



Nitrate-nitrogen trends, 1989-2013

Title	Nitrate-nitrogen trends, 1989-2013
Creator	Environmental Reporting, Ministry for the Environment and Statistics New Zealand
Date	2015-10-21
Description	<p>Small amounts of nitrogen are a natural component of healthy rivers. Nitrogen is transferred from land to water and is cycled through different forms, which can have different effects. Moderate concentrations of nitrate can cause weeds and algae to grow too fast. High concentrations of ammoniacal and nitrate nitrogen can be toxic to fish and other aquatic animals. This dataset relates to the "River water quality trends: nitrogen" measure on the Environmental Indicators, Te taiao Aotearoa website.</p>
Source	<p>Source: National Institute of Water and Atmospheric Research; regional councils Method: Nitrogen is measured in laboratories. Samples are collected from the river at fixed locations once a month, and sent to a laboratory for chemical analysis. NIWA have measured monthly nitrogen consistently at 77 sites along 35 major rivers between 1989 and 2013 enabling changes over time to be calculated. These 35 rivers drain about 50 percent of New Zealand's land area. Trends over shorter time periods can be assessed using regional council data. However, these monitored sites are not representative of the national river network because they tend to be located in more problematic areas. Nitrogen occurs as several forms in the environment. The following forms are reported: - Total Nitrogen (TN) is the sum of all nitrogen found in a river water sample, including organic nitrogen from plant tissue. - Nitrate is highly soluble (dissolves in water) and so can readily be used by plants and algae to help them grow. Because of this solubility it can also leach through soils very easily, particularly where soils are sandy or after heavy rainfall (McDowell et al 2008). Sources include excessive application of inorganic fertilizer, stock urine, septic tanks and leaking sewage systems. It is measured and reported as the elemental nitrogen equivalent, described as nitrate-nitrogen (NO₃-N). - Ammoniacal nitrogen can be toxic at moderate to high concentrations. Elevated quantities in waterways are primarily from direct pollutant discharges such as untreated effluent. We are unable to reliably estimate trends in ammonia concentration prior to 1995 due to a subsequent change in laboratory procedures. Ammoniacal nitrogen includes readily available forms of ammonia and ammonium. These are collectively reported as the elemental nitrogen equivalent; ammoniacal nitrogen (NH₄-N). The data was flow-adjusted before trend analysis, to remove the influence of variation in stream flow. Flow adjustment means the reported trends better reflect for the effects of controlling factors other than flow. The accuracy of the data source is of high quality. Reference: McDowell, RW, Houlbrooke, DJ, Muirhead, RW, Müller, K, Shepherd, M, & Cuttle, SP (2008). Grazed pastures and surface water quality. New York: Nova Science Publishers.</p>
Coverage	-46.3894482934 167.534694771 -35.2744930255 177.881584208
Identifier	https://data.mfe.govt.nz/layer/53319-nitratenitrogen-trends-19892013/
Language	eng
Subject	New Zealand
Subject	WATER
Subject	

WATER-Quality

Subject

environment