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## EARTHTALK FOR YOUNG READERS

### Week of 12/5/2004

From Stacy Clark, Youth Editor of E/The Environmental Magazine

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### Dear EarthTalk, Young Readers: What is acid rain, and why is it hurting the lake we live on?

—Maddie C., Lake George, New York

Maddie, acid rain is created when air pollution from electrical power plants, cars, and trucks mixes with water vapor in the air and returns to the Earth as moisture in the form of rain, snow, sleet or mist.

Wherever air pollution contains acidic compounds (such as sulfur dioxide and nitrogen oxide), the moisture returning to the Earth is acidified too. It is this acidified moisture that then can “contaminate” land and water.

Many parts of the Northeast, including Lake George, suffer as a result of acidified moisture, or precipitation. Normal precipitation (without pollution) is slightly acidic. But the acidic precipitation that is common in your part of the country is much more acidic, typically registering a 5.0 or lower on the pH scale—a scale that indicates acid strength.

On the pH scale, 0 is most acidic (least alkaline), and pH 14 is least acidic (most alkaline). Vinegar (an acid) has a pH of 2.2. Ammonia (an alkaline substance) has a pH of 11. Anything with a pH of 7 is considered to be neutral—neither acid nor alkaline.

When lakes or rivers are chemically changed by acidic precipitation, it can be very difficult for plants and animals to survive. Certain species of plants and animals may disappear altogether.

Lake George is particularly susceptible to acidic precipitation because the rock that makes up so much of this region is “hard” rock, such as granite, which cannot balance or neutralize acid naturally. Soil and water systems in areas where limestone and sandstone rocks are located contain alkaline “carbonates,” which do help neutralize acid precipitation. Many western U.S. states feature these types of alkaline systems.

Changing our habits can help reduce the air pollution responsible for acid precipitation. By using less electricity and



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- \*Something is fishy  
Mercury is a toxic contaminant that is showing up in dangerously high concentrations in the fish we eat, yet the FDA isn't protecting us!? **Take action!**

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walking instead of driving, we reduce the amount of fossil fuels we use, and this reduces the air emissions that cause acid rain!

**GOT AN ENVIRONMENTAL QUESTION?** Send it to: EARTH TALK for YOUNG READERS, c/o E/The Environmental Magazine, P.O. Box 5098, Westport, CT 06881; submit your question at: [www.emagazine.com](http://www.emagazine.com); or e-mail us at: [stacy@emagazine.com](mailto:stacy@emagazine.com).

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