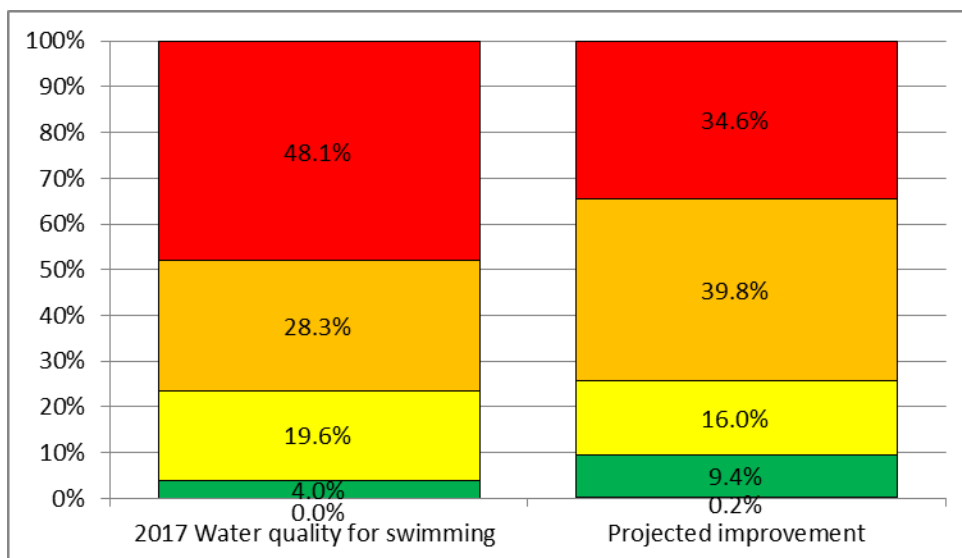
Council has also recently committed \$5.7 million into caring for our water over the next three years through the 2018-2028 Long Term Plan. The benefits of these operational programmes on water quality for swimming have not been estimated due to the complexity of such modelling. They are therefore not reflected in the regional targets (see below) but will provide additional water quality improvements and related aquatic biodiversity and cultural benefits.

## Regional targets

The council in conjunction with central government developed primary contact targets for Northland’s rivers. These targets do not represent council’s wider aspirations for improving water quality and are limited to the modelled effect of livestock exclusion rules on water quality for primary contact recreation (e.g. swimming) in larger rivers. The effect of livestock exclusion rules and efforts to manage cyanobacteria in lakes were not able to be modelled, therefore a narrative (rather than numeric) target is applied to lakes.

### Regional target for rivers

The regional targets for Northland based on the modelling of programmes underway, are 25.6% or more rivers (by length) that are fourth order or larger to be in the blue, green or yellow category in terms of *E. coli* by 2030<sup>3</sup> during normal flow conditions (that is 25.6% or more will meet the swimming standard). The modelled improvement also estimates a 13.5% reduction of rivers in the ‘poor / red’ category. See Figure 2 below.



Note: this target is based solely on the modelled effect of livestock exclusion rules on *E.coli* in Northland’s fourth order (and larger) rivers. It is likely that improvements in contact recreation in

<sup>3</sup> All livestock exclusion rules proposed in the Proposed Regional Plan are to be met by 2030 (Note: council decisions are yet to be notified).

the lower order streams will also occur as a high percentage of Northland's streams are small but would still be subject to livestock exclusion rules (the effect on lower order streams has not however been modelled).

The cost to the region to exclude livestock from waterways to meet this target has been estimated at \$4.86 million dollars per annum over 25 years (\$121.5 million)<sup>4</sup>. For more detail please see <http://www.mfe.govt.nz/publications/fresh-water/regional-information-setting-draft-targets-swimmable-lakes-and-rivers>

## Regional target for lakes

Risk of cyanobacteria exposure is reduced so that more than 66% of lakes with a perimeter greater than 1.5km are within the fair (swimmable) or better category by 2030.

## What next

As noted above council has yet to give effect to a range of water quality related aspects of the NPS-FM including setting objectives and limits for E.coli and implementation of Policy A5 (this is anticipated to occur around 2021 but depends somewhat on any changes to the NPS-FM). Policy A5 of the NPS-FM requires regional councils to identify in regional plans:

- Specified rivers and lakes and primary contact sites
- What improvements will be made to these waterbodies so they are suitable for primary contact more often (and the associated timeframes for improvement).
- How water quality will be maintained if swimming targets are met.

Council will progress the above through a future change to the regional plan which will include formal consultation and submissions processes to ensure people can have their say.

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<sup>4</sup> Progress on Swimmability Report: a joint taskforce of central and local government representatives 2018