

# Nature, too, can pollute

WASHINGTON, D.C. — Warning: Nature may be hazardous to your health. Sometimes on its own it can even violate federal pollution standards.

A natural accumulation of mercury has contaminated fish in a Utah lake. Acidic runoff has left some Appalachian streams lifeless. Unusually high ozone levels have been detected in rural air. But so far there appears to be no evidence of "killer trees."

When it comes to polluting the environment, nature has to take second place behind the combined forces of man, industry, and the automobile. Across the country, however, scientists recently have begun to try to assess nature's role in the contamination of air, water, and soil.

"We are looking at things we've never looked at before, partly because of the continuing problem of carcinogens," explained Dr. Clarence Lance, nation research program leader for environmental quality at the Department of Agriculture.

### Difficult to Measure

In trying to sort out the sources of pollution, man is finding it difficult to take a measure of nature. Some scientists believe that nature in certain cases contributes to pollution, but they still don't know how much.

Alone, they generally agree, nature does not appear to have done too much damage so far, except in some isolated instances. But when the chemicals it naturally releases combine with what man puts into the air, for example, the results under certain circumstances can be harmful enough to affect living things.

"Even if the entire country were covered with forests, the trees by themselves could not produce ozone," said Dr. Joseph Bufalini, an environmental sciences research chief with the Environmental Protection Agency. "But add emissions from automobiles or power plants or herbicides, and then the hydrocarbons the trees naturally

release can act as an agent to produce the harmful ozone."

EPA recently authorized a \$114,000 research project to study how certain kinds of trees contribute to the formation of ozone, an irritating form of oxygen. It is a major component of smog.

The idea of delving into "natural" or "background" pollution — to find out what contaminants, if any, are already there — is a long-range and controversial issue.

"Nature must be taken into consideration if we are to know how hazardous pollutants are building up in the United States," Bufalini said. "There has to be a starting point to properly assess long-range pollution trends."

### Blaming It on Nature

Industry also has taken an interest in discovering the extent of nature's own pollution in an attempt to turn attention away from the industrial contribution. In some already heavily polluted

regions, for example, industry officials have actually calculated the number of trees that could be cut down to offset the anticipated additional pollution from a proposed new industrial plant.

And on the campaign trail last year, Ronald Reagan added fuel to the fire by pointing out the "polluting" powers of trees and volcanoes. Within the scientific world, there is some disagreement over whether something that is naturally present in the environment can legitimately be labeled a pollutant.

What are some of the possible natural causes of pollution? In the air, hydrocarbons, ozone, radiation, and, particularly in marshland, sulfur compounds. Some scientists, for example, are attempting to measure the amount of ozone that may be seeping down from the stratosphere, where it is a necessary shield of the sun's ultraviolet rays, into the lower atmosphere, where it is harmful.

In water, the steady stream of sediment from natural runoff, metals such as mercury and copper, and salt. Metals and salt are more commonly found in rivers and ground water in the West. Along the coast there is natural seepage of oil from the ocean floor. In soil, there can be deposits of salt and metals such as lead, calcium, iron, and uranium.

### Volcanoes and Pollen

And there are the more dramatic examples: sulfur dioxide spewed into the air by volcanic eruptions like Mount St. Helens; thermal and chemical contamination from the many forest fires that are touched off by lightning; the well-known haze in the Great Smoky Mountains that may be caused by the trees themselves; and the widespread proliferation of pollen.

Dr. William L. Graf, an associate professor of geography at Arizona State University, is investigating what he calls "a classic case of natural pollution":

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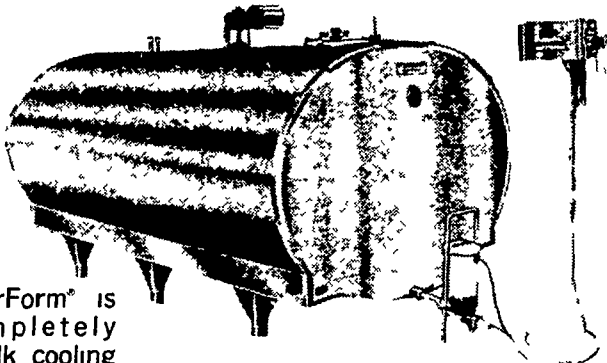
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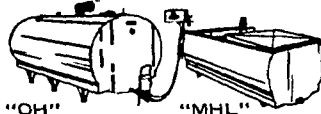
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