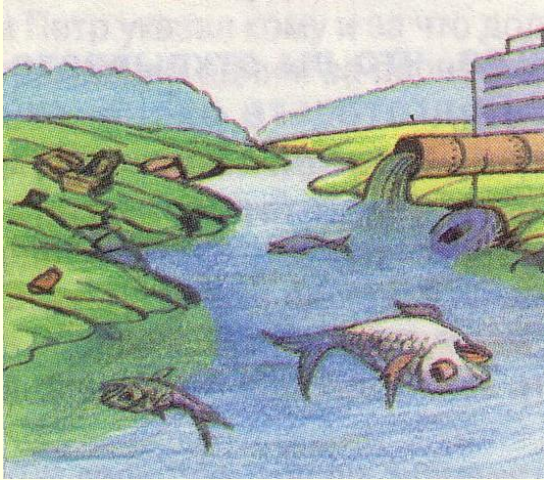


**“If you don’t think about the future,
you will not have it.”
(John Galsworthy)**



Classification of Air Pollutants



Primary Air Pollutants

- *The poisonous gases and undesirable chemicals which cause air pollution.*
- Carbon particles from unburned fuel, Ammonia (NH_3), Sulphur dioxide (SO_2), Hydrocarbons, Oxides of nitrogen, Oxides of carbon, Lead.

Secondary Air Pollutants

- *Derived from Primary Air Pollutants*
- In bright sunlight nitrogen, nitrogen oxides, oxygen and hydrocarbons – photochemical reaction – powerful oxidants – Ozone, Aldehydes, Sulphuric acid, Peroxy acetyl nitrate (PAN), Peroxides, etc.
- They form photochemical *Smog*

Sources of Air Pollution



Natural

- Natural contaminants
(*fungi, spores, cysts, bacteria, methane, dust, etc.*)
- Carbon monoxide *from Methane Gas*
- Volcanic Eruptions
- Forest fires
- Electric storms and Solar flares
- Salt spray from oceans
- Dust storms

Man Made

- Rapid industrialization
- Automobile Revolution
- Deforestation



Indoor air pollution

Bathrooms

showers, plumbing leaks, household cleaners, wastebaskets, drinking cups, damp carpeting and flooring, bacteria and viruses

Bedrooms

poor ventilation, dust and dust mites, bacteria and viruses, pet dander, drycleaning

Attic

old clothing and bedding, old asbestos insulation, dust

Living Areas

tobacco smoke, furniture and carpeting, pets, wood stoves and fireplaces, hobby supplies (such as varnishes and glues)

Kitchen

cooking smoke, gas appliances, household cleaning agents, garbage pails, plumbing leaks

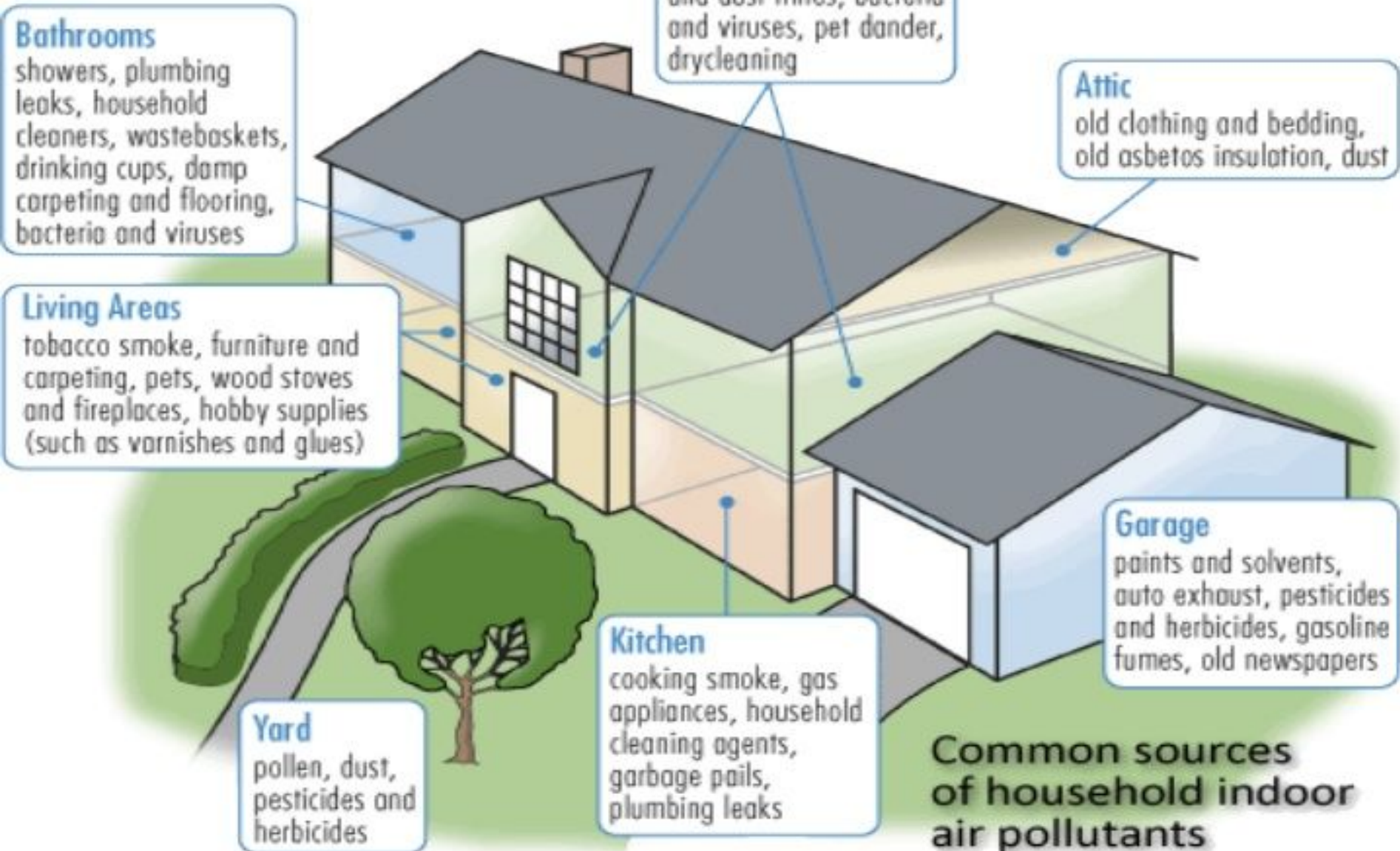
Garage

paints and solvents, auto exhaust, pesticides and herbicides, gasoline fumes, old newspapers

Yard

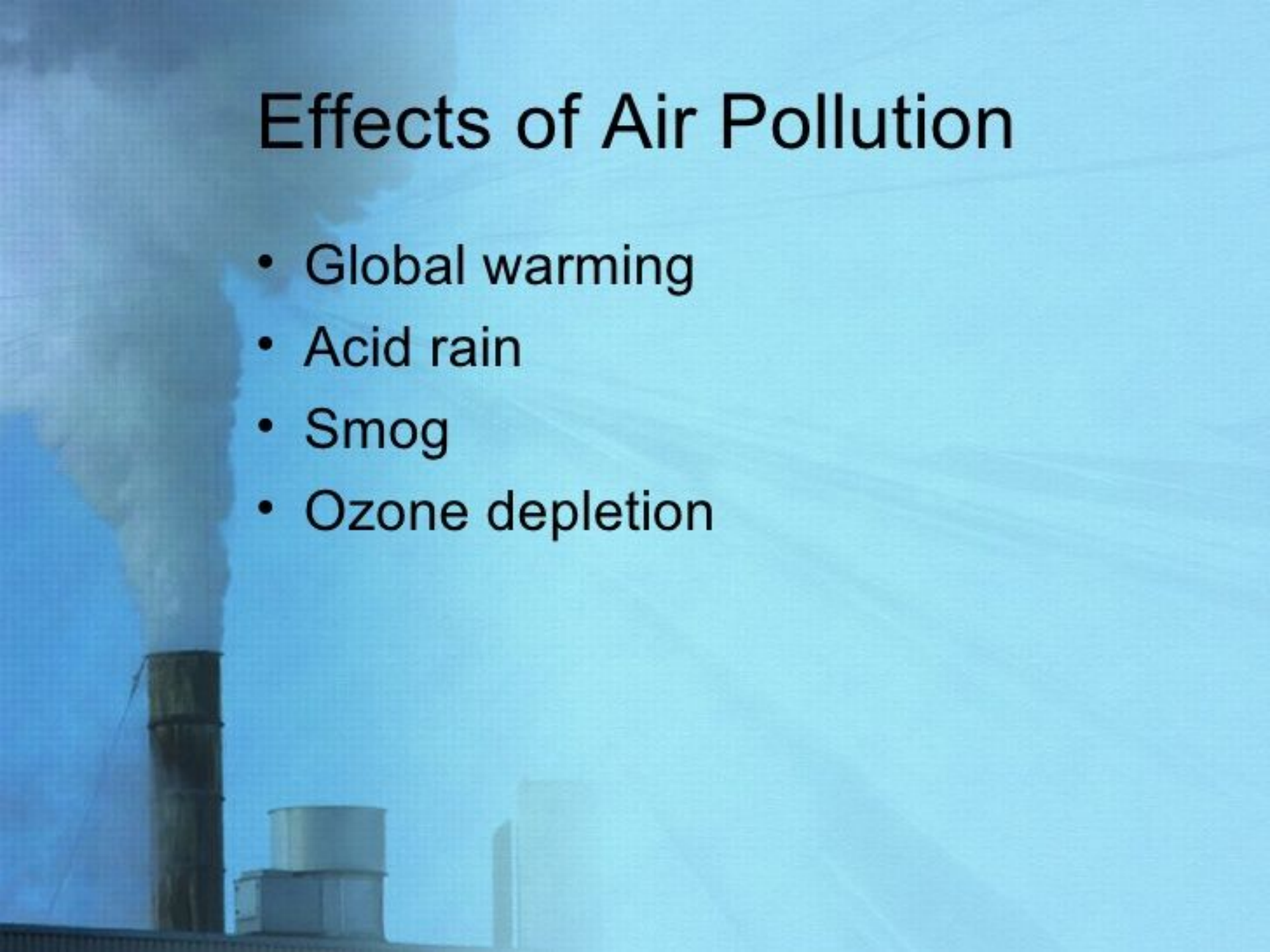
pollen, dust, pesticides and herbicides

Common sources of household indoor air pollutants



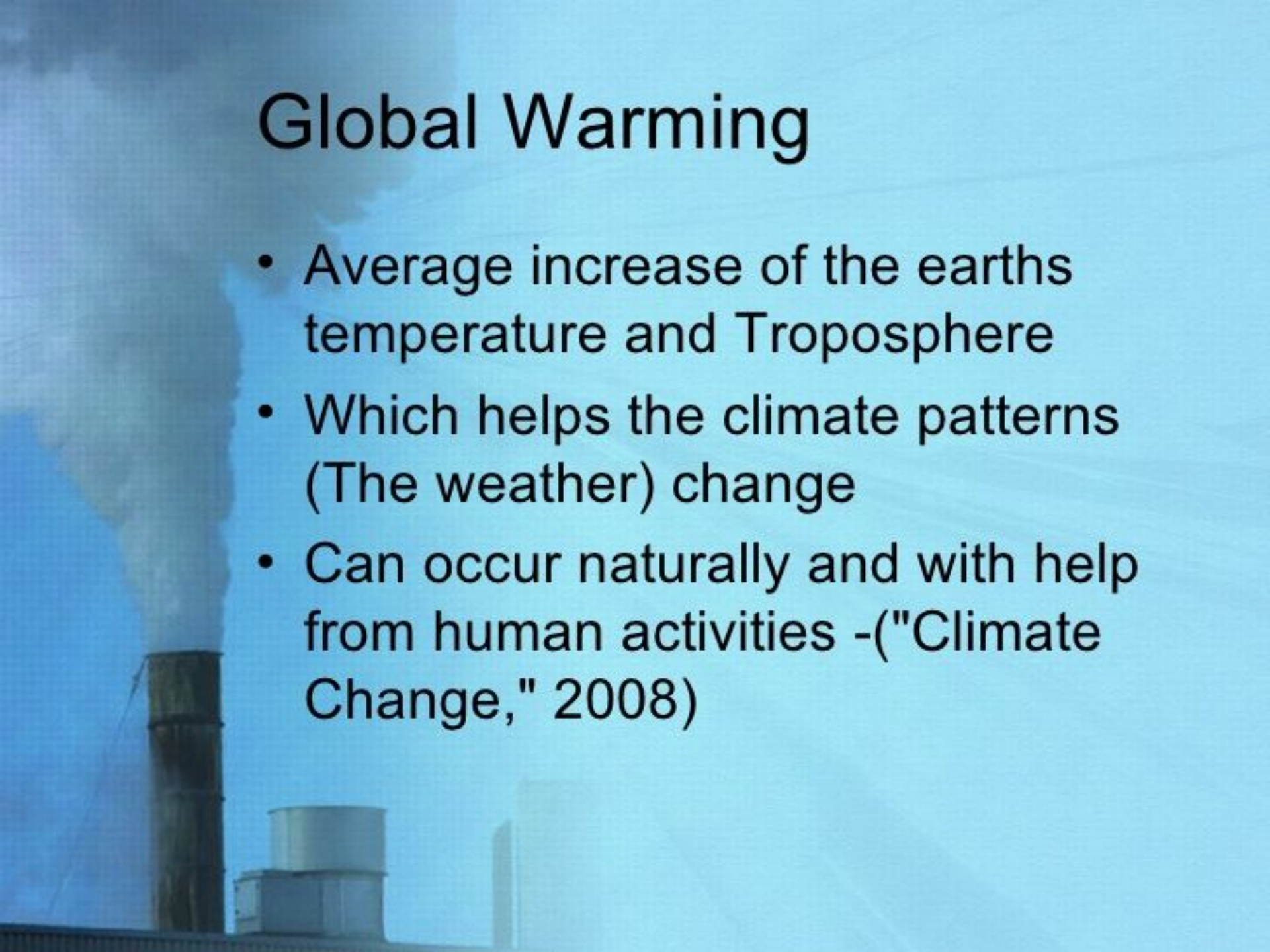
Effects of Air Pollution

- Global warming
- Acid rain
- Smog
- Ozone depletion



Global Warming

- Average increase of the earth's temperature and Troposphere
- Which helps the climate patterns (The weather) change
- Can occur naturally and with help from human activities -("Climate Change," 2008)



Global Warming (cont.)



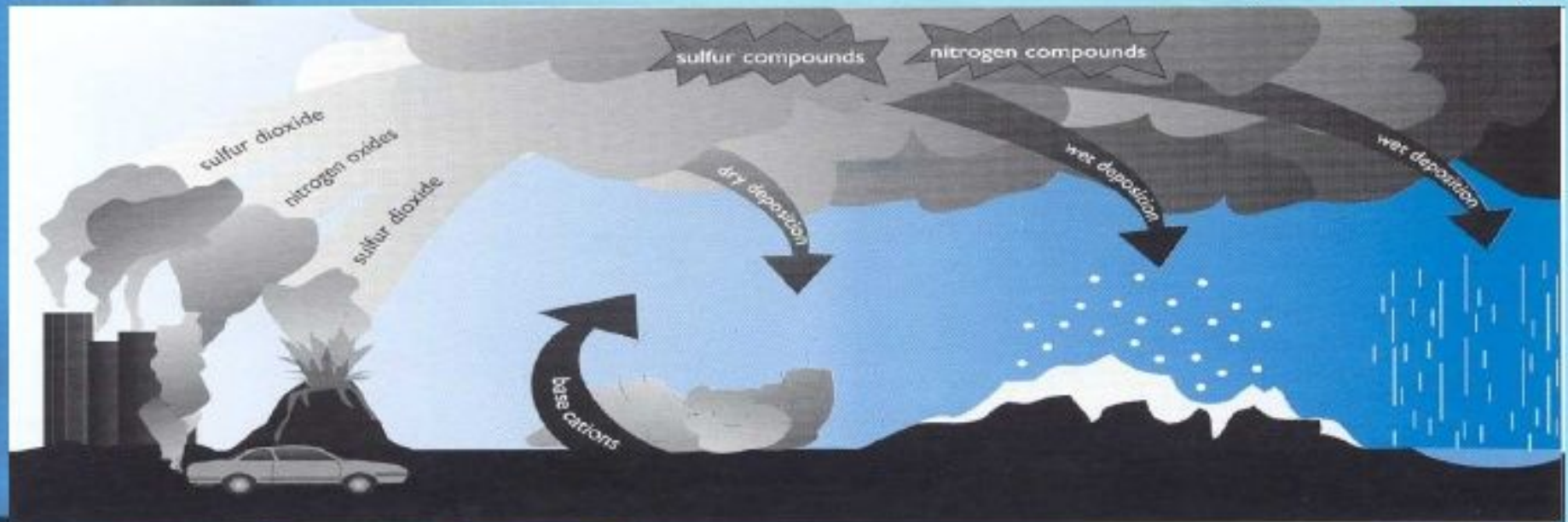
© Arne Naevra (Norway)

- An example of this is all the ice melting in Antarctica resulting from Global Warming.
- All of that melting ice is destroying habitats for many animals for example Polar Bears

Acid Rain

- When acid chemicals are swept into the air and into areas where it is raining and the acid falls to the ground in the form of rain, snow, or fog ("What Is Acid," 2007)

(Stack, n.d.)



Smog

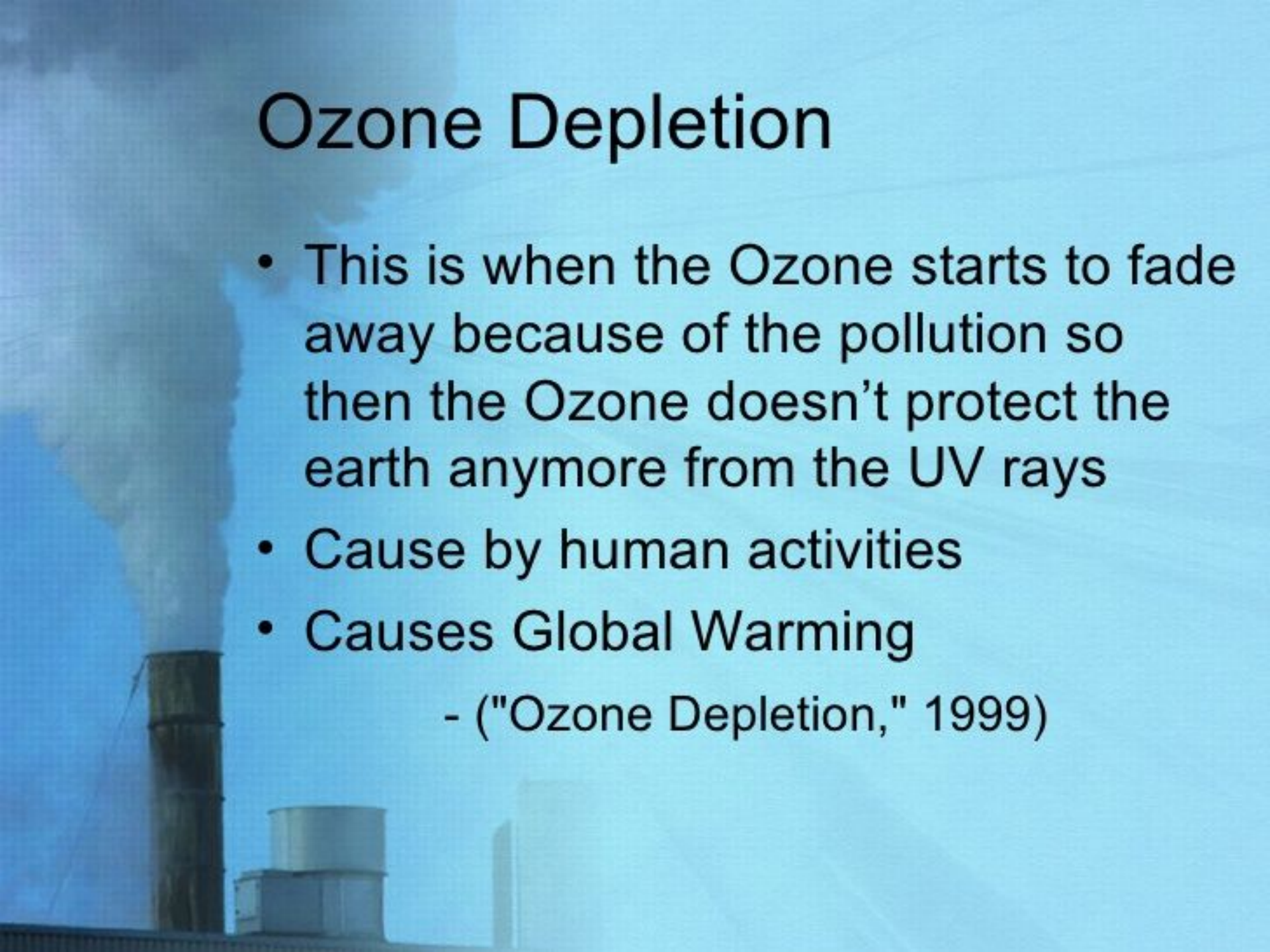
- Smoke and fog put together



-(Tyus, n.d.)

Ozone Depletion

- This is when the Ozone starts to fade away because of the pollution so then the Ozone doesn't protect the earth anymore from the UV rays
- Cause by human activities
- Causes Global Warming
 - ("Ozone Depletion," 1999)



Effects of air pollution on health:

- Short term effects:

Irritation to the eyes, nose and throat.

Upper respiratory infections.

Headache, nausea, and allergic reactions.

Asthma and emphysema



Effect of Air Pollution Contd...

- On Animals

- Feeding particulate coated plants (fluorine, lead, arsenic) – Arsenic Poisoning
- Lead Poisoning – Bronchitis, Lack of appetite in pet animals



Control of Air Pollution

- Planting more trees
- Reducing vehicle exhausts
- Using less polluting fuels
- Using mass transport
- Removal of particulate matter using electrostatic precipitator, cyclone filter, etc.
- Industrial area should be cited far away from residential area.
- Suitable chemical methods applied to remove hydrocarbons
- Multi stage combustion process – suggested to remove oxides of nitrogen



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- <https://www.youtube.com/watch?v=UcWpkWBX04E>