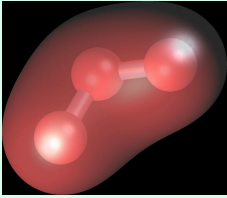


# Depletion of the Earth's Ozone Layer

Causes



[http://upload.wikimedia.org/wikipedia/commons/archive/7/77/20070615193132!Ozone\\_molecule\\_ball\\_and\\_stick.png](http://upload.wikimedia.org/wikipedia/commons/archive/7/77/20070615193132!Ozone_molecule_ball_and_stick.png)

The issue

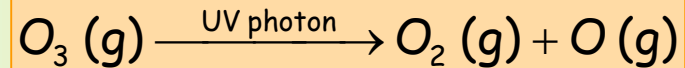
Consequences

Solutions

**Ozone: structure and function**

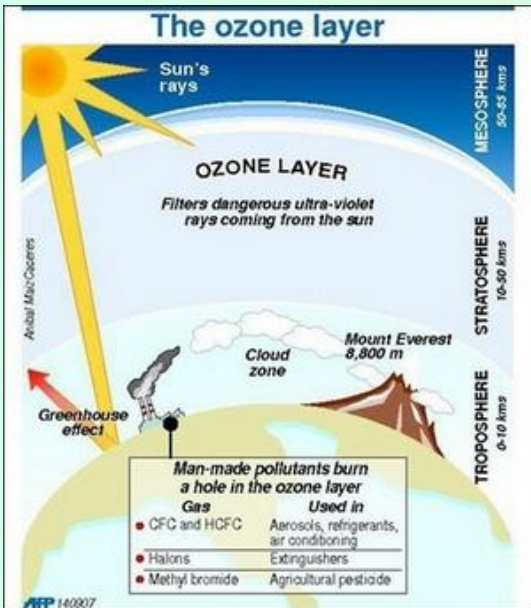
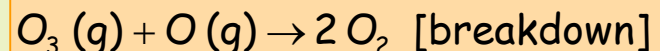
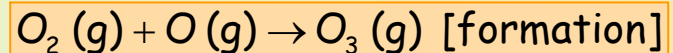
Ozone is made of three oxygen atoms bound together and which is written as  $O_3$

Ozone absorbs short-wavelength ultraviolet (UV) radiation from the Sun:



This radiation has enough energy to break bonds in DNA and damage genes.

Under normal conditions, its concentration is nearly constant annually. Two reactions maintain a balance in ozone concentration:



[http://www.thewe.cc/thewei/\\_/images\\_3/environment/ozone\\_layer.jpg](http://www.thewe.cc/thewei/_/images_3/environment/ozone_layer.jpg)

# Depletion of the Earth's Ozone Layer

Causes

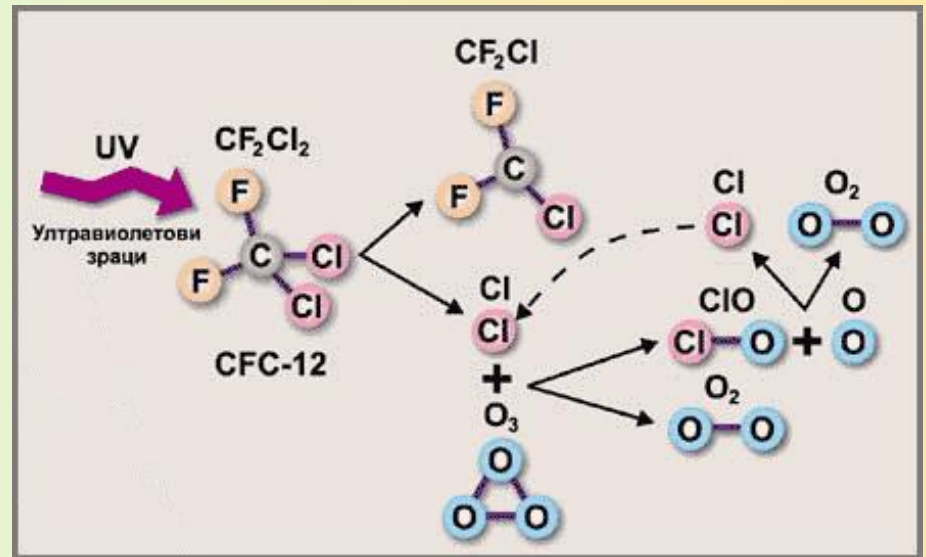
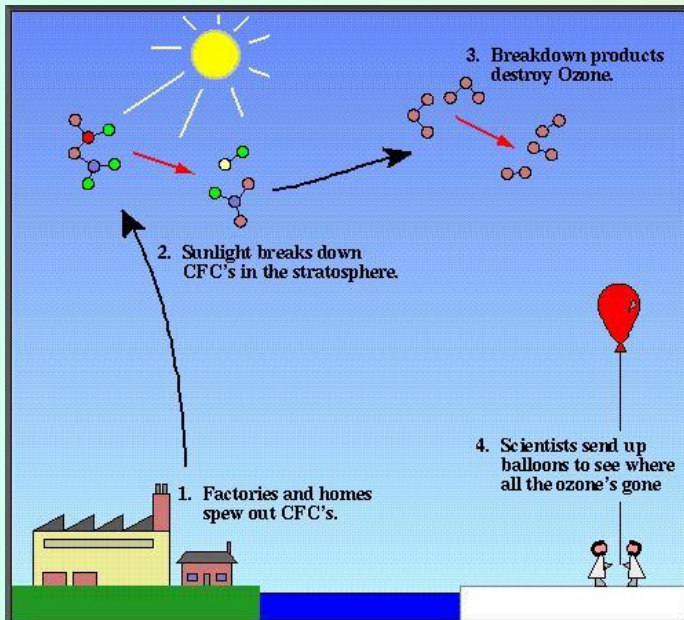
The issue

Consequences

Solutions

## Homogeneous catalysis

The CFCs (chlorofluorocarbons), employed as refrigerants, reactants and aerosol propellants act as homogeneous catalyst in the destruction of the ozone



# Depletion of the Earth's Ozone Layer

Causes

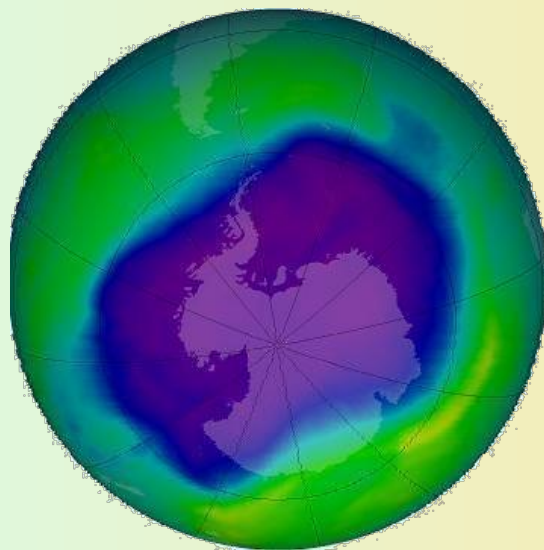
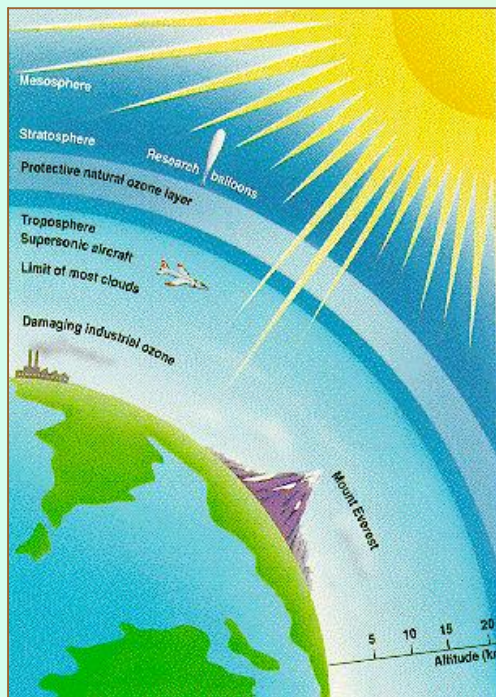
The issue

Consequences

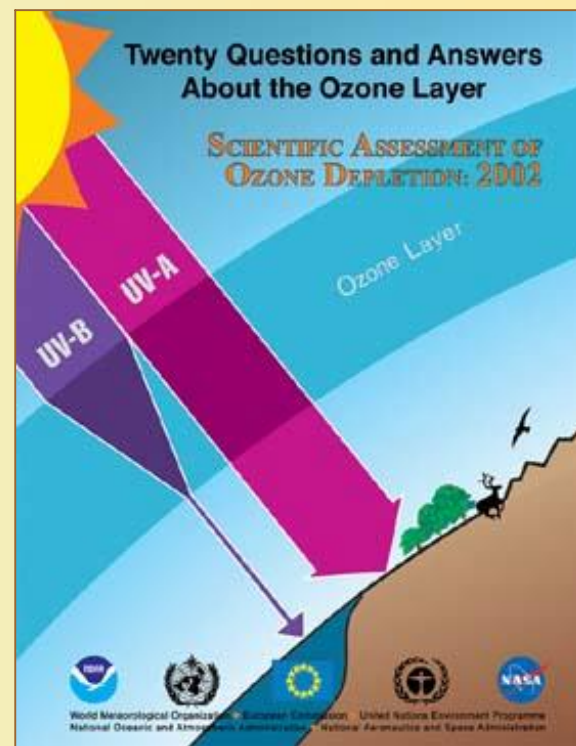
Solutions

## Depletion of ozone layer

Since the ozone layer absorbs ultraviolet light from the Sun, ozone layer depletion could lead to damage, including increases in skin cancer.



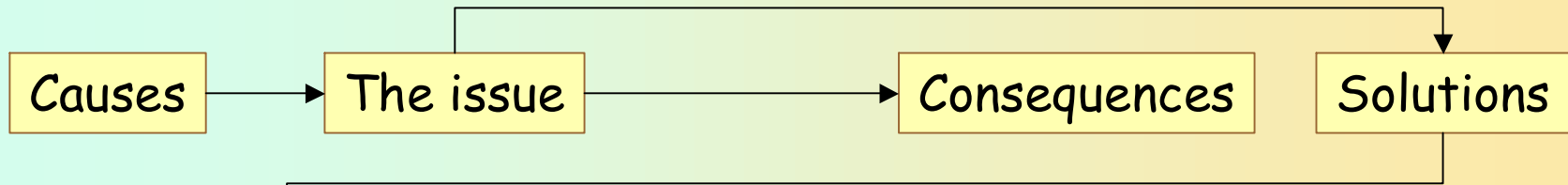
[http://www.epa.gov/Ozone/images/fig1\\_SPD.JPG](http://www.epa.gov/Ozone/images/fig1_SPD.JPG)



[http://www.usgcrp.gov/usgcrp/images/ocp/2004/thumbnails/OCPO4-05\\_fig4c.jpg](http://www.usgcrp.gov/usgcrp/images/ocp/2004/thumbnails/OCPO4-05_fig4c.jpg)

[http://www.ec.gc.ca/ozone/DOCS/KIDZONE/images/ozn\\_layr.gif](http://www.ec.gc.ca/ozone/DOCS/KIDZONE/images/ozn_layr.gif)

# Depletion of the Earth's Ozone Layer



Observations and model calculations suggest that the global average amount of ozone depletion has now approximately stabilized.

The ozone layer is expected to begin to recover in coming decades due to declining ozone-depleting substance concentrations, assuming full compliance with the Montreal Protocol.

