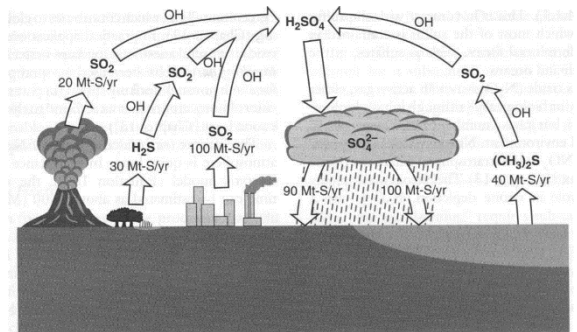
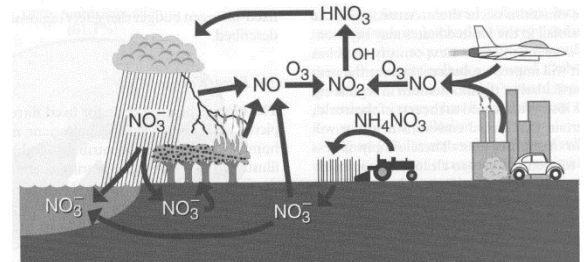


## Pollution and Acid Rain in the Midwest

(and what it means for the Great Lakes)

### Sources of Pollution:

- Agriculture ( $\text{NH}_4\text{NO}_3$ )
  - We fertilize our crops and the fertilizer runs off into our water resources
    - \*side note\* Livestock manure is a large contributor of Phosphorous in our water
- Transportation ( $\text{NO}$ )
  - “stuff” that comes out of cars and planes
- Burning of coal ( $\text{SO}_2$ )
  - Missouri, Illinois, Indiana, and Ohio are in the top ten states for coal consumption
  - In a 30 mile radius around Evansville, Indiana, there are seven



### Effects:

- gases are emitted into the atmosphere and they react with the water present
- which makes salts of these acids to precipitate out in wet deposition known as acid rain or dry deposition.
- pollutants can runoff into lakes or oceans and increase the acidity.
- can cause life to die

### What this could mean for the Great Lakes:

- Freshwater sources could potentially be affected just as badly if not worse by acidification of the water.
- The Great Lakes have already seen a 0.6 reduction in pH
- Lakes are smaller so more easily affected by outside factors where the ocean is so massive it mostly operates on an internal system
- The Great Lakes account for 20% of the Earth’s freshwater
  - A resource we all know is highly threatened
- Effects would start at the bottom of the food chain and work its way up until it affects fish and bigger organisms
- Pollution of the Great Lakes would not be localized. All connecting groundwater would be contaminated as well

### We actually have no idea what will happen:

- Scientists agree that there should be more research into the acidification of the Great Lakes.

- NOAA called for research to begin in 2010 but it hasn't been started(??)

Fun Fact: 8 northeastern states sued the EPA over air pollution from the Midwest. (began during Obama administration)

- They want EPA to enforce stricter regulations on emissions from these big power plants because the pollution is getting blown downwind(east) towards them.
- Their goal was to get 9 states added to the "Ozone Transport Region" which enforces stricter standards
- December 26, 2017 it is decided that the 9 states will NOT be added to this region
  - Guess why?
    - "EPA Chief Scott Pruitt declined to add the states"

### Sources

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