

Air pollution

- Impacts
 - **Acid rain**
 - Regional effects
 - Caused by airborne pollutants returning to Earth as rain, snow etc
 - **Volatile Organic Compounds (VOCs)**
 - Contribute to harmful ground level ozone
 - **Local lung disease**
 - Asthma, lung cancer etc from particulates and gases
 - **Ozone Depleting Chemicals (ODCs)**
 - Damage earth's protective layer
 - UV causing skin cancer, damage to plants etc.

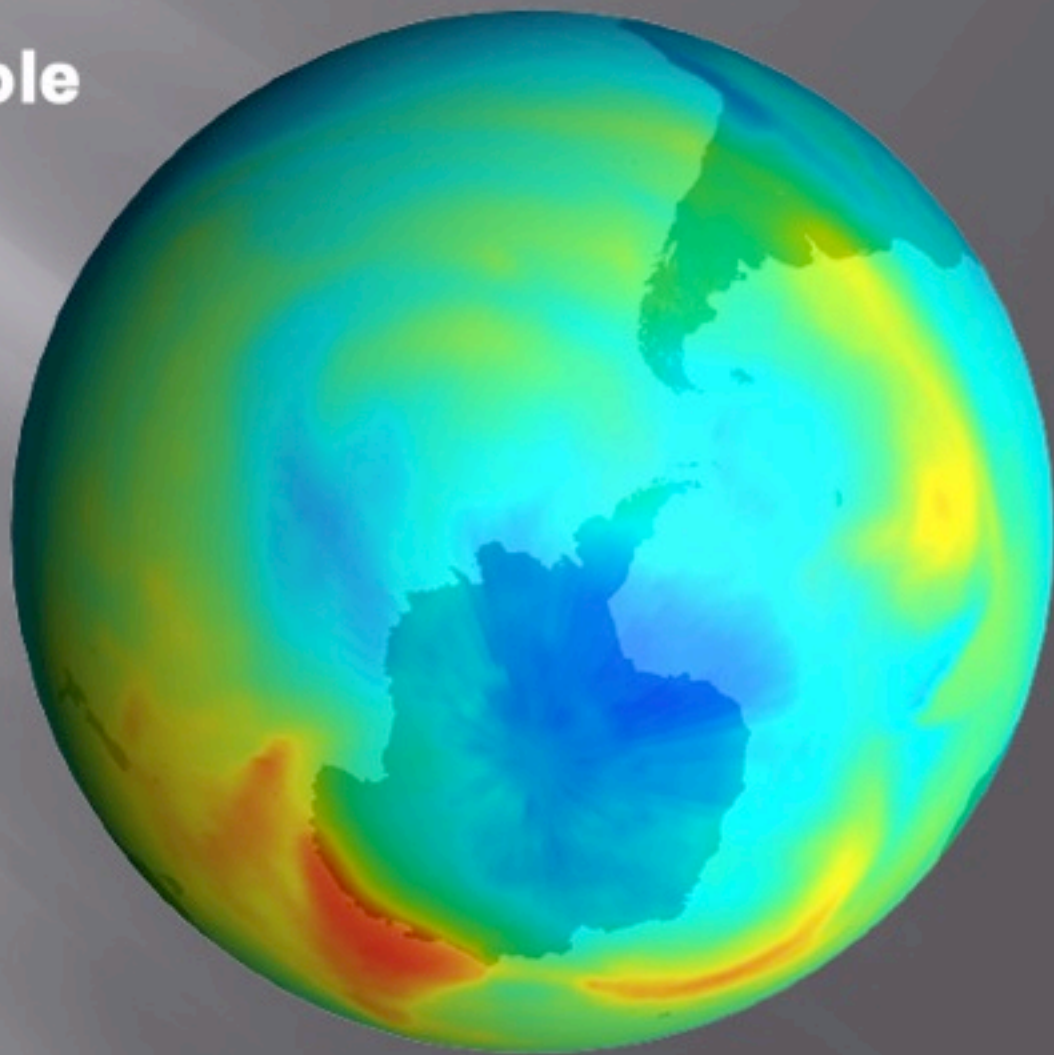
Acid Rain

- Air pollutants
 - Sulphur Dioxide (SO_2), Oxides on Nitrogen (NO_x)
 - Largely from power generation and vehicle exhausts
- Absorbed in atmosphere and by clouds
 - Acidifies moisture
- Falls as rain, snow, or on solid dust particles
- Acidifies ground water and surface water, corrodes materials (e.g. stonework)

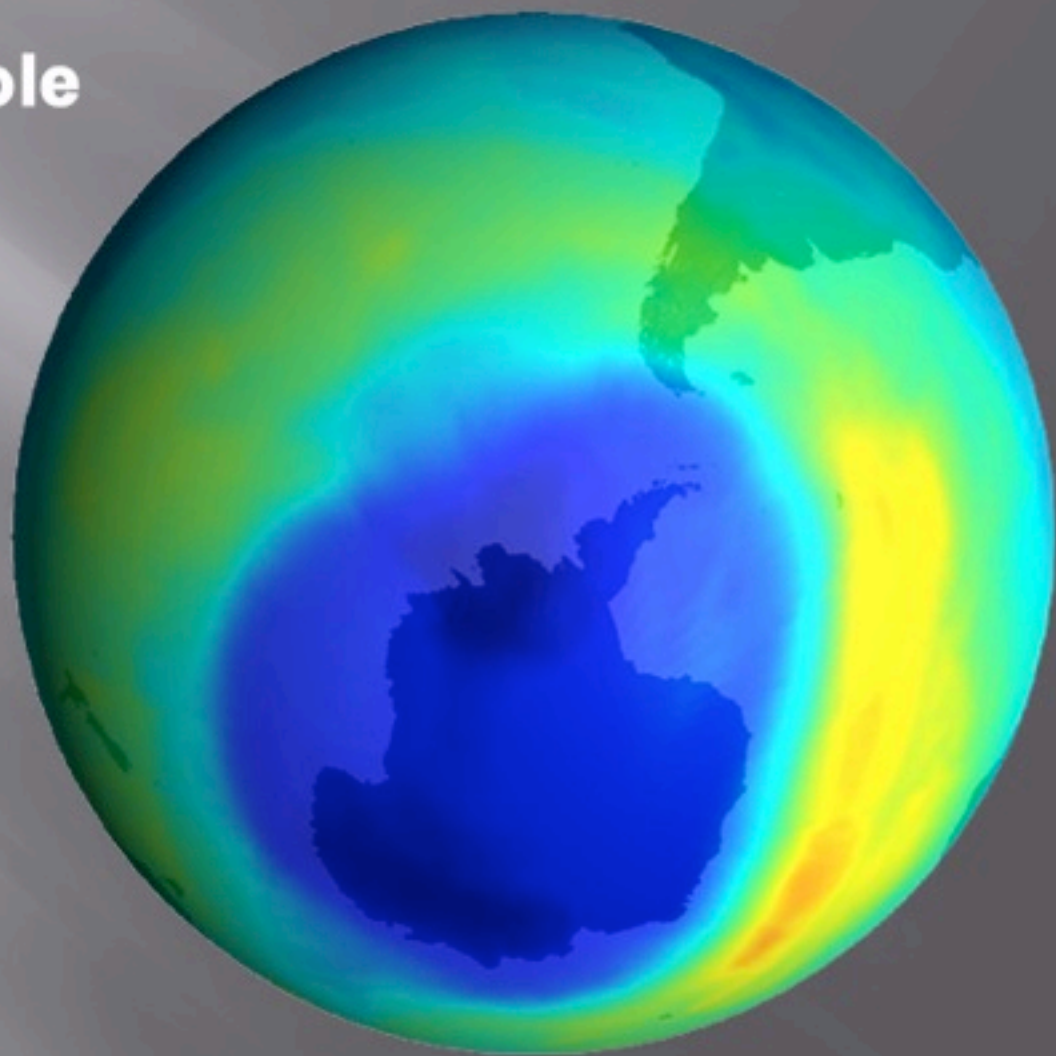
Volatile Organic Chemicals (VOCs)

- Paints, natural gas, petrol, road transport and industrial processes and naturally occurring (from green plants)
- React with sunlight and nitrogen oxides to form ozone
 - Toxic gas
- Contribute to global warming and ozone depletion
- Health
 - Some are carcinogens
- Spills contaminate water and soil

The Ozone Hole 1979



The Ozone Hole 2000





1.31





WESTERN
5)

MAD NACHIE
NJ

20

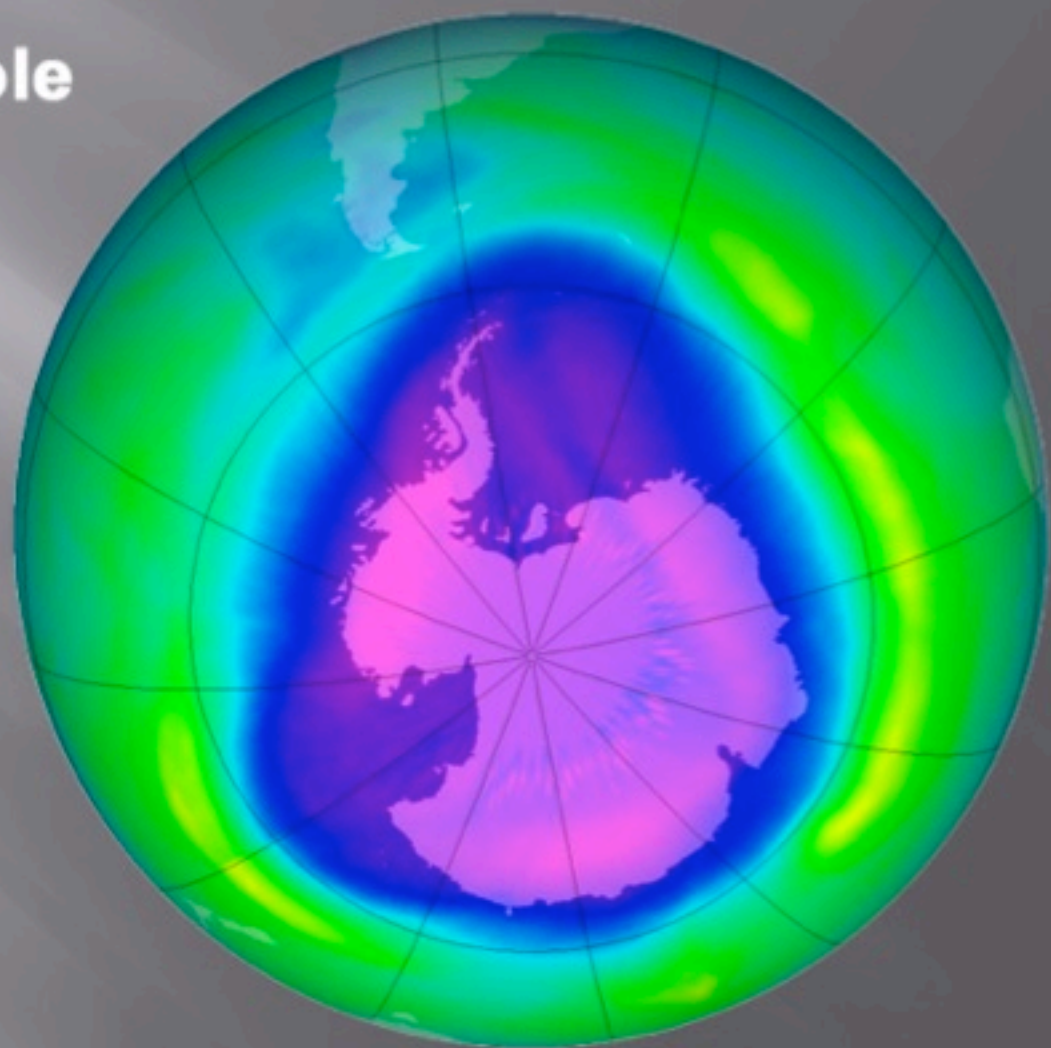
RESTRICTED USE PESTICIDE
METHYL BROMIDE

RESTRICTED USE PESTICIDE
METHYL BROMIDE

RESTRICTED USE PESTICIDE
METHYL BROMIDE



The Ozone Hole 2006



Ozone Depletion

- Caused by CFCs (refrigerants, aerosols, fire retardants, air conditioning etc)
- Remove ozone from stratosphere (high in the atmosphere)
- Allows harmful ultra-violet rays to penetrate
- Results in skin cancer, damage to plants etc.

Air pollution

- Controls
 - Environmental Permitting Regulations (EPR)
 - Permits to emit
- Clean air act, statutory nuisance controls etc
- International agreements
 - Montreal Protocol (and others) for ozone depleters