



# ACID RAIN



National Atmospheric  
Deposition Program



# What is acid rain?

Rain, snow, fog, or hail that carries pollutants (acids) from the air to the ground.



# More About Acid Rain

Acid rain:

- Changes with the weather and seasons
- Changes within short distances
- Can carry pollutants long distances, even to other countries





# Natural Causes of Acid Rain

- Lightning
- Volcanoes
- Rotting plants and grasses



# Man-Made Causes of Acid Rain

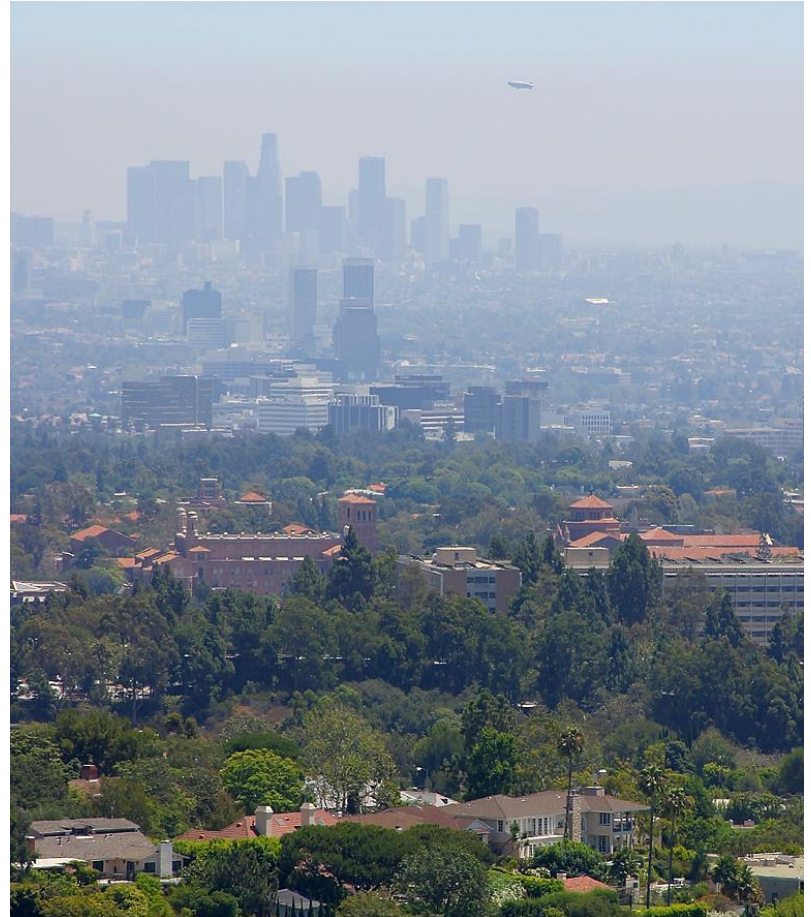
- Exhaust from cars, trucks, and buses
- Power plants that burn coal
- Pollution from industry



# Location of Acid Rain

Highest in areas with

- Large cities
- Large population
- Heavy car traffic



# Acid Rain Can Be Harmful

## ***Forests & Lakes:***

- Leaves and trees become damaged
- Trees will more likely have a disease or insect problem
- Certain types of fish may die



## ***Plants & Crops:***

- Plant roots can't grow properly
- Soils lose nutrients that are healthy for plants





# Acid Rain Can Be Harmful

## ***Humans:***

- People can have respiratory problems when they inhale small droplets (fog)
- Lead and copper from rusty pipes can dissolve into drinking water

## ***Man-Made Materials:***

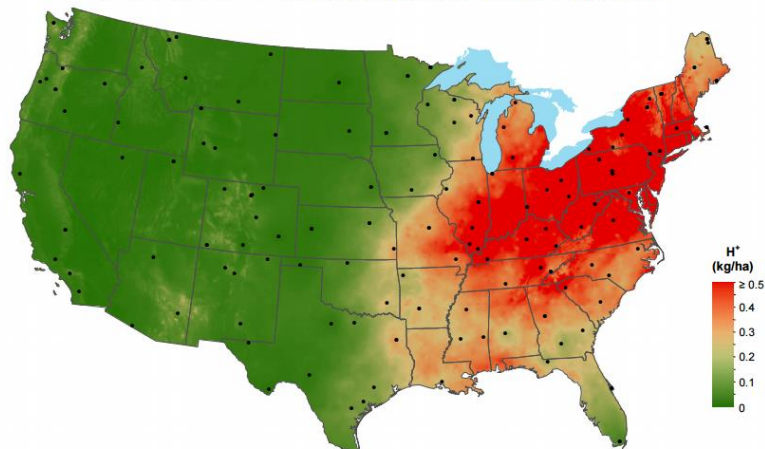
- Metal structures and cars become corroded
- Limestone buildings, tombstones, statues, and monuments wear down more quickly





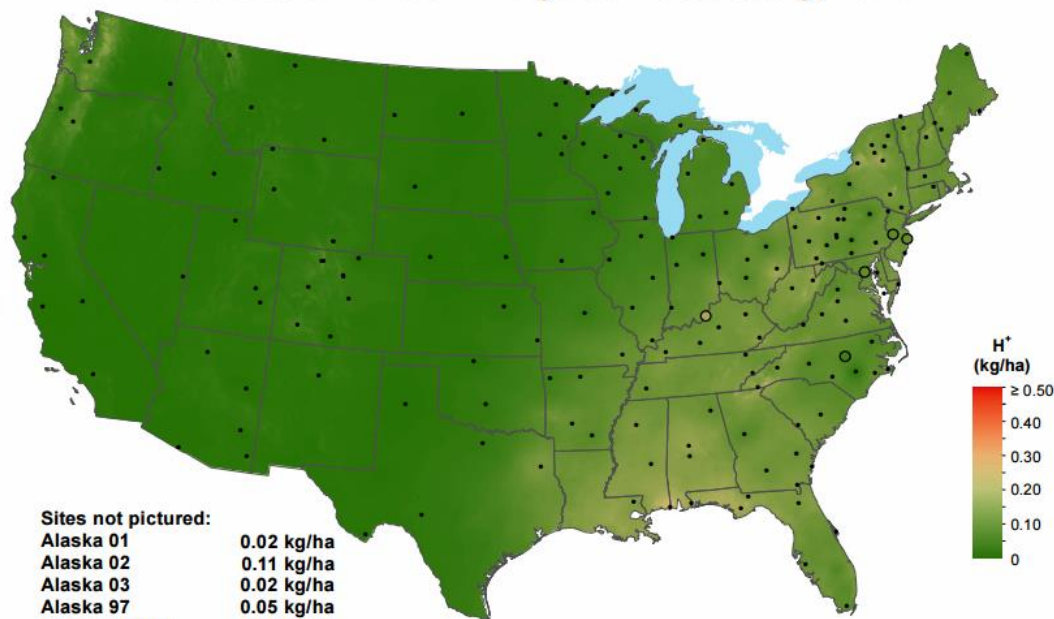
# Is Acid Rain Still a Problem?

Hydrogen ion wet deposition from measurements made at the Central Analytical Laboratory, 1985



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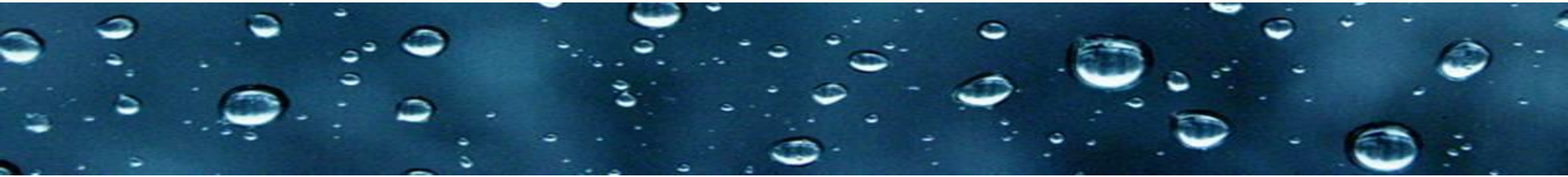
Hydrogen ion wet deposition from measurements made at the Central Analytical Laboratory, 2013



**Sites not pictured:**

Alaska 01	0.02 kg/ha
Alaska 02	0.11 kg/ha
Alaska 03	0.02 kg/ha
Alaska 97	0.05 kg/ha
Puerto Rico 20	0.26 kg/ha
British Columbia 22	0.96 kg/ha
Saskatchewan 21	0.01 kg/ha

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information here



# National Atmospheric Deposition Program

For more information about this presentation or the NADP, please contact:

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- The NADP is National Research Support Project-3: A Long-Term Monitoring Program in Support of Research on the Effects of Atmospheric Chemical Deposition. More than 250 sponsors support the NADP, including private companies and other nongovernmental organizations, universities, local and state government agencies, State Agricultural Experiment Stations, national laboratories, Native American organizations, Canadian government agencies, the National Oceanic and Atmospheric Administration, the Environmental Protection Agency, the Tennessee Valley Authority, the U.S. Geological Survey, the National Park Service, the U.S. Fish & Wildlife Service, the Bureau of Land Management, the U.S. Department of Agriculture - Forest Service, and the U.S. Department of Agriculture - National Institute of Food and Agriculture, under agreement no. 2008-39134-19508. Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the sponsors or the Wisconsin state :Laboratory of Hygiene.*