

the
ACID RAIN
story

Before Controls

After Controls

NETL reduced the cost of SO_x Controls

The National Energy Technology Laboratory (NETL) in the 1980s - 90s significantly contributed to cost reductions of SO_x controls for power plants such that it was cost effective to control emissions. This enabled EPA to implement an Acid rain program as part of the Clean air act.

1

Acid Rain is caused by emissions of sulfur dioxide (SO_x) and nitrogen oxide (NO_x), which react with water molecules in the atmosphere, producing acids.



It lowers pH in waterways, killing marine organisms.

5
critical pH level for survival



2

Pollution Control technology is now installed on all applicable power plants of the U.S. coal fleet for SO_x & NO_x emissions

Without Controls

6.6 GW

With Controls

268 GW

= 98%

of all coal fired power plants!

3

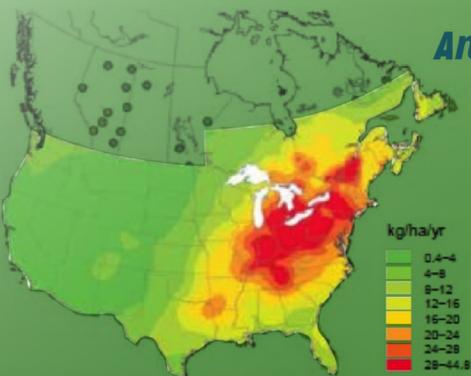
Damage to man-made structures like buildings and statues is evident with signs of corrosion and erosion.



The Adirondacks forest has been impacted by acid rain. It makes trees vulnerable to disease, extreme weather, and insects.

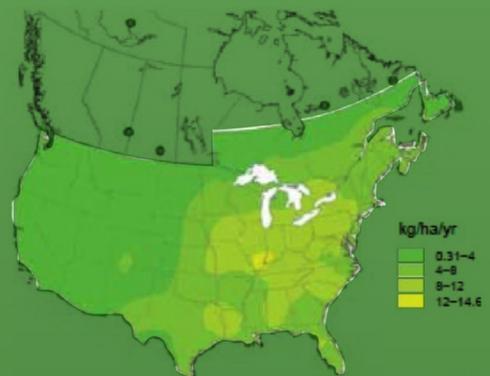
4

Annual Wet Sulfate Deposition



2010

1990



5

Under Control

Power plant emissions before and after pollution control installation on the 359 MW H.A. Wagner Unit 3

| Year: | NO _x Tons: |
|-------|-----------------------|
| 2016 | 395 |
| 1999 | 3,321 |
| 1998 | 13,394 |

Since 1970,

The United States has reduced

NO_x
88%

SO_x
82%

essentially eliminating acid rain!