



## Total phosphorus trend, 1989–2013

### Title

Total phosphorus trend, 1989–2013

### Creator

Environmental Reporting, Ministry for the Environment and Statistics New Zealand

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### Description

"Phosphorus is an essential nutrient for plant and animal life. Total phosphorus (TP) includes all concentrations in a sample, whether dissolved, in solid form or bound to sediment in the river. Dissolved reactive phosphorus (DRP) is the portion which is dissolved and can immediately support plant and algae growth. Excess phosphorus in our rivers can cause large amounts of (sometimes toxic) algae to grow, which can harm river health and reduce the recreational and aesthetic value of rivers. This dataset relates to the "River water quality trends: phosphorus" measure on the Environmental Indicators, Te taiao "

### Source

Source: National Institute of Water and Atmospheric Research Method: "In New Zealand, most phosphorus enters our rivers and lakes attached to eroded soil (Elliot et al 2005). While bound to sediment, it is not immediately available as a nutrient for plants and algae. However, over time and in the right conditions bound phosphorus can gradually dissolve, stimulating growth of aquatic algae for many years (Ekholm 1994). Two forms of phosphorus are reported on: – Total Phosphorus, which accounts for all the phosphorus in our rivers regardless of the form it is in. This includes the portion which is dissolved and available to plants and algae now, and that which is bound to soil or sediment and may become available in the future. – Dissolved reactive phosphorus, indicates how much phosphorus is immediately available to support algae and plant growth. Samples for phosphorus analysis are collected from the river at fixed locations, and sent to a laboratory for chemical analysis. NIWA have measured monthly phosphorus 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. 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: Elliott, AH, Alexander, RB, Schwartz, GE, Shanker, U, Sukias, JPS, & McBride, GB (2005). Estimation of nutrient sources and transport for New Zealand using the hybrid mechanistic-statistical model SPARROW. *Journal of Hydrology (NZ)*, 44(1), 1–27."

### Coverage

-46.3894482934 167.534694771 -35.2744930255 177.881584208

### Identifier

<https://data.mfe.govt.nz/layer/52738-total-phosphorus-trend-19892013/>

Language

| eng

Subject

| environment

Subject

| New Zealand

Subject

| WATER

Subject

| WATER-Quality