



RECREATIONAL WATER QUALITY 2010–2011 SUMMER

Environmental Snapshot
July 2011

What this snapshot tells us

The snapshot gives a summary of our exposure to risk from microbiological contamination at the freshwater and coastal beaches we use for recreation.

This snapshot does not replace the site specific information available on [regional council websites](#), in particular longer-term ‘beach grades’, which can help beach users understand the likely health risk and contributing risk factors when making decisions about when and where to go to the beach.

Regional and district councils monitor recreational beaches during summer to identify and manage public health risks. The [guidelines for contact recreation](#) recommend councils prioritise resources to meet this aim. Councils use a number of programme designs to do this, for example representative coverage vs. highest risk beaches, or annually repeating vs. rotating/shifting monitoring beaches.

Monitoring beaches are identified by their use for recreation and presence of risk factors in the catchment. This means samples are not representative of environmental conditions in all freshwater or coastal beaches of a region or New Zealand, or how those conditions are changing over time. This does not allow us to draw conclusions about national or regional environmental conditions from this snapshot. Rather, the snapshot tells us about our exposure to risk in the places we choose for recreation.

Factors that can contribute to the risks

Both natural and human factors cause variations in microbiological contamination at recreational beaches. Dense bird and other wildlife populations, agricultural run-off, and stormwater or sewage discharges are all potential sources of contamination. Some beaches are nearly always affected by contamination sources and are often high risk. Others are only contaminated under certain conditions, such as after heavy rainfall or following stormwater or sewage discharges, and are high risk on these occasions.

The health risks

Water contaminated by faecal micro-organisms may pose a health hazard, particularly if swallowed. In most cases the health effects are minor and short-lived, such as gastric-intestinal illnesses with symptoms like diarrhoea or vomiting, and infections of the eye, ear, nose and throat. However, there are other potentially more harmful diseases such as giardiasis, cryptosporidiosis, campylobacteriosis and salmonellosis. Hepatitis A can be contracted from contaminants in the water and can lead to long-term health problems.

Anybody can be affected from exposure to contaminated water, but small children, the elderly, and people already weakened by illness or fatigue are more vulnerable.

How risk is monitored

Water samples are typically taken once a week over the summer (usually November to March) at freshwater and coastal beaches used by the public for recreation. The [guidelines for contact recreation](#) recommend 20 samples should be collected in a bathing season and 100 samples over five seasons. The samples are tested

for *Escherichia coli* (*E. coli*) in fresh water and enterococci in coastal waters, which may indicate the presence of disease-causing micro-organisms.

There are other reasons recreational beaches may be unsuitable for recreation (eg, algal blooms, unclear water), which are not covered by this snapshot, but many regional and district councils monitor and report these to the public.

How this snapshot assesses exposure to risk

Public health risk is higher when routine monitoring shows that bacteria levels are above the action threshold¹ from the [guidelines for contact recreation](#). Councils and health authorities increase their monitoring activities and inform the public that a health risk exists when bacteria levels are above this threshold.

Monitoring over several years helps indicate the ‘typical’ exposure to risk at a recreational beach. This snapshot assesses the risk exposure over the 2010–11 summer and compares that with the typical risk exposure at recreational beaches.

We categorise beaches by how often the monitoring results are above or below the action threshold. Beaches which have:

- more than 95 per cent of samples below the threshold are almost always low risk
- between 75 and 95 per cent of samples below the threshold are generally low risk but occasionally high risk
- less than 75 per cent of samples below the threshold are often high risk. This means that more than five samples over a 20 week summer period, or more than 25 samples over a five-year period, had shown high risk bacteria levels.

The overall picture in the 2010–11 summer

Over the 2010–11 summer, 87 per cent of monitored freshwater beaches and 98 per cent of monitored coastal beaches generally posed a low public health risk, the same as the typical exposure to risk at monitored beaches (Figures 1 and 2).

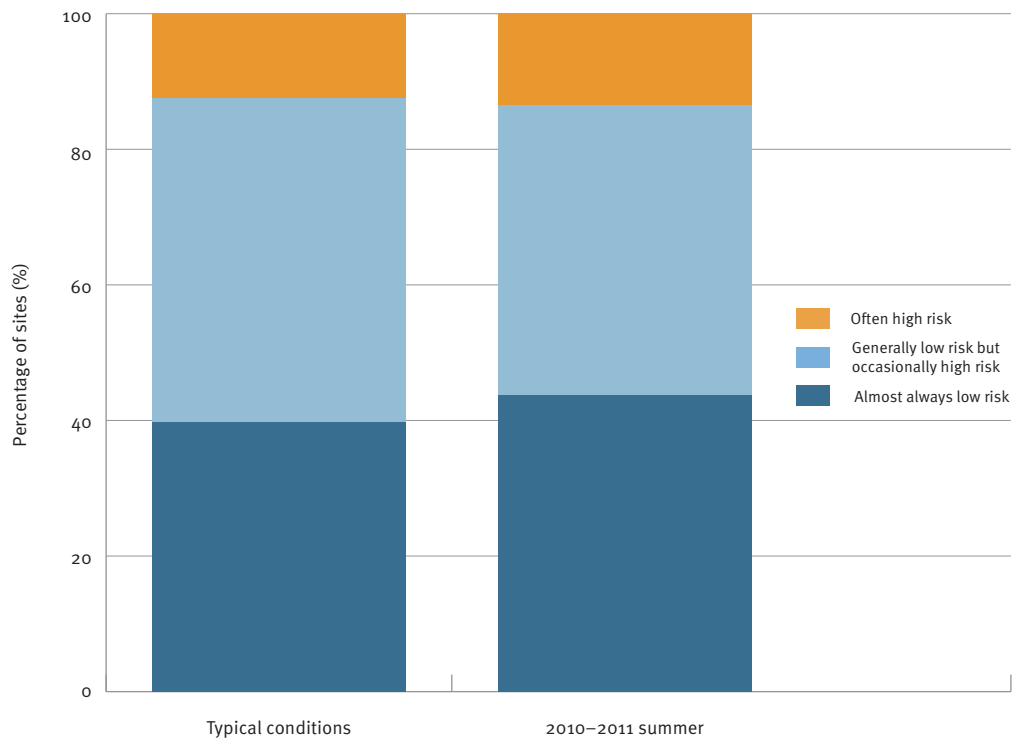
Half of these generally low risk freshwater beaches, and 39 per cent of the generally low risk coastal beaches occasionally experienced high risk conditions, following events such as heavy rainfall or stormwater or sewage discharges. This is fewer ‘occasional risk’ freshwater beaches and greater ‘occasional risk’ coastal beaches than usual.

Thirteen per cent of freshwater sites and two per cent of coastal sites often had a high risk, which is the same as the typical risk exposure at monitored sites. People were exposing themselves to high risk of illness when using these beaches for recreation.

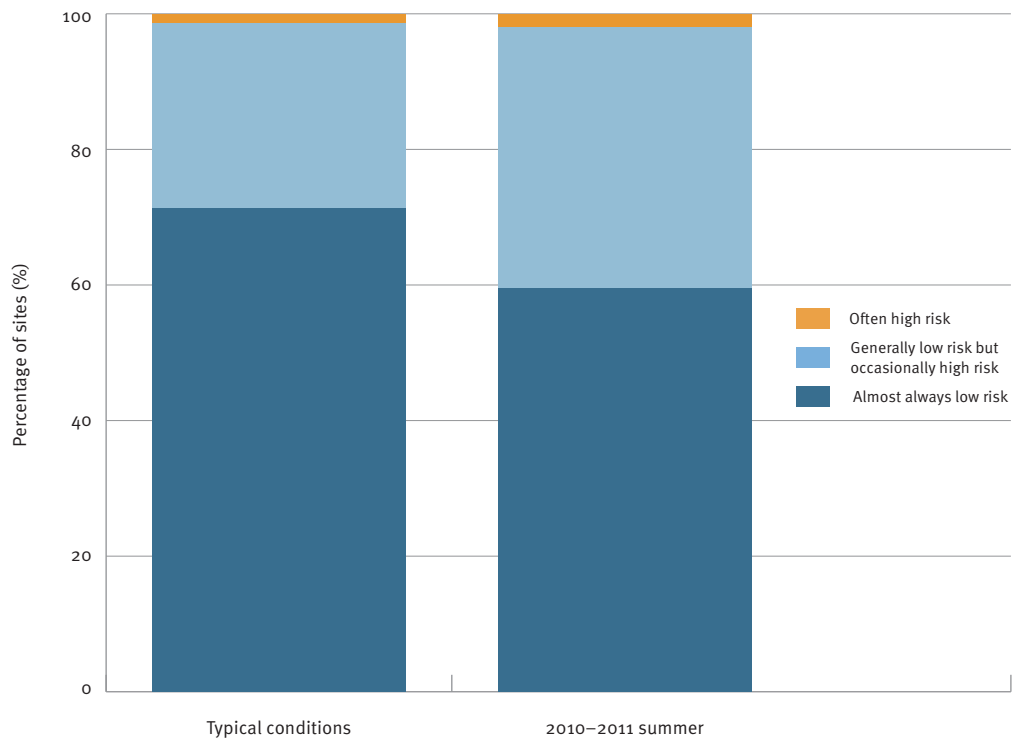
Summer 2010–11 was extremely wet for many regions of New Zealand, with summer rainfall totals over 20 per cent more than normal in some places. There were also several large storm events during December and January. This is likely to have contributed to some coastal sites having more ‘occasionally high risk’ conditions than usual. Fresh water beaches are generally more sensitive to contamination than coastal beaches. This is because the large volume of water at coastal spots can dilute and disperse any contaminants more quickly than at freshwater sites.

¹ The ‘action threshold’ is the level above which water poses a high health risk to beach users. For coastal waters this threshold is 280 enterococci per 100 millilitres of water. For freshwater the threshold is 550 *E. coli* per 100 millilitres of water.

+ FIGURE 1
EXPOSURE TO RISK AT MONITORED RECREATIONAL FRESHWATER BEACHES,
TYPICAL CONDITIONS AND 2010–11 SUMMER



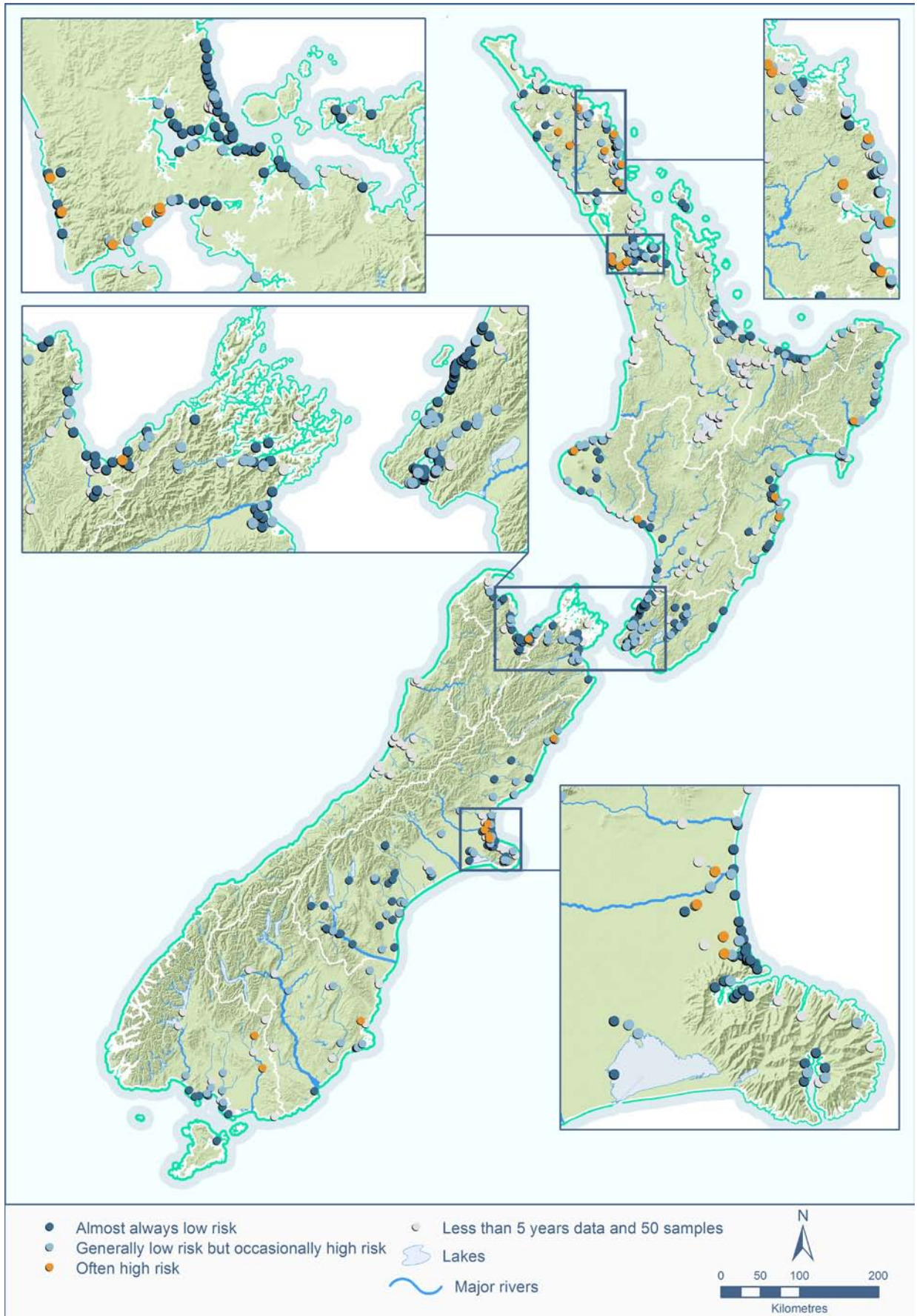
+ FIGURE 2
EXPOSURE TO RISK AT MONITORED RECREATIONAL COASTAL BEACHES,
TYPICAL CONDITIONS AND 2010–11 SUMMER



Note for Figures 1 and 2: 2010–11 data is based on sites with at least 10 samples taken this year. Typical risk exposure is derived from the latest five years of monitoring at beaches which have at least five years data and 50 samples collected within the five-year period. Data is collected by regional and district councils and collated by the Ministry for the Environment.

+ FIGURE 3

TYPICAL EXPOSURE TO HEALTH RISK AT MONITORED BEACHES AROUND NEW ZEALAND



Note: Typical risk exposure is derived from the latest five years of monitoring at beaches which have at least five years data and 50 samples collected within the five-year period. Data is collected by regional and district councils and collated by the Ministry for the Environment.



FOR MORE INFORMATION:

- about the state of New Zealand's environment see: www.mfe.govt.nz/environmental-reporting
- about the Ministry for the Environment's reporting on New Zealand's recreational water quality contact: brent.king@mfe.govt.nz.



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