

# ***Air Pollution* & *Air*** ***Quality* Index**

**Unit 7 – Ch 21.4**



# Air Quality Index (*AQI*)

- AQI – Report of daily air quality
- Indicates level of *air pollution*
- Identifies potential *health hazards*



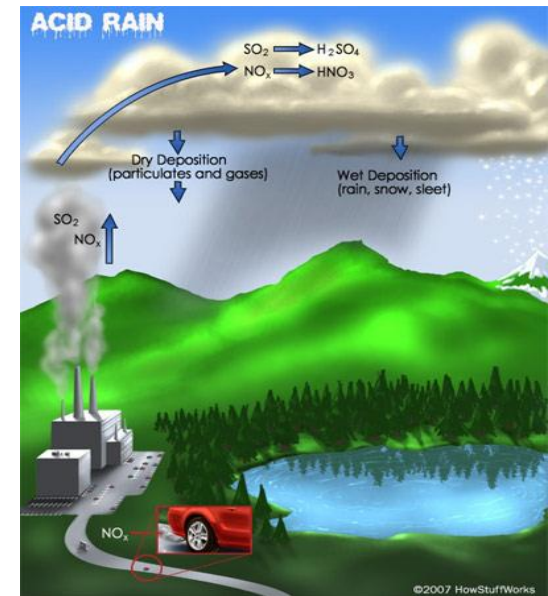


# Air Quality Index for Ozone

Index Values (Conc. Range)	Air Quality Descriptors	Cautionary Statements for Ozone
0 – 50 (0-60 ppb)	Good	<b>No health impacts are expected when air quality is in this range.</b>
51 – 100 (61-75 ppb)	Moderate	<b>Unusually sensitive people should consider limiting prolonged outdoor exertion</b>
101 – 150 (76-104 ppb)	Unhealthy for Sensitive Groups	<b>Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion</b>
151 – 200 (105-115 ppb)	Unhealthy	<b>Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children should limit prolonged outdoor exertion.</b>
201 – 300 (116-374 ppb)	Very Unhealthy	<b>Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.</b>

# Air Quality

- **Environmental Protection Agency (EPA):**
- **Clean Air Act of 1963**
  - **Federal** law administered by EPA to **monitor** and **control** *air pollution*
    - Calculates **AQI** for major pollutants



# Air *Quality*

- Ground-level Ozone (ozone in troposphere) & airborne particles pose greatest pollutant threat to health



Ozone in the stratosphere protects Earth but in the troposphere, it is harmful.





# ***Ground-Level Ozone***

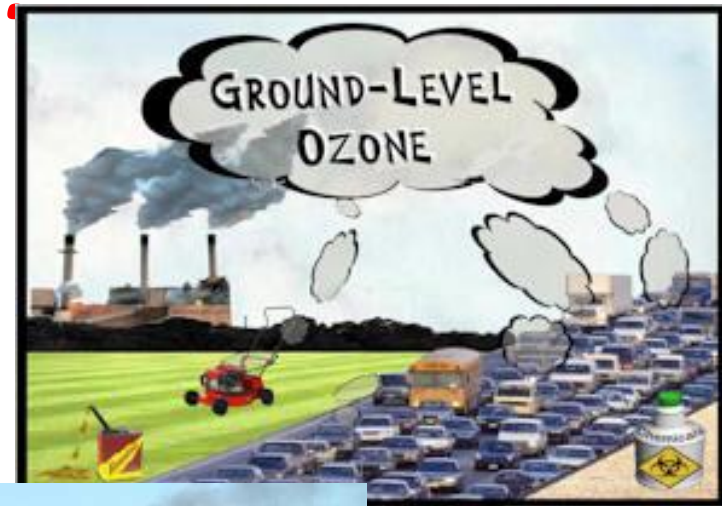
- ***This is what we breathe...***

- ***Who's Impacted MOST?***

- Lung disease patients

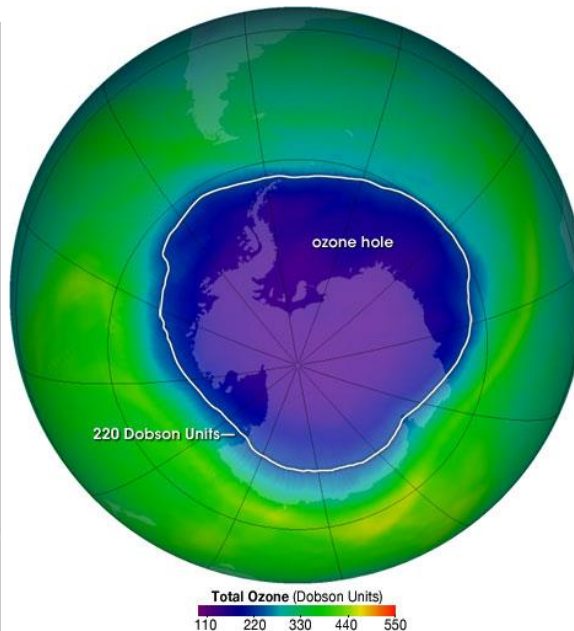
- ***Infants***

- ***Older adults***



# Chlorofluorocarbons: (*CFCs*)

- *Non-toxic* & *non-flammable* chemical *alternatives* to more dangerous compounds

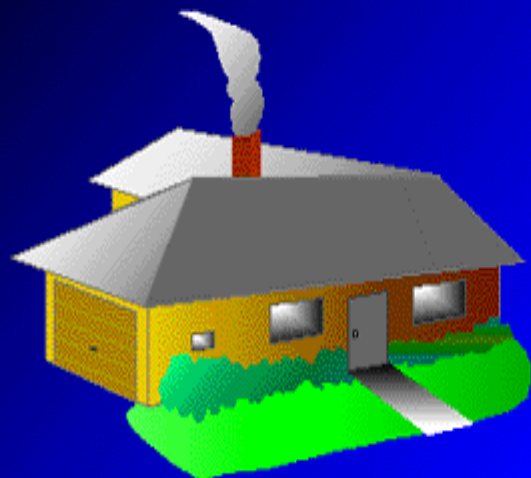


# Chlorofluorocarbons: (CFCs)

- Developed in the **1930's** mainly for *refrigeration*
- Poses **less** health risk to humans, but *greater, indirect* threat to *environment*
- Major cause of *ozone depletion* due to release of *chlorine atoms* upon exposure with **solar radiation**



# Sources of Chlorofluorocarbons (CFCs)

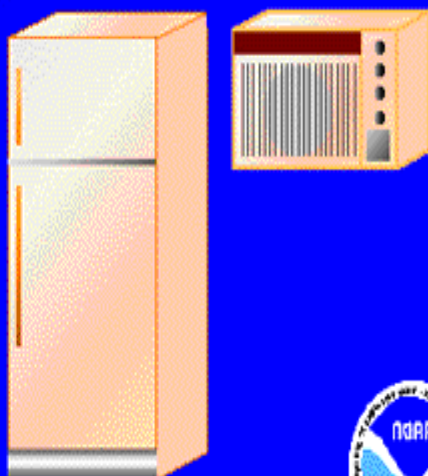


**Insulation  
Materials**

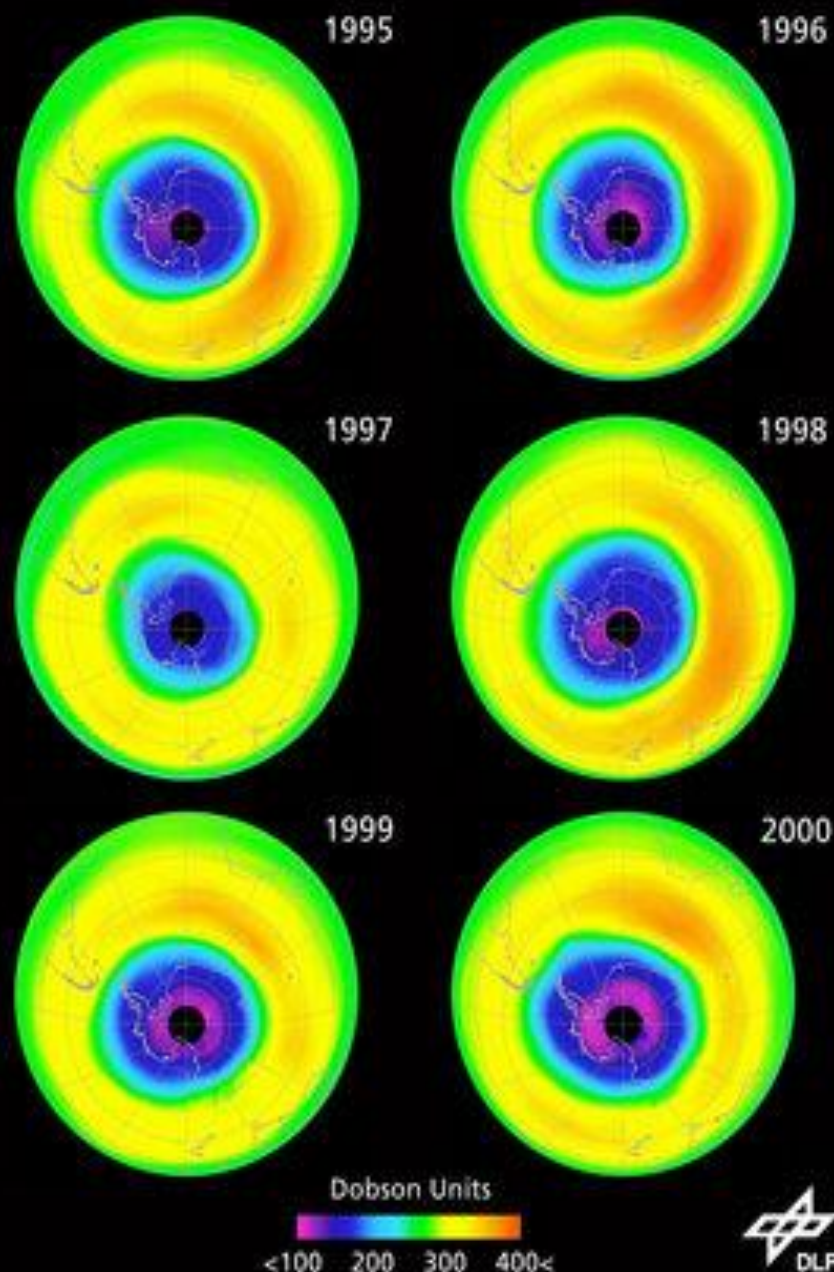
**Refrigeration  
Air Conditioning**



**Aerosols**



ERS2-GOME Total Ozone Column Monthly Mean  
September



# What's at Risk?

- Sensitive **ECOSYSTEMS**
  - *Forests, parks, wildlife refuges, wilderness areas*

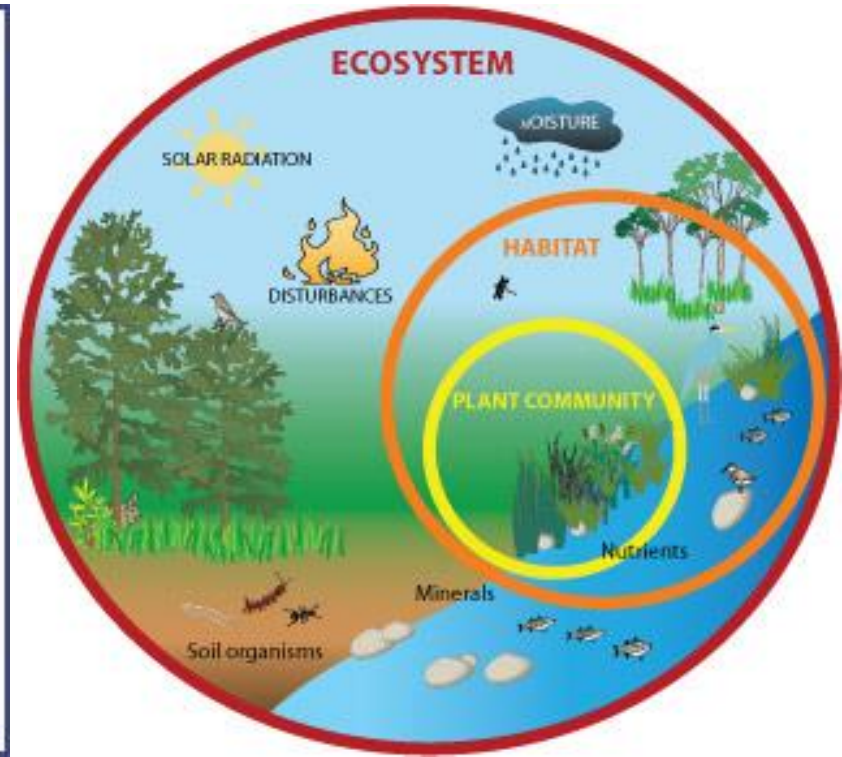


Ozone injury to yellow-popular



Ozone injury to milkweed

USFS





# Pollutant Emissions

## Natural

Lightning

Volcanos

Wildfires

Forests

## Area

Cities

Livestock

Fertilizer

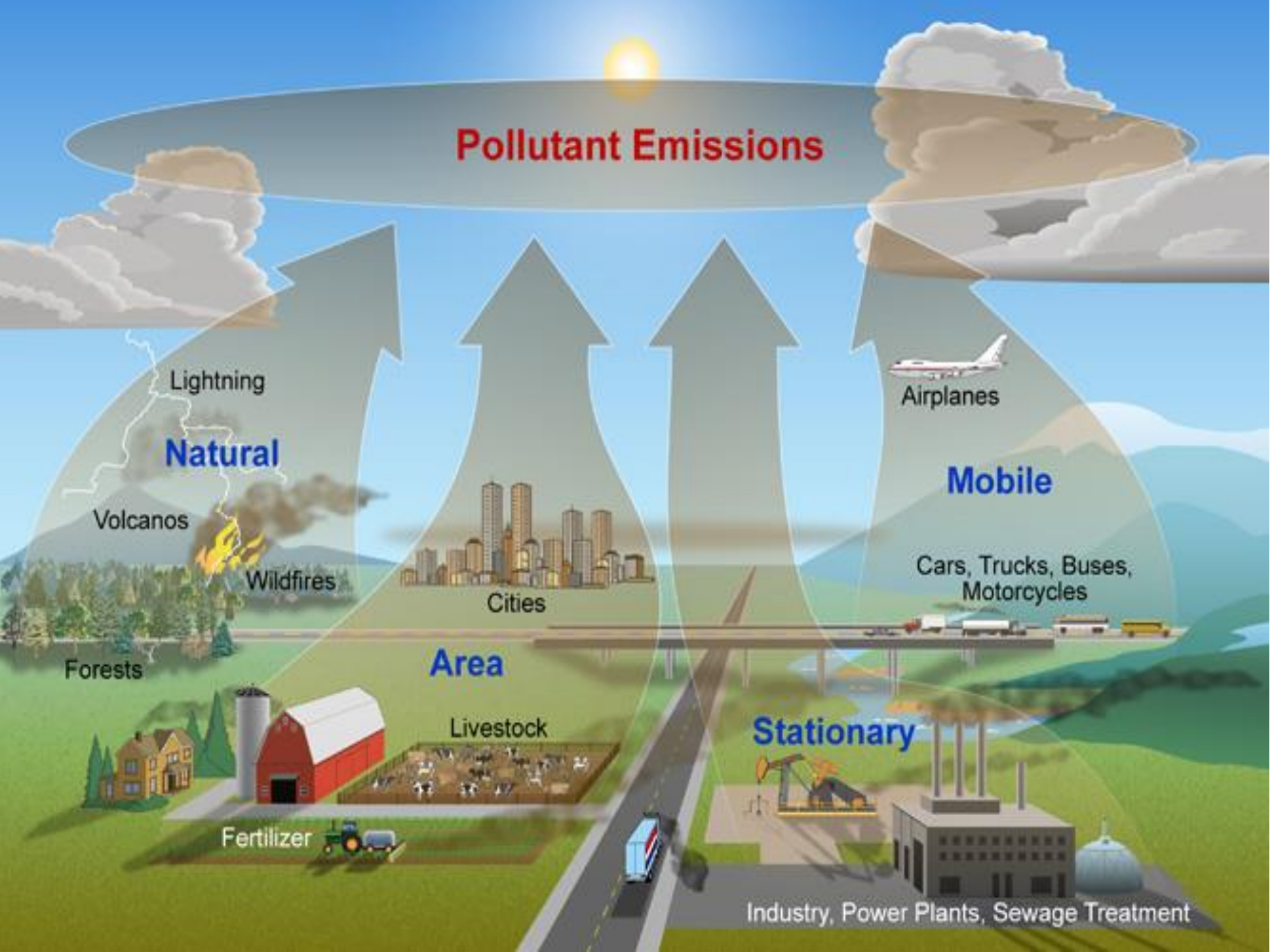
## Stationary

Industry, Power Plants, Sewage Treatment

## Mobile

Airplanes

Cars, Trucks, Buses, Motorcycles





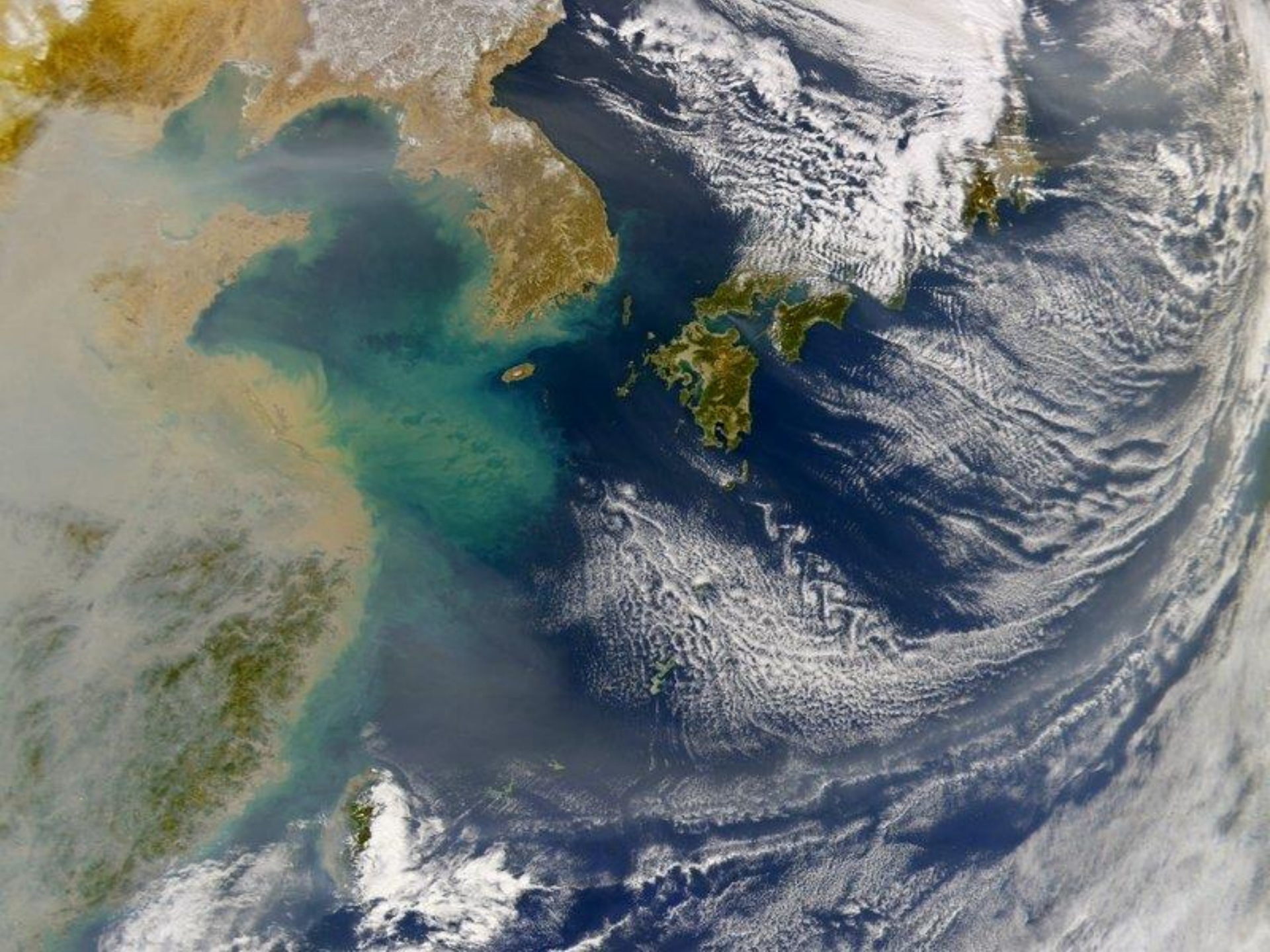




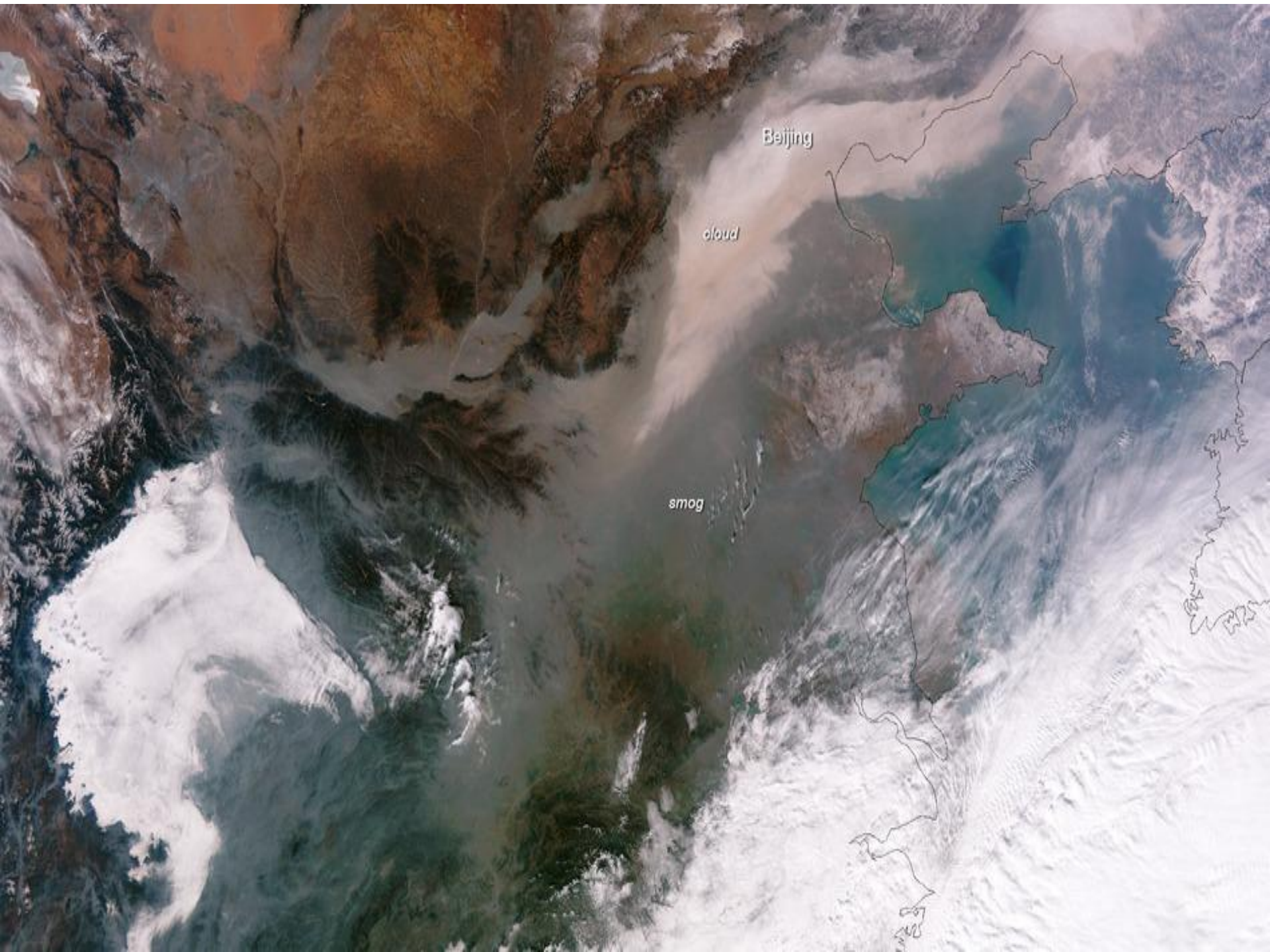




GREENPEACE







Beijing

cloud

smog

