ENVIRONMENTAL
Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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Acid Rain

Acid rain is a commonly used term for acid deposition, which includes rain, snow, sleet, hail, fog, and dry particles that fall from the sky. Uncontaminated precipitation is naturally acidic. Water contains atmospheric gases as well as carbon dioxide, and when the carbon dioxide dissolves it forms carbonic acid, which makes the pH of normal rain about a 5.6 on the pH scale.

What Causes Acid Rain?

Acid rain is caused by the release of sulfur dioxide and nitrogen oxides into the atmosphere, where they are converted into sulfuric and nitric acid respectively. Both sulfur and nitrogen oxides are released to the atmosphere by the burning of fossil fuels. In the United States, about two-thirds of all sulfur dioxide and one-quarter of all nitrogen oxide comes from electric power generation that relies on burning fossil fuels like coal.

What is the Effect of Acid Rain on New Hampshire Lakes?

Acid rain increases the acidity of lake water. This causes changes in the assemblages of plant and animals that occur naturally in the lake. An acid-stressed lake is typically very clear, with filamentous algae along the bottom and reduced fish population. Acid rain can leach copper, aluminum, and other heavy metals out of the soil and into runoff and drinking water. This process in turn puts more harmful materials in the water and soil, thus reducing the populations of organisms in the waterbody or soil. Some lakes in New Hampshire have reached the point where fish are unable to survive due to the acidity of the water.

New Hampshire's lakes are particularly vulnerable to acid rain because of their naturally low buffering capacity, caused by New Hampshire's well known granite. The lakes lack the vital elements like calcium that counteract or neutralize the acid rain that causes the lowered buffering capacity.

How Can We Reduce Acid Rain?

Conserving energy to reduce the need for fossil fuel burning will go a long way to reducing acid disposition. Here are some tips for reducing your energy needs:

- Turn off lights, computers, and other appliances when not in use.
- Use energy efficient lighting, air conditioners, heaters, refrigerators, washing machines, etc.
- Only use electric appliances when you need them.
- Keep your thermostat at 68 F in the winter and 72 F in the summer. Conserve more energy at night and when you're away from home.
- Insulate your home.
- Carpool, use public transportation, or better yet, walk or bicycle whenever possible.
- Buy vehicles with low nitrogen oxide emissions, and keep vehicles well maintained.