Ministry for the Environment
Manatū Mō Te Taiao

Lake water quality, 2009–13

Title
Lake water quality, 2009–13
Creator
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Date
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Description
"The Lake Trophic Level Index (TLI) characterises the life supporting capacity of a lake based on nutrient enrichment. In general, the higher the TLI score, the poorer the water quality in the lake. Lakes with extremely poor quality are rarely suitable for recreation and provide poor quality habitat for aquatic species. Care should be taken when interpreting these results. Monitored lakes consist of about 4 percent of all New Zealand lakes, and programmes may focus on those that have poor water quality or are at risk due to the type of land use in their catchment. After checking for data consistency, the lakes considered suitable for national comparison are sparsely and unevenly distributed, with gaps in the Manawatu, Taranaki, Tasman, Marlborough, Otago, and West Coast regions. The lakes considered in the analysis are located mainly in Northland, Bay of Plenty, Hawke’s Bay, and Canterbury. This dataset relates to the ""Lake water quality: trophic level index"" measure on the Environmental Indicators, Te taiao Aotearoa website. "
Source
Source: National Institute of Water and Atmospheric Research Method: "The Trophic Level Index (TLI) has been calculated using three separate water quality measurements – total nitrogen, total phosphorus, and chlorophyll–a. Total nitrogen and total phosphorus are nutrients. Large amounts encourage the growth of algae and weed species which can lead to poor water quality. Chlorophyll–a is the green colour in plants and its measurement indicates how much algae the lake has. TLI scores less than three indicate low levels of nutrients and algae which is characteristic of clear or blue lakes. TLI scores greater than four indicate eutrophic conditions with high amounts of nutrients and algae. Large shallows may naturally score higher. There are also other important characteristics of lake condition such as the types of fish and aquatic plants present which are not described by the TLI. The TLI is used to place lakes into nutrient–enrichment categories, known as trophic states (Burns et al, 2000): - Microtrophic (TLI < 2) lakes are very clean, and often have snow or glacial sources (eg Lake Pukaki in Canterbury). - Oligotrophic (TLI 2–3) lakes are clear and blue, with low levels of nutrients and algae (eg, Lake Rotoma in the Bay of Plenty). - Mesotrophic (TLI 3–4) lakes have moderate levels of nutrients and algae (eg, Lake Rerewhakaaitu in the Bay of Plenty). - Eutrophic (TLI 4–5) lakes are green and murky, with higher amounts of nutrients and algae (eg, Lake Rotoroa in Northland). - Supertrophic or Hypertrophic (TLI > 5) lakes have extremely high levels of phosphorus and nitrogen are overly fertile. They are rarely suitable for recreation, and habitat for desirable aquatic species is limited (eg, Lake Forsyth in Canterbury). Care should be taken when interpreting these results. Monitored lakes consist of approximately 4 percent of all lakes, and programmes may focus on those that have poor water quality, or are at risk due to land use in their catchment. The lakes included in this analysis, after filtering for continuity, are sparsely and unevenly distributed, with gaps in the Manawatu, Taranaki, Tasman, Marlborough, Otago and West Coast regions. The accuracy of the data source is of medium quality. Reference: Burns, N, Bryers, G, & Bowman, E (2000). Protocols for monitoring trophic levels of New Zealand lakes and reservoirs. Available from www.mfe.govt.nz."
Coverage
-44.6998796825 169.849371717 -34.5860717112 177.169465379
Identifier
https://data.mfe.govt.nz/layer/53310-lake-water-quality-200913/
Language
eng
Subject
New Zealand
Subject
WATER
Subject
WATER-Quality
Subject
environment