

The National Lakes Assessment (NLA) 2012



Lakes and reservoirs provide many environmental, economic, and public health benefits. We use lakes for drinking water, energy production, food and recreation. Fish, birds and other wildlife rely on them for habitat and survival. In the [National Lakes Assessment](#) (NLA), the U.S. Environmental Protection Agency (EPA) and its partners surveyed a wide array of lakes representative of those found in the U.S., from small ponds and prairie potholes to large lakes and reservoirs. The NLA is part of the National Aquatic Resource Surveys, a series of statistically-based assessments designed to provide the public and decision-makers with nationally consistent and representative information on the condition of the nation's waters.

What is the condition of lakes across the country?

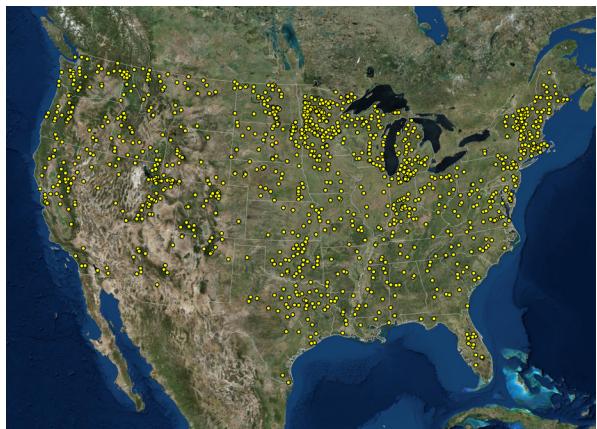
>35% **Nutrient pollution:** Nutrient pollution is a widespread problem across the country. About 1 in 3 lakes (35%) have excess nitrogen and 2 out of 5 lakes (40%) have excess phosphorus. Too much of the nutrients nitrogen or phosphorus can contribute to algal blooms, low levels of oxygen, and harm to aquatic life.

<1% **Microcystin:** An algal toxin, microcystin, is detected in 39% of lakes, but concentrations rarely reach moderate or high levels of concern established by the World Health Organization (<1% of lakes).

<1% **Atrazine:** The herbicide atrazine is detected in 30% of lakes, but concentrations rarely reach the EPA level of concern for plants in freshwaters (<1% of lakes).

31% **Biological condition:** We find that 31% of lakes have degraded benthic macroinvertebrate communities, which include small aquatic creatures like snails and mayflies. Analyses show an association between nutrients and biological condition. Lakes with high levels of phosphorus are 2.2 times as likely to have a degraded benthic macroinvertebrate community and lakes with high levels of nitrogen are 1.6 times as likely to have a degraded benthic macroinvertebrate community.

NLA 2012 Sampled Sites



The NLA indicates that nutrient pollution is common in U.S. lakes. Compared to other measures, nutrient pollution is the most widespread stressor measured in the NLA and can contribute to blooms and affect recreational opportunities in lakes.



The National Lakes Assessment (NLA) 2012

Are conditions getting better or worse?

A comparison of the 2007 and 2012 National Lakes Assessments indicates little change between surveys. In most cases, the percentage of lakes in degraded biological, chemical and physical condition did not change over this five year period, with a few notable exceptions.

 **Lake drawdown:** Drawdown of lake water levels, whether by natural process or through direct manipulation, can adversely affect physical habitat conditions. Between 2007 and 2012, the NLA shows improving conditions with *13% fewer lakes in the most disturbed condition*.

 **Cyanobacteria:** The NLA measured the density of cyanobacteria cells, which can produce cyanotoxins, as an indicator of toxic exposure risk. The analysis reveals worsening conditions, with *8.3% more lakes in the most disturbed condition in 2012 than in 2007*.

 **Microcystin:** The NLA shows a *9.5% increase in the detection of an algal toxin, microcystin*. However, concentrations of this algal toxin remain low and rarely exceeds World Health Organization recreational levels of concern (<1% of the population) in both assessments.

Phosphorus: In addition, a supplementary analysis of the NLA data finds that phosphorus has increased in lakes that were previously low in phosphorus. In 2012, there were 18.2% fewer low-phosphorus lakes than in 2007.

What are we doing to address problems?

The NLA indicates that our lakes are under stress. In particular, the NLA suggests a need to reduce nutrient pollution to improve lake conditions. EPA is working on many fronts to reduce the severity, extent, and impacts of nutrient pollution in our nation's lakes and other waters. These efforts involve overseeing regulatory programs, conducting outreach and engaging partners, providing technical and programmatic support to states, financing nutrient reduction activities, and conducting research and development. For more information on what EPA is doing to reduce nutrient pollution, visit epa.gov/nutrientpollution.

The NLA offers a unique opportunity to frame discussions and plan strategies for the protection and restoration of lakes across the United States. Additional information from the NLA is available online at epa.gov/national-aquatic-resource-surveys/nla. Website visitors can explore NLA results with interactive dashboards, find assessments of regional conditions, examine differences between natural lakes and reservoirs, and more.

