Lidership on Sustainable Development

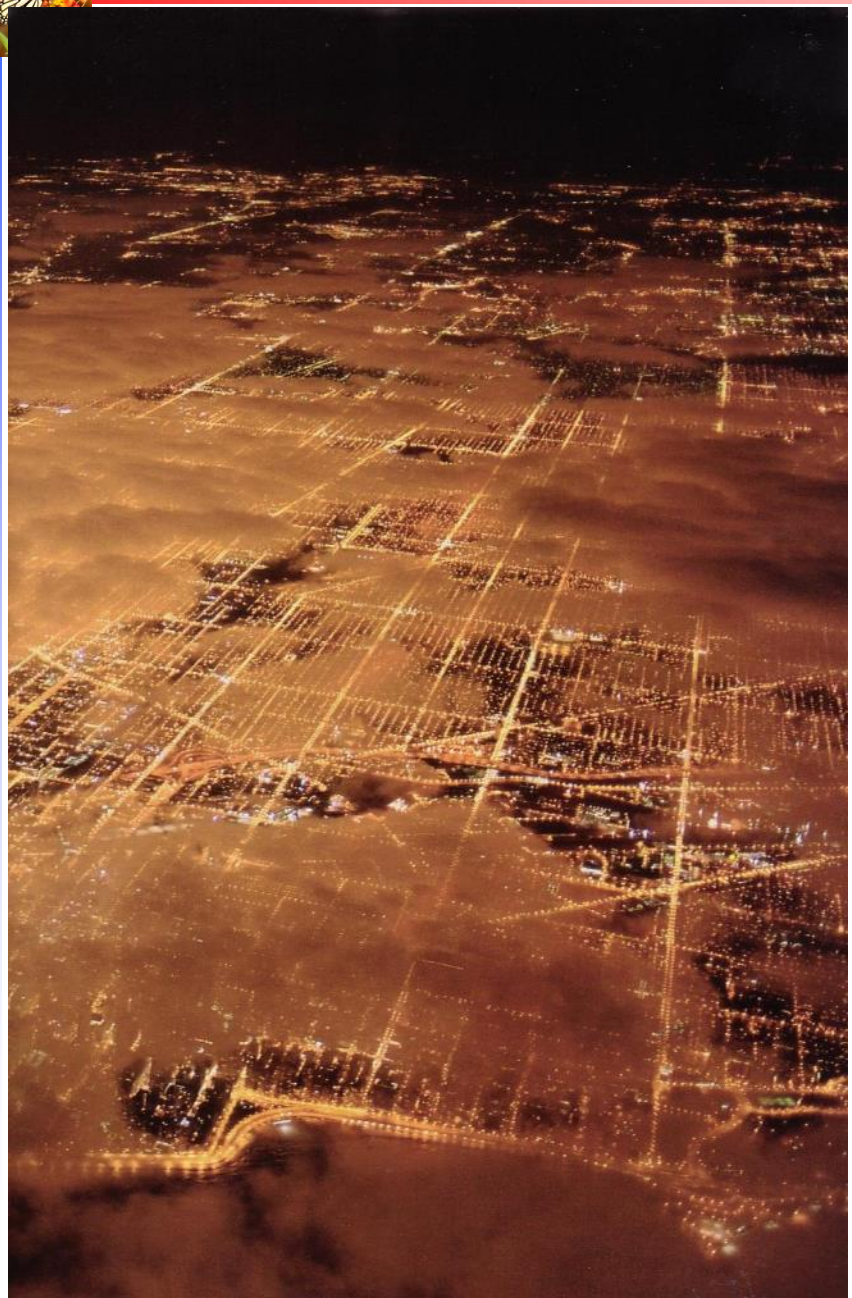
Human Impacts

Sea of Trash

Video de Charles Moore

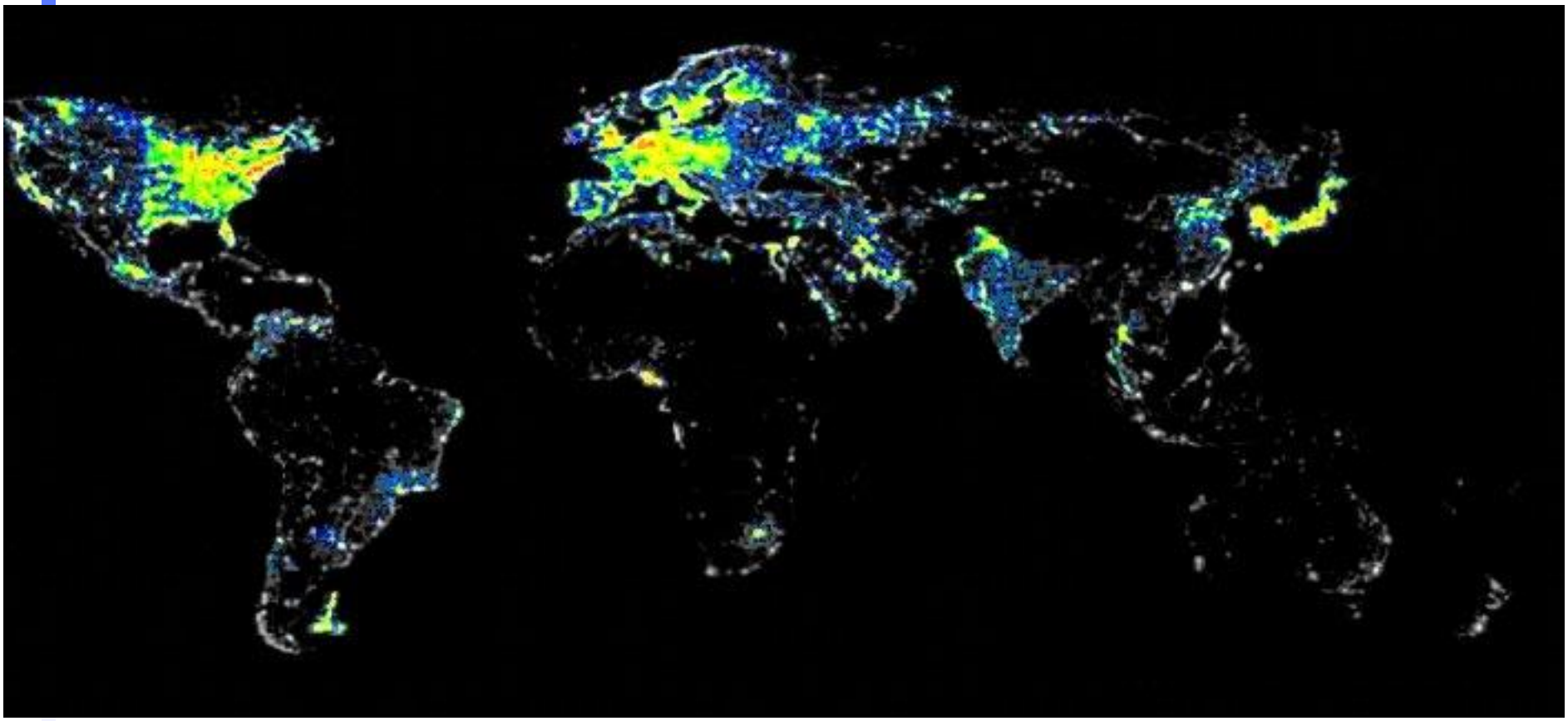
https://www.ted.com/talks/capt_charles_moore_on_the_seas_of_plastic

Chicago, IL



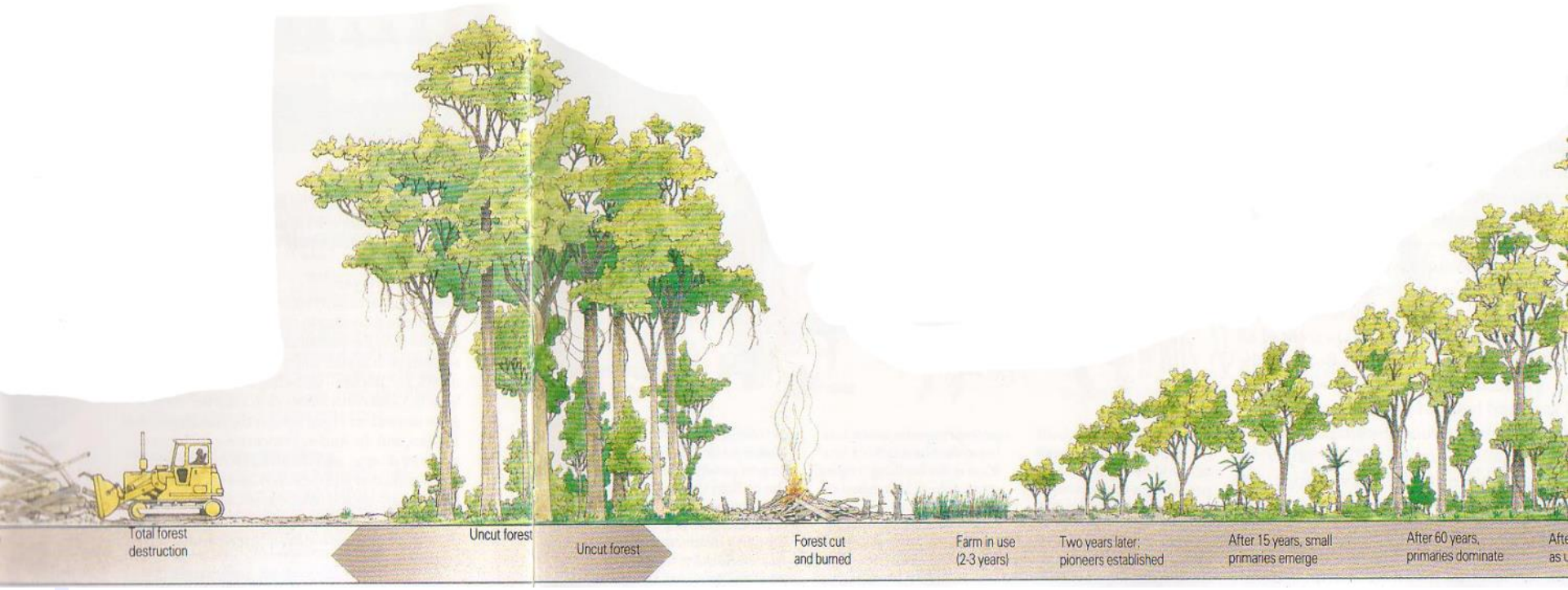
Sydney, Aus.

The night in planet earth

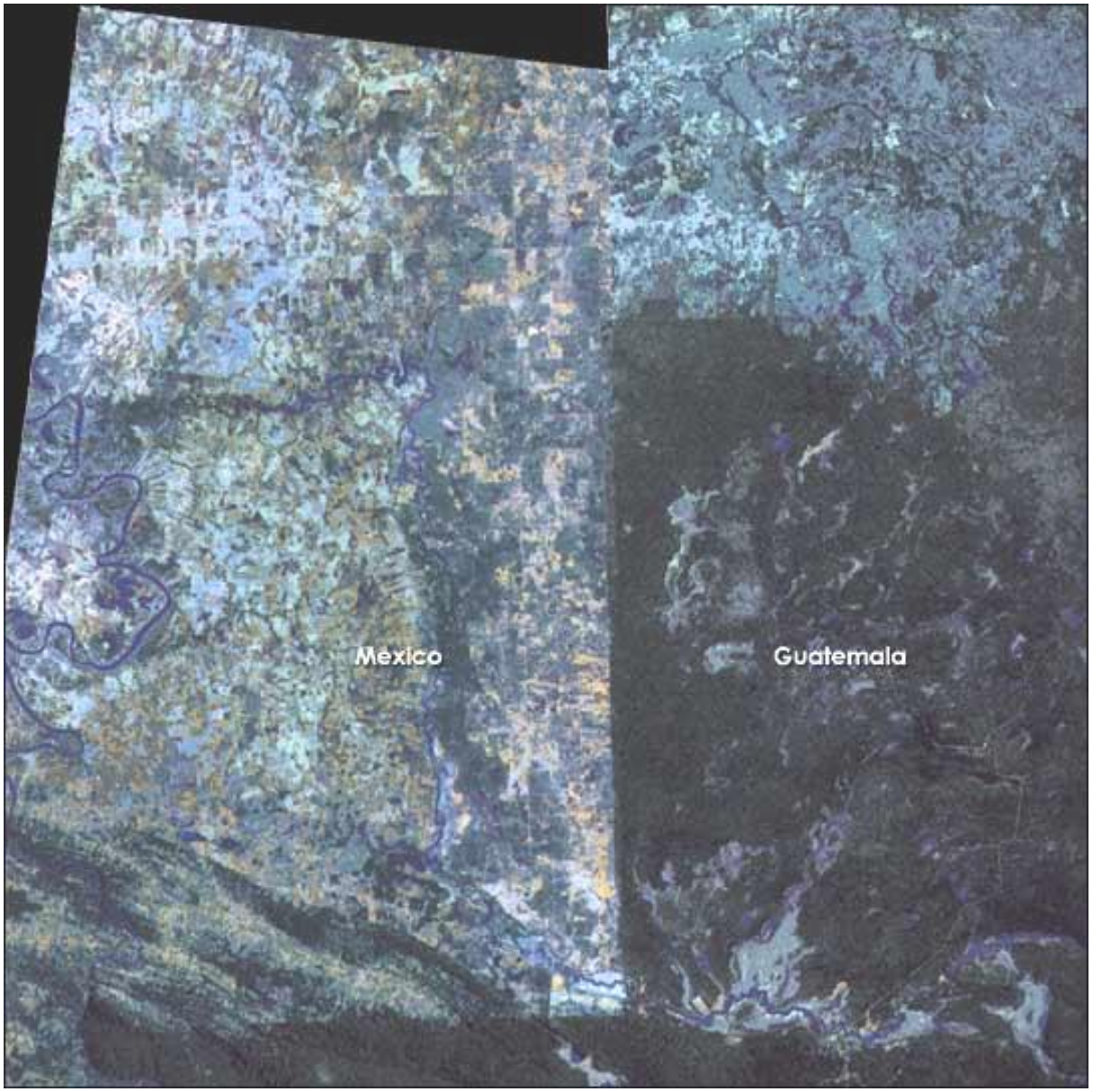


Map produced by Light Poluttion Science & Technology Institute

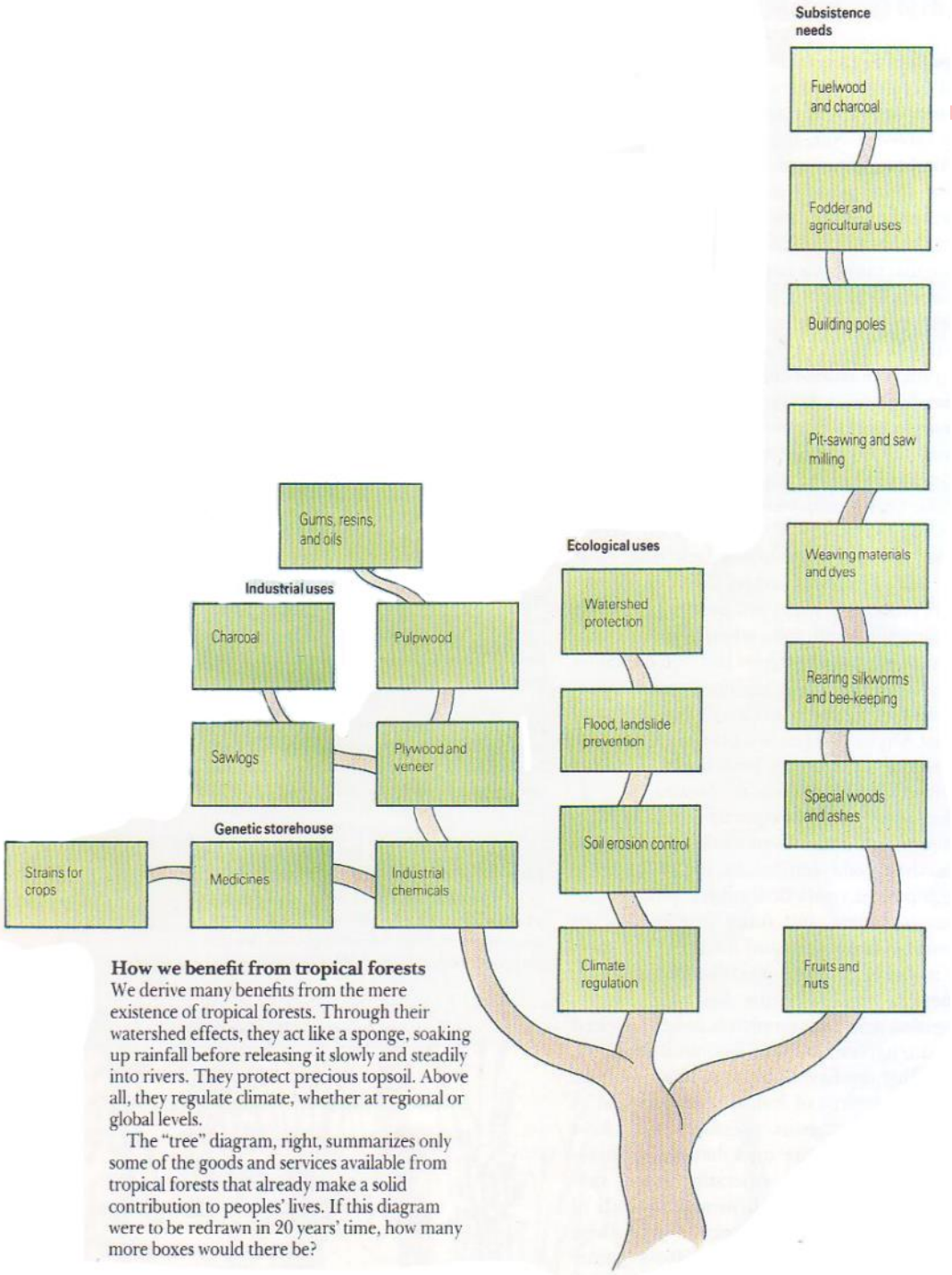
Deforestation in the tropics



Deforestation in the tropics
Mexico-Guatemala border



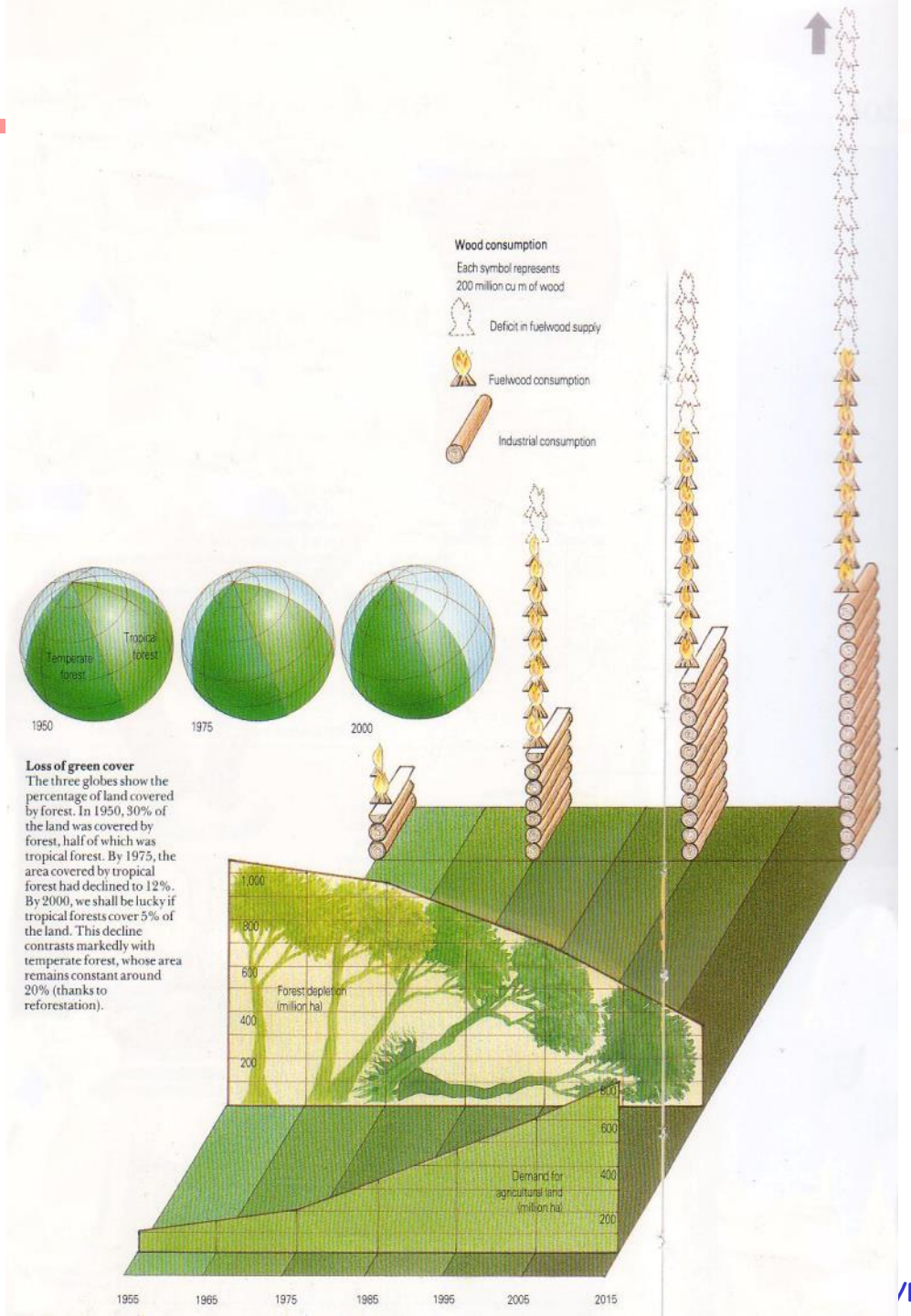
Benefits from the tropical forest



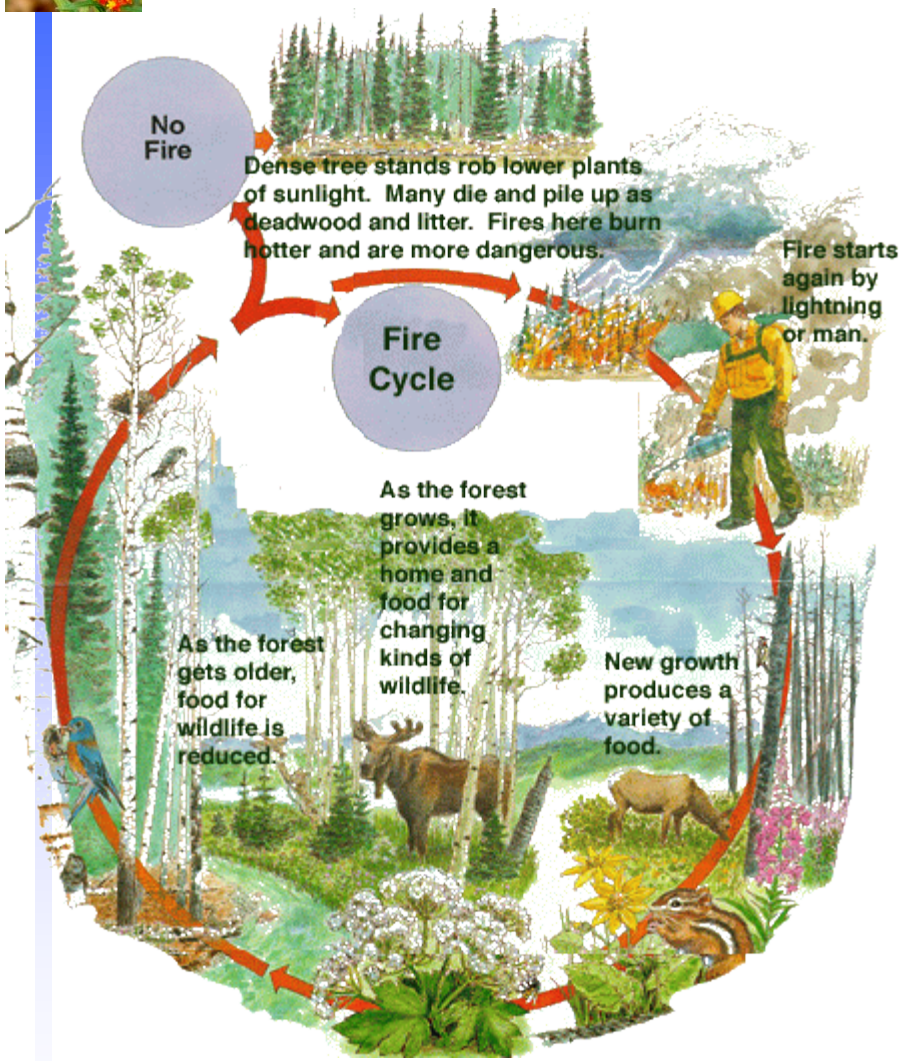
How we benefit from tropical forests
We derive many benefits from the mere existence of tropical forests. Through their watershed effects, they act like a sponge, soaking up rainfall before releasing it slowly and steadily into rivers. They protect precious topsoil. Above all, they regulate climate, whether at regional or global levels.

The "tree" diagram, right, summarizes only some of the goods and services available from tropical forests that already make a solid contribution to peoples' lives. If this diagram were to be redrawn in 20 years' time, how many more boxes would there be?

Recursos Forestales



Ecosystems & Fire



Rondonia, Brazil

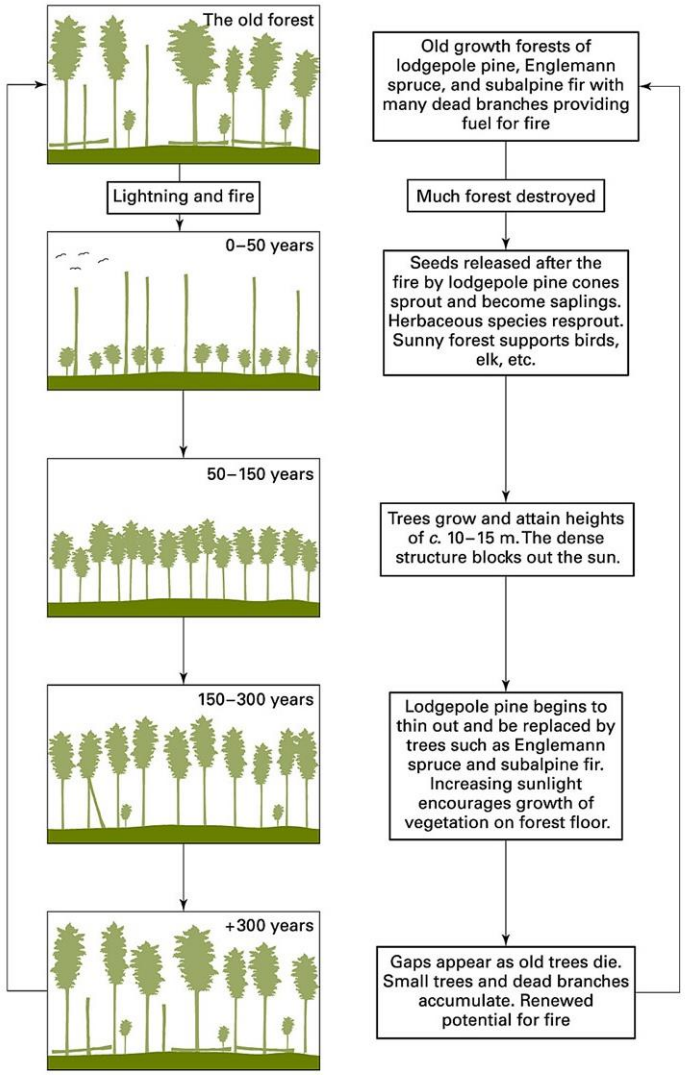
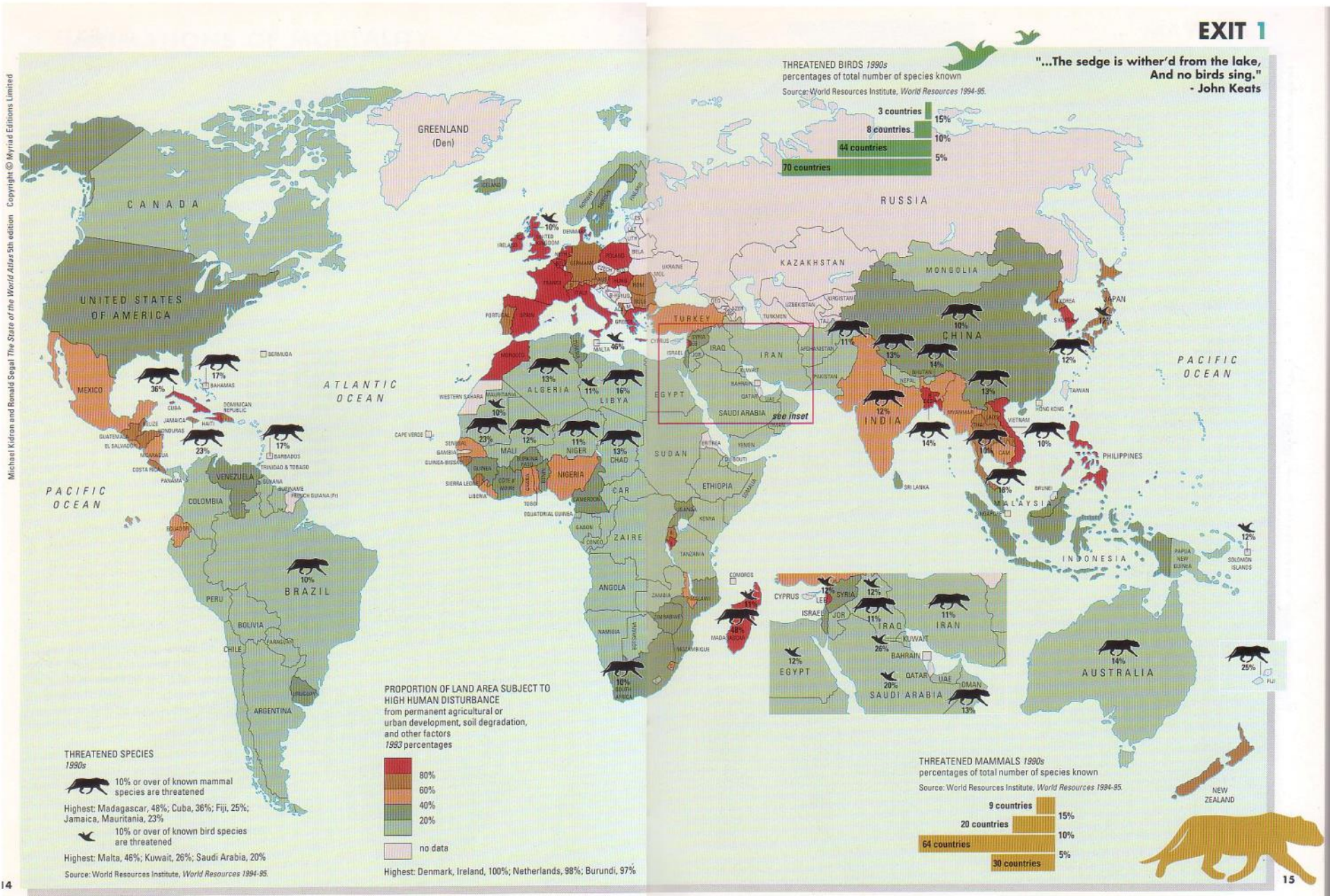


Figure 2.4 Ecological succession in response to fire in Yellowstone National Park (after Romme and Despain, 1989: 24–25, heavily modified).

Threatened biodiversity

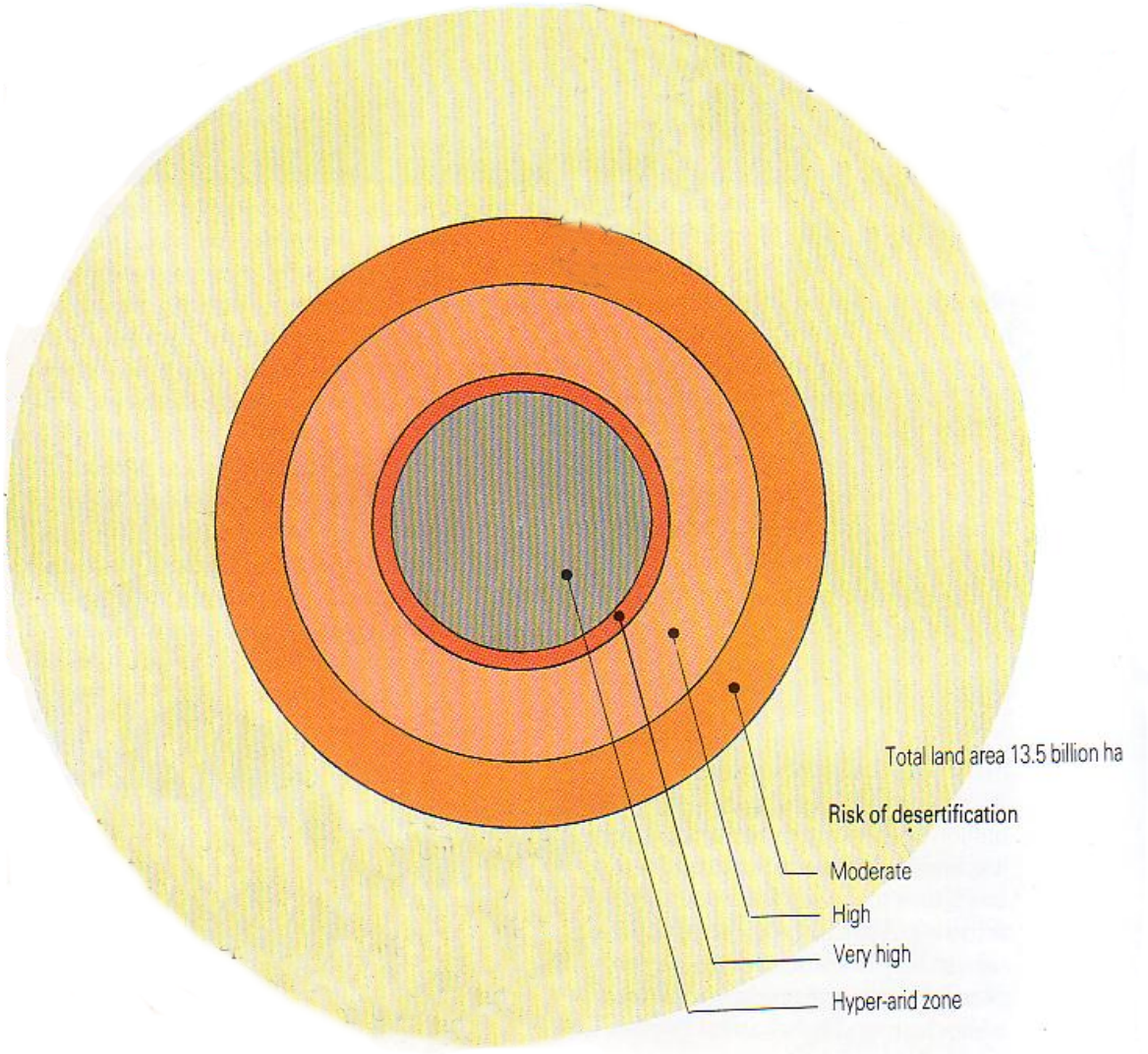


The role of biodiversity

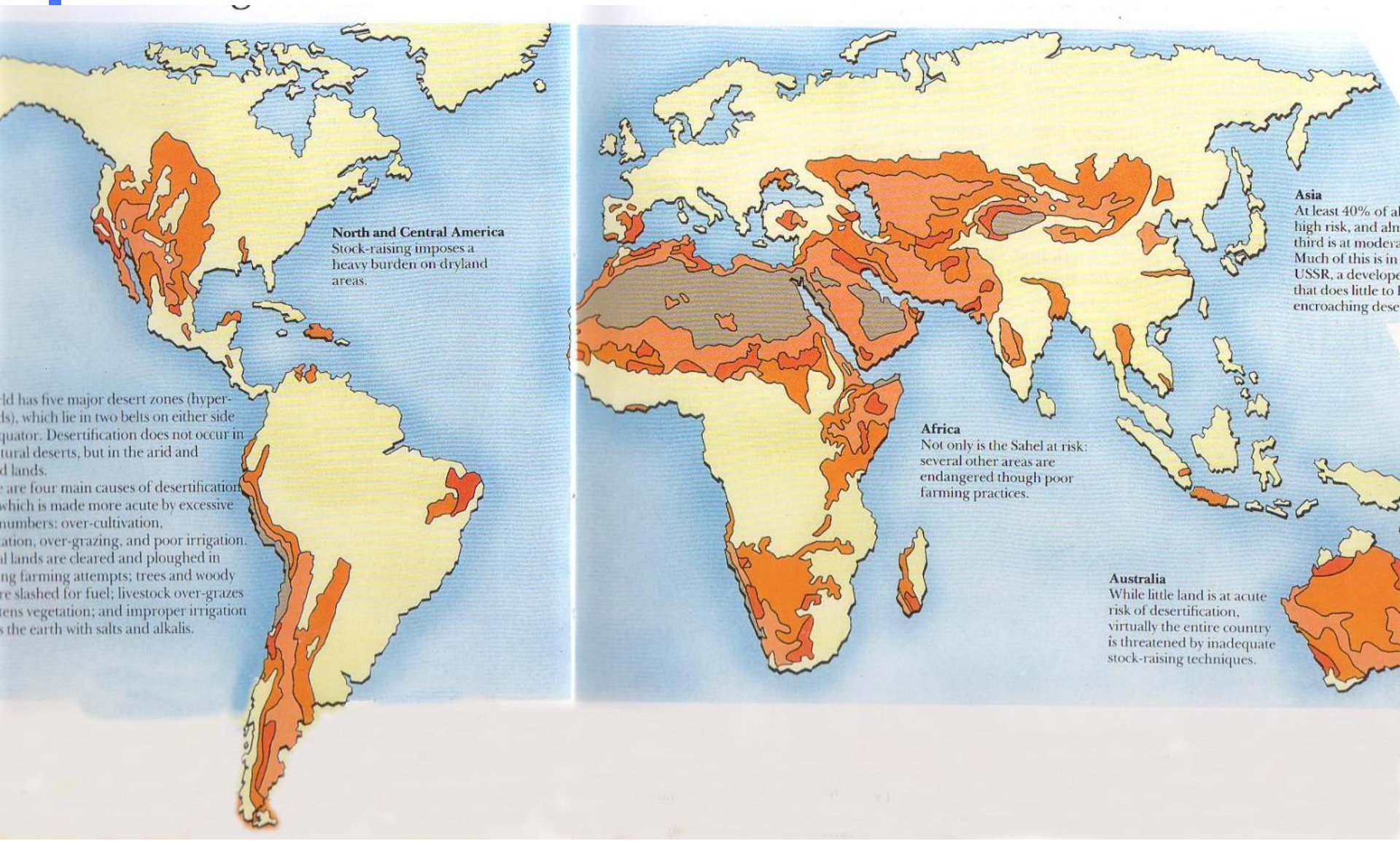
Wolfs in Yellowstone National Park

https://saywhat.news/wolf-facts-70-uncanny-facts-about-wolfs/

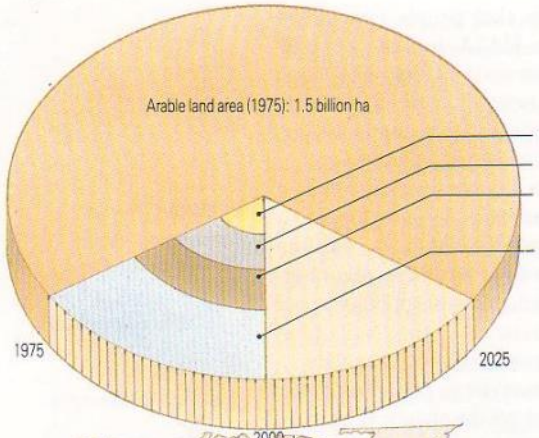
Desertification



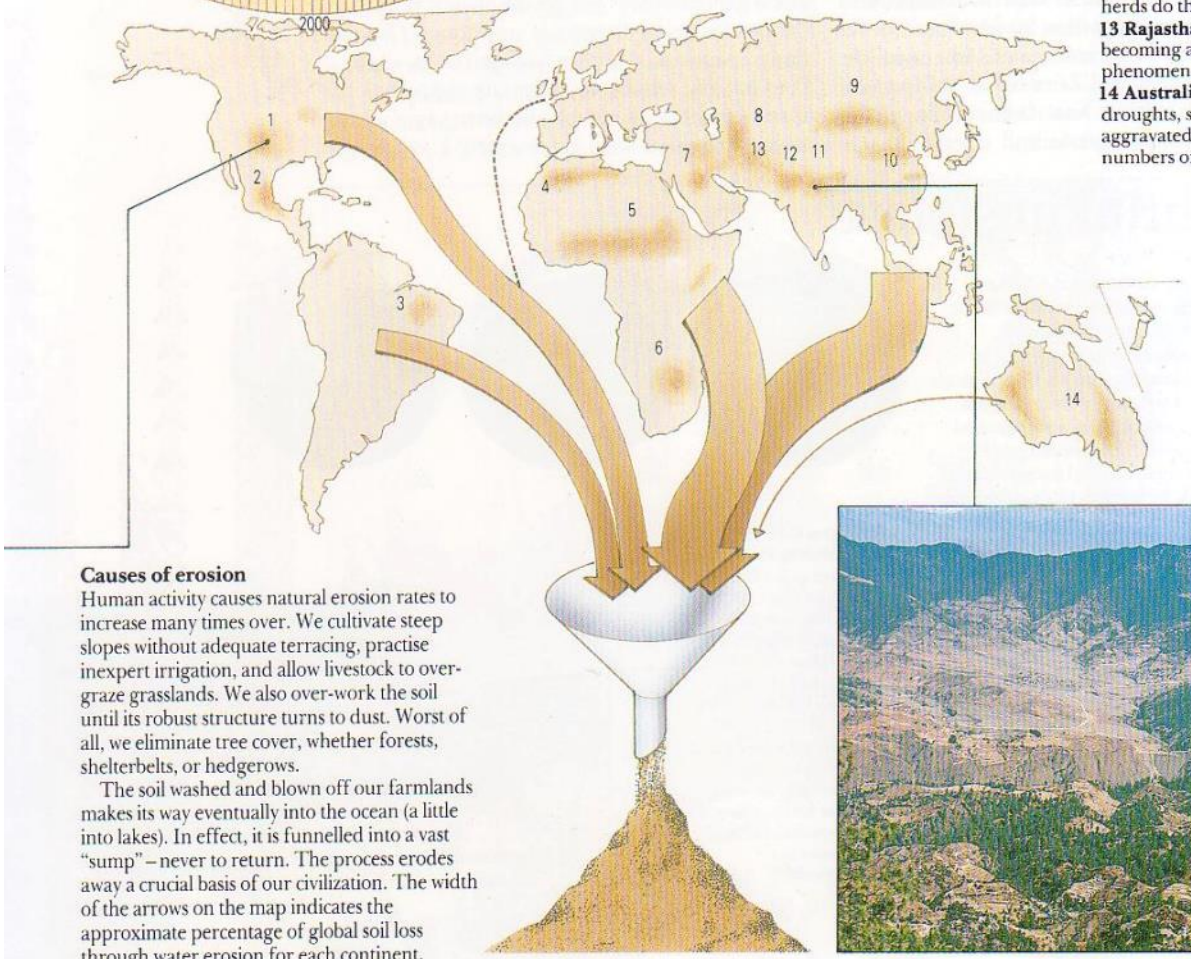
Desertification



Soil Erosion



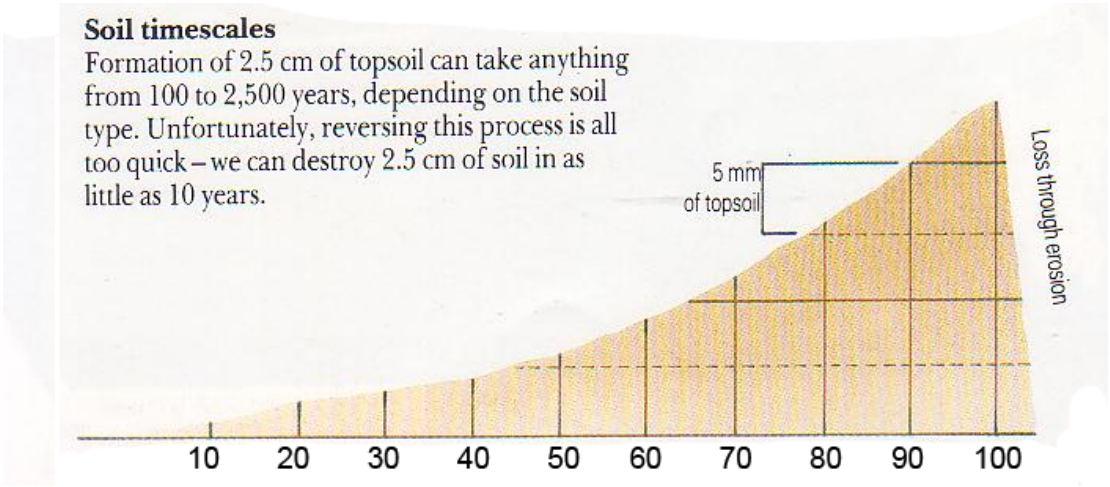
Erosion hotspots
Areas of severe erosion are listed below.
1 US Unsustainable pressure on soils in the grain lands.
2 Mexico Experiencing erosion and droughts.
3 NE Brazil 40 million people grossly over-load fragile lands.
4 N Africa Much erosion, despite attempts to halt the desert through tree belts.
5 Sahel Probably the worst wind erosion area on Earth.
6 Botswana – Namibia Excessive livestock herds accelerate erosion.
7 Middle East Erosion, a problem for centuries, now spreading faster than ever.
8 Central Asia Again, too many livestock, too little careful management.
9 Mongolia Growing numbers of people and growing herds over-burden the environment.
10 Yangtse China is reported to lose 5 billion tonnes of fine "loess" soil annually.
11 Himalayan foothills The worst erosion hotspot (see below).
12 Baluchistan Traditional stock-raising and large herds do the damage.
13 Rajasthan Droughts are becoming a permanent phenomenon.
14 Australia Long droughts, sometimes aggravated by excessive numbers of stock.



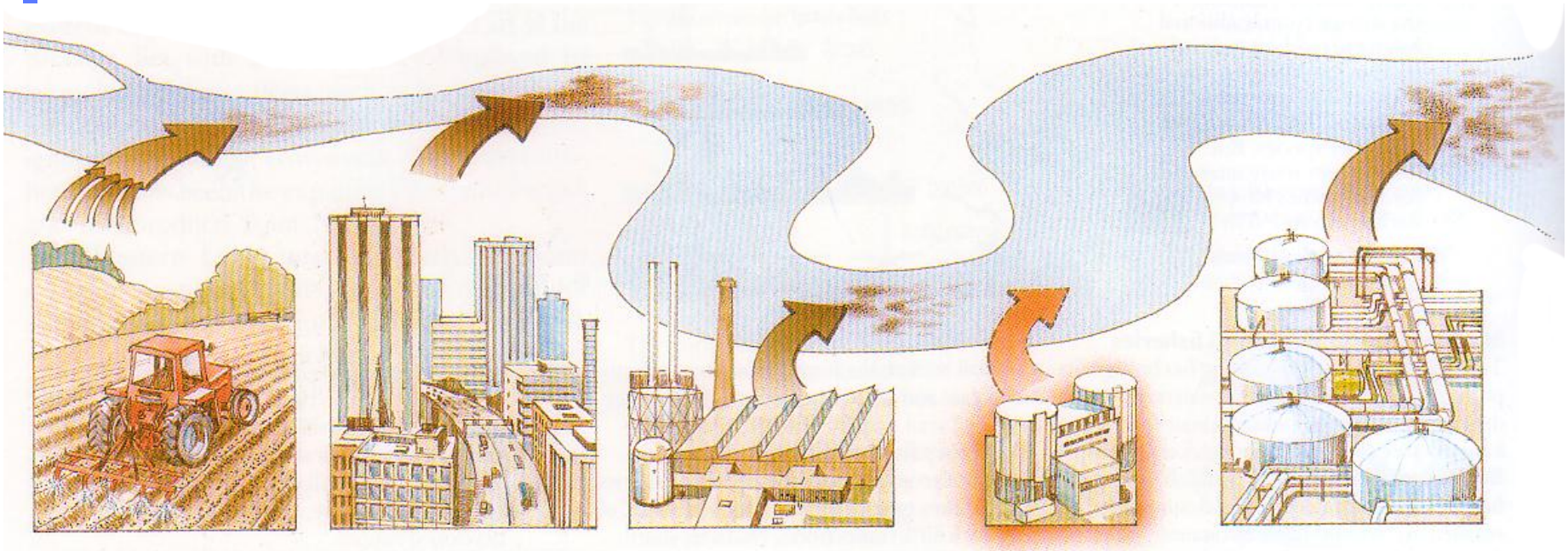
Causes of erosion
Human activity causes natural erosion rates to increase many times over. We cultivate steep slopes without adequate terracing, practise inexpert irrigation, and allow livestock to over-graze grasslands. We also over-work the soil until its robust structure turns to dust. Worst of all, we eliminate tree cover, whether forests, shelterbelts, or hedgerows.

The soil washed and blown off our farmlands makes its way eventually into the ocean (a little into lakes). In effect, it is funnelled into a vast "sump" – never to return. The process erodes away a crucial basis of our civilization. The width of the arrows on the map indicates the approximate percentage of global soil loss through water erosion for each continent.

Soil Formation



Ocean Pollution



Agricultural run-off
Pesticides and herbicides, not readily bio-degradable, are persistent pollutants. As they pass through marine food chains, their effect is concentrated. Nitrates from fertilizers over-enrich water, causing algal growth and eventual deoxygenation.

Urban centres
Municipal drainage systems pour out domestic and industrial sewage, contaminated with toxic chemicals, heavy metals, oil, and organic nutrients. Construction sites release enormous amounts of sediment into rivers.

Industry
Much of the complex mix that goes into industrial waste ends up in the sea. Included in this mélange are partially bio-degradable food wastes, heavy metals, and persistent pesticides. It often takes a human casualty to alert us to the source of the pollution.

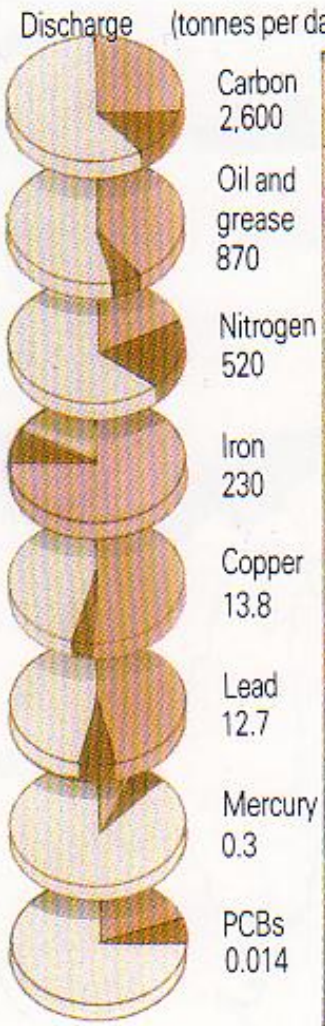
Nuclear facilities
Radioactive effluent is discharged into coastal waters from nuclear-fuel reprocessing plants such as those at Sellafield (UK) and Cap de la Hague (France). Both facilities have been implicated in sickness and deaths of local people.

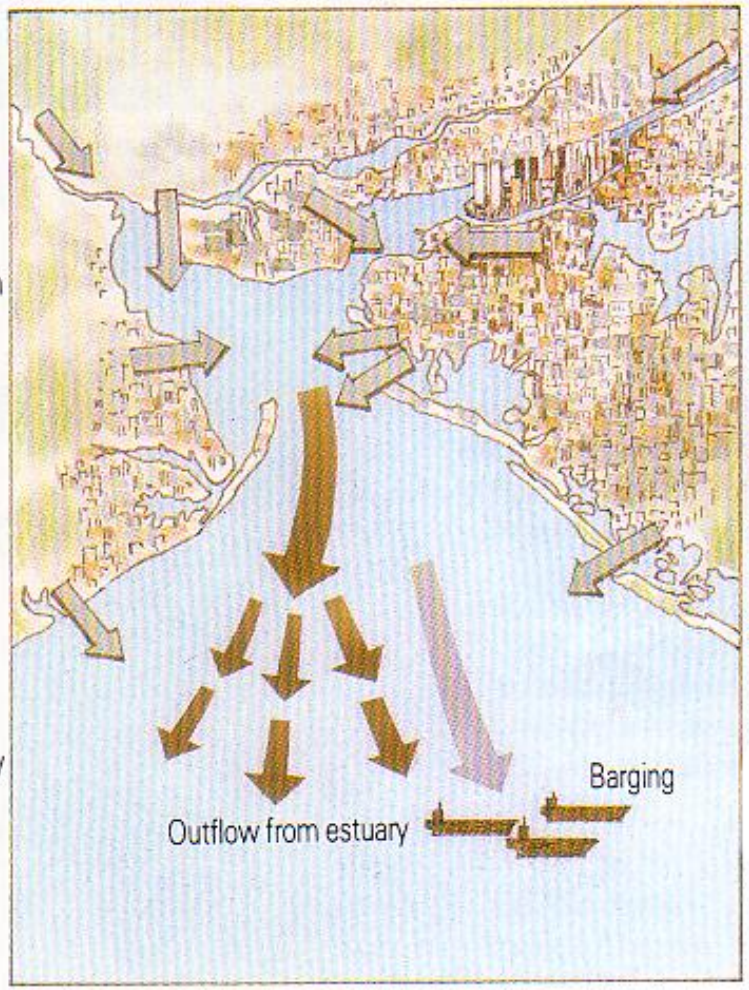
Oil refineries
Oil terminals tend to be sited along coasts, often built on valuable saltmarsh or near productive estuaries. Accidental oil loss and seepage from refineries contribute some 100,000 tonnes of oil annually to ocean pollution.

New York Bay pollution

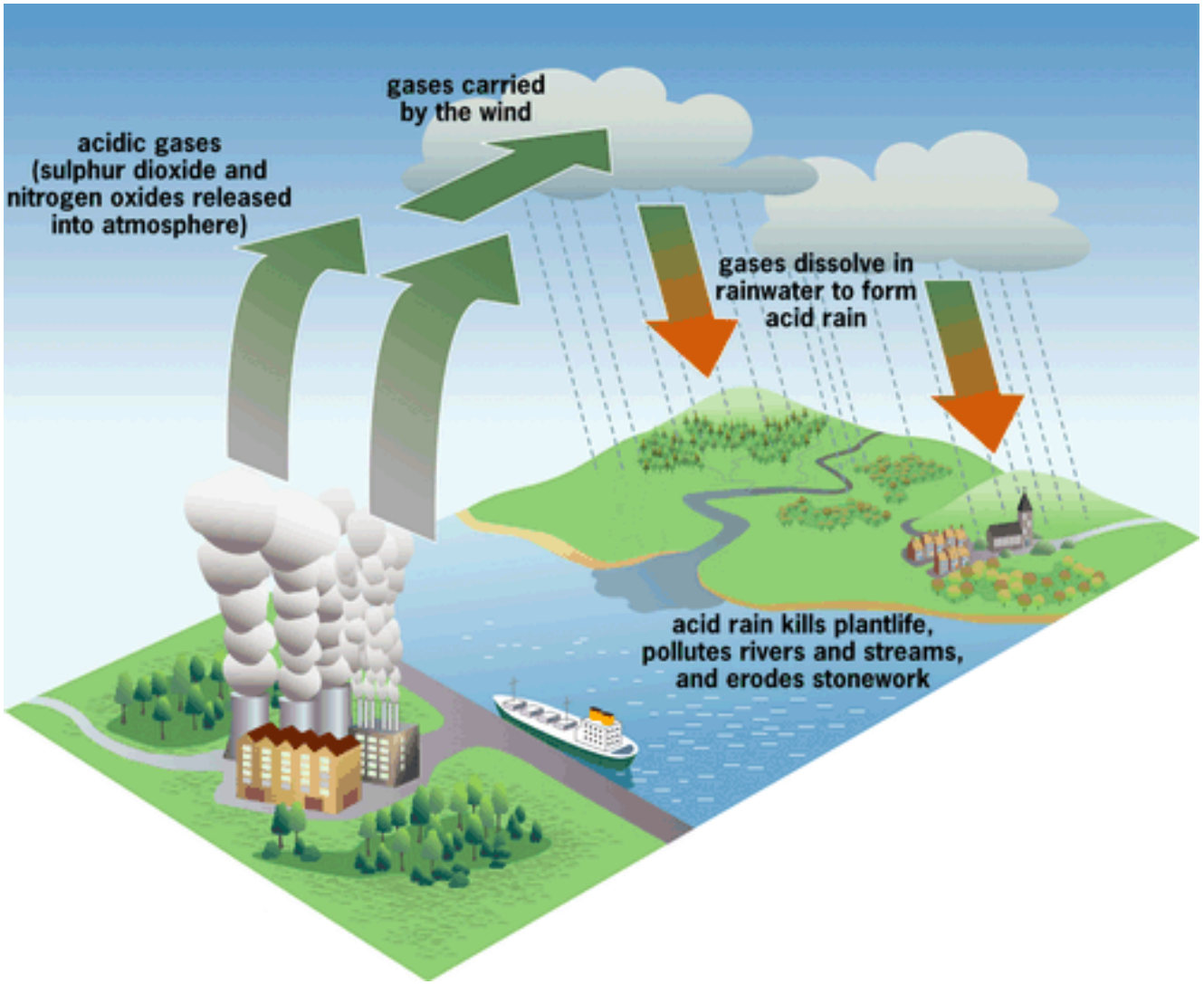
The New York Bight

The severe pollution of the New York Bight has been caused by years of waste discharges and dumping. The pie-charts give the proportion of waste elements that ended up in the waterways either from the land or barging of wastes during the 1980s. Thankfully, the dumping of waste has now been banned.

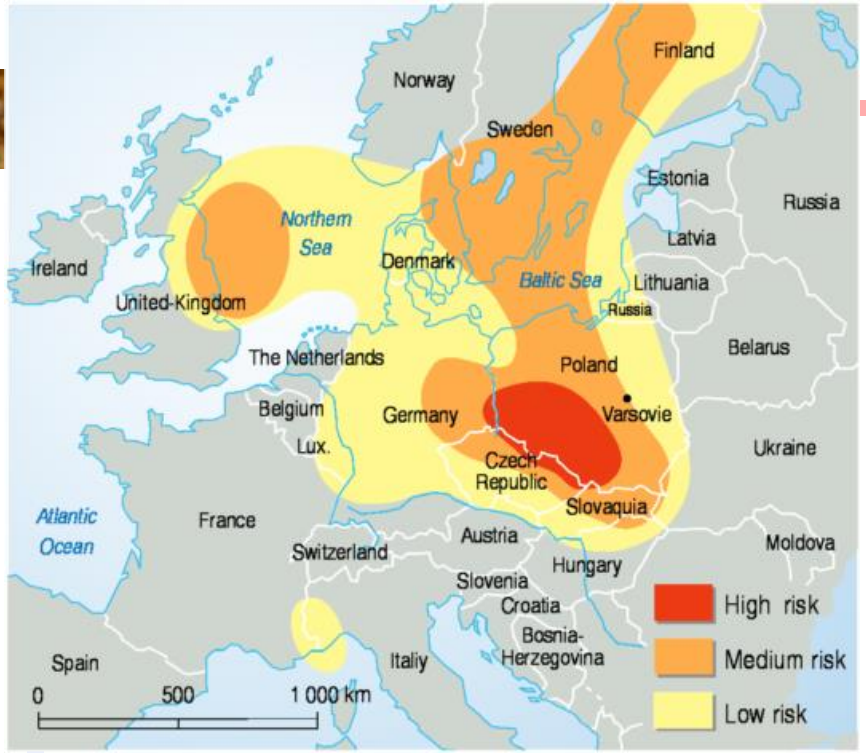


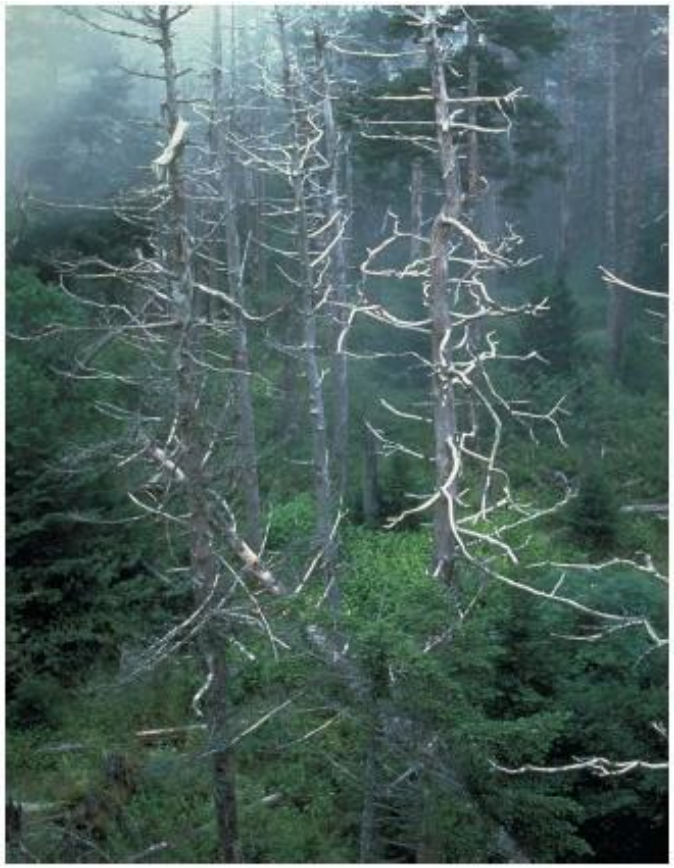


Acid Rain


gases carried
by the wind
acidic gases
(sulphur dioxide and
nitrogen oxides released
into atmosphere)
gases dissolve in
rainwater to form
acid rain
acid rain kills plantlife,
pollutes rivers and streams,
and erodes stonework

Acid Rain


Finland
Norway
Sweden
Estonia
Russia
Northern Sea
Latvia
Ireland
Denmark
Baltic Sea
Lithuania
United-Kingdom
Russia
Belarus
The Netherlands
Poland
Belgium
Germany
Varsovie
Lux.
Ukraine
Czech Republic
Slovaquia
Atlantic Ocean
France
Austria
Moldova
Switzerland
Hungary
Slovenia
Croatia
High risk
Bosnia-Herzegovina
Medium risk
Spain
Italiy
Low risk
0
500
1 000 km

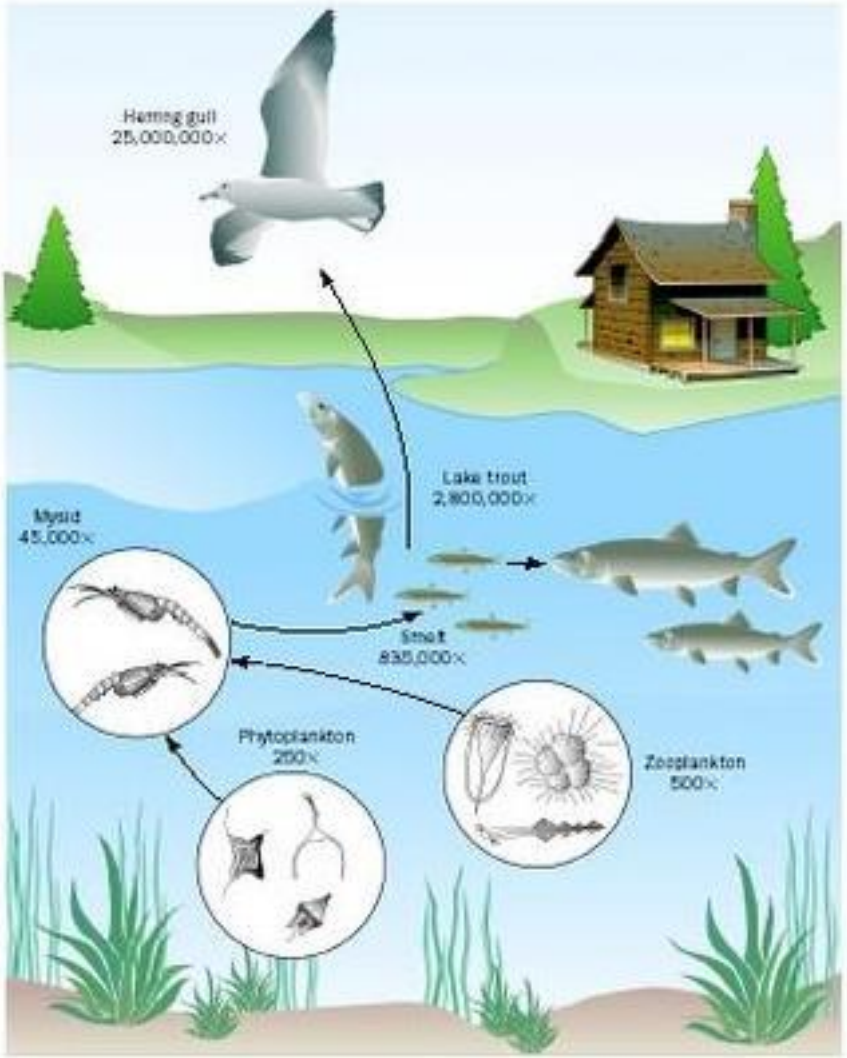


Lluvia ácida

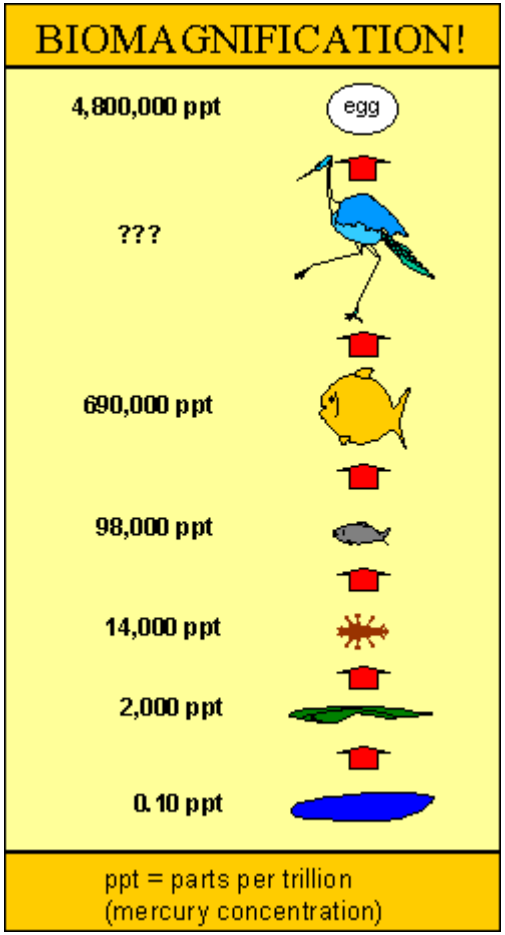
Use of Agrochemicals

Use of Agrochemicals

Eutrophication

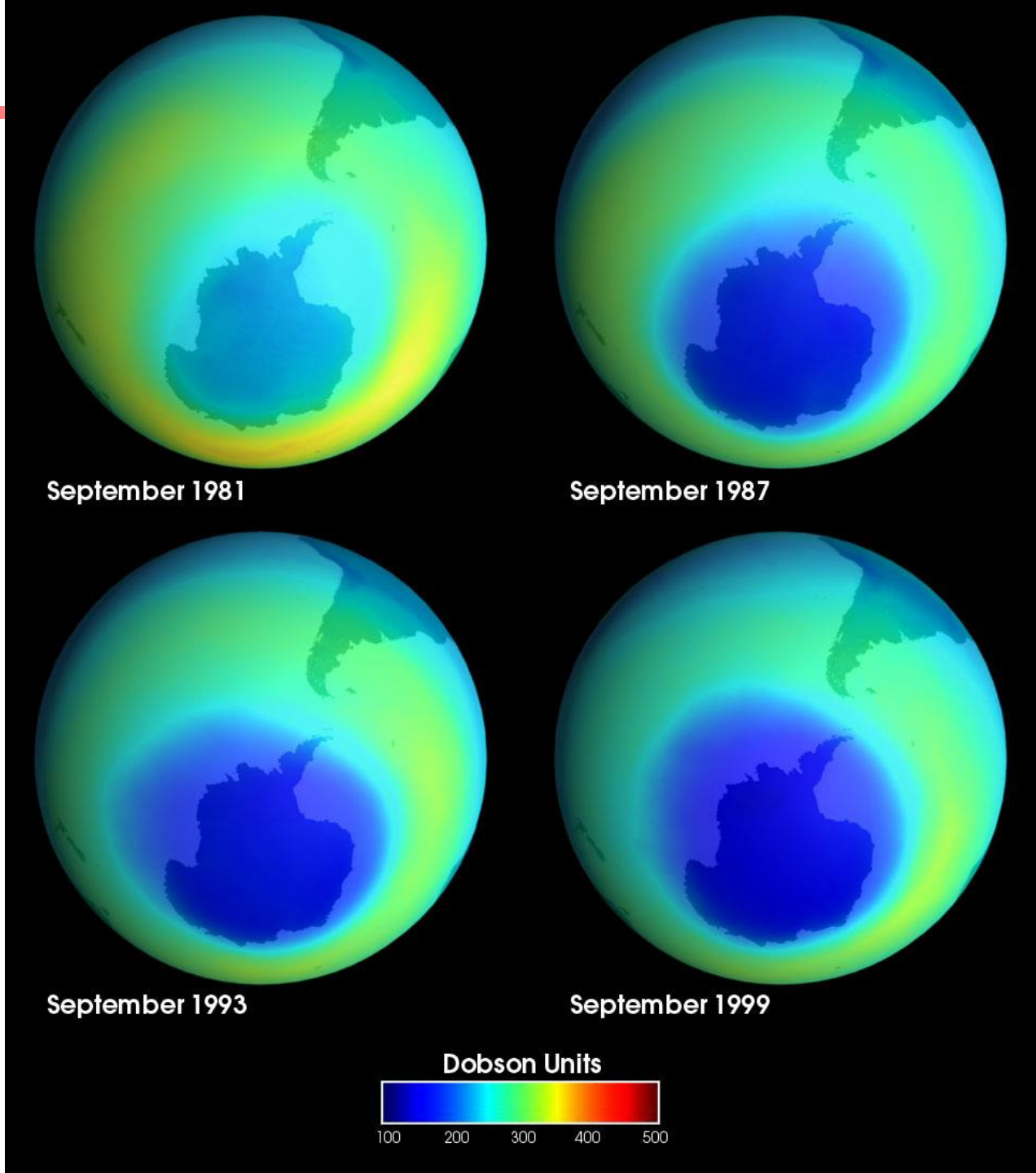


Bioacumulation

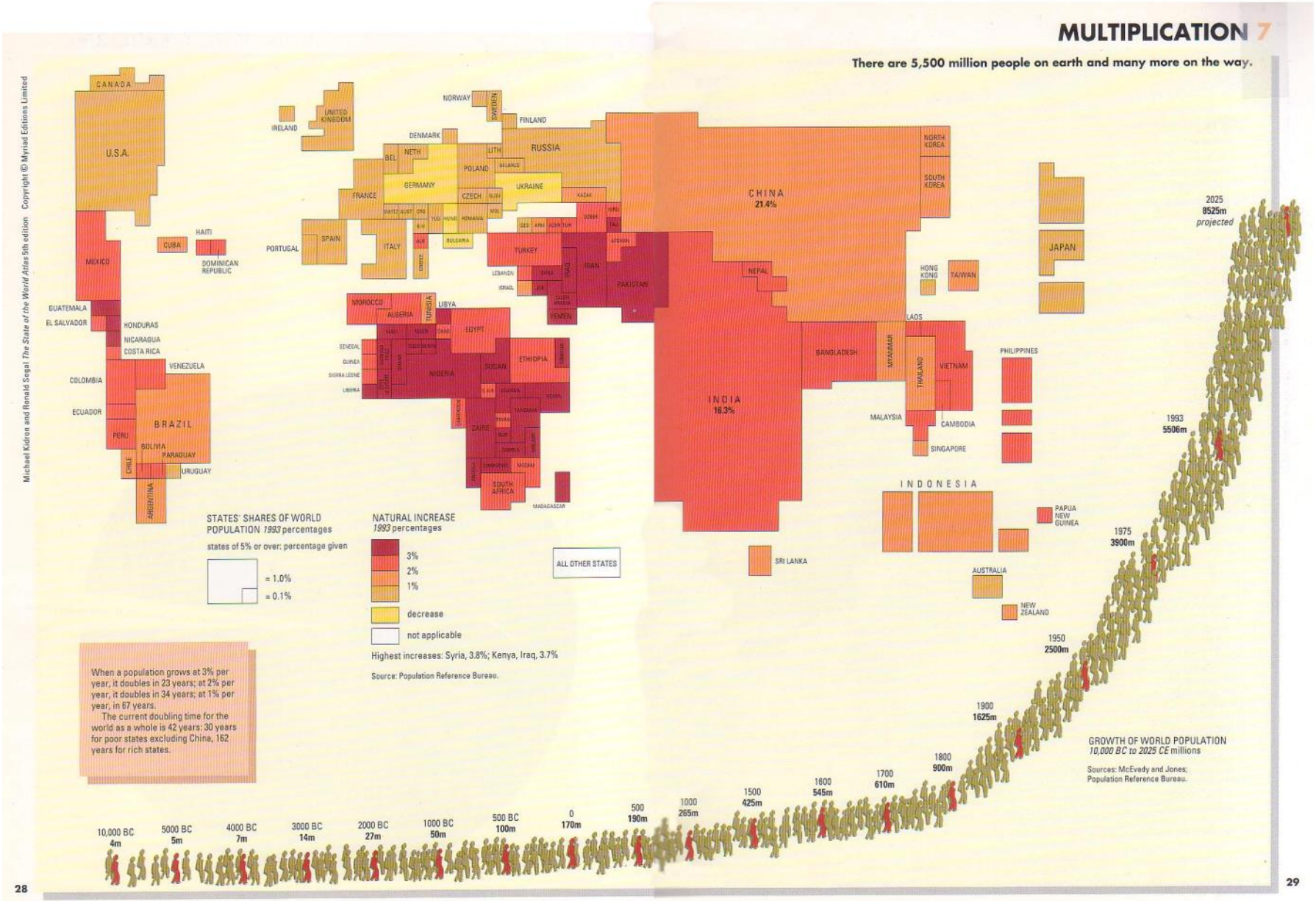


Atmospheric Pollution

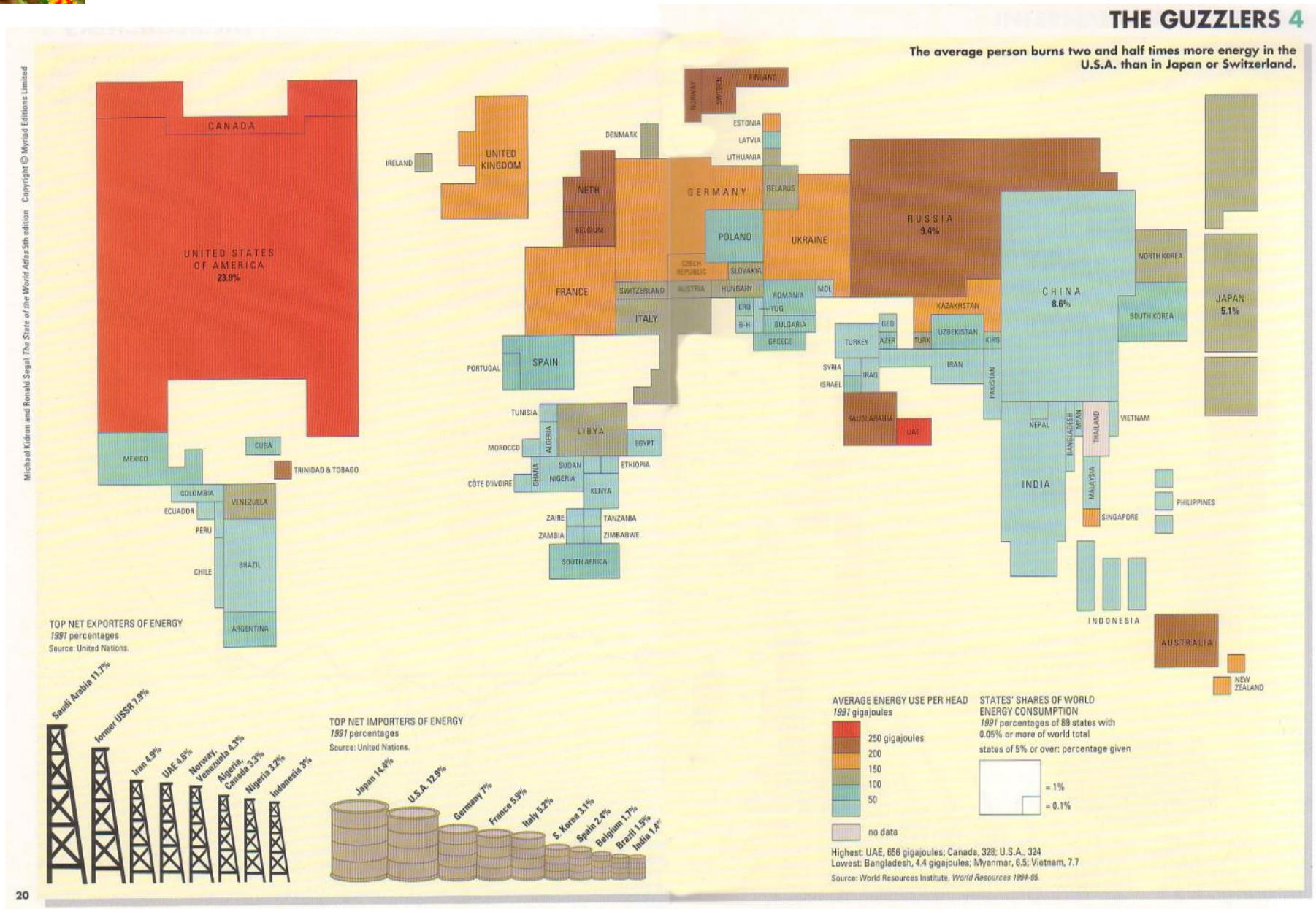
Ozone layer depletion



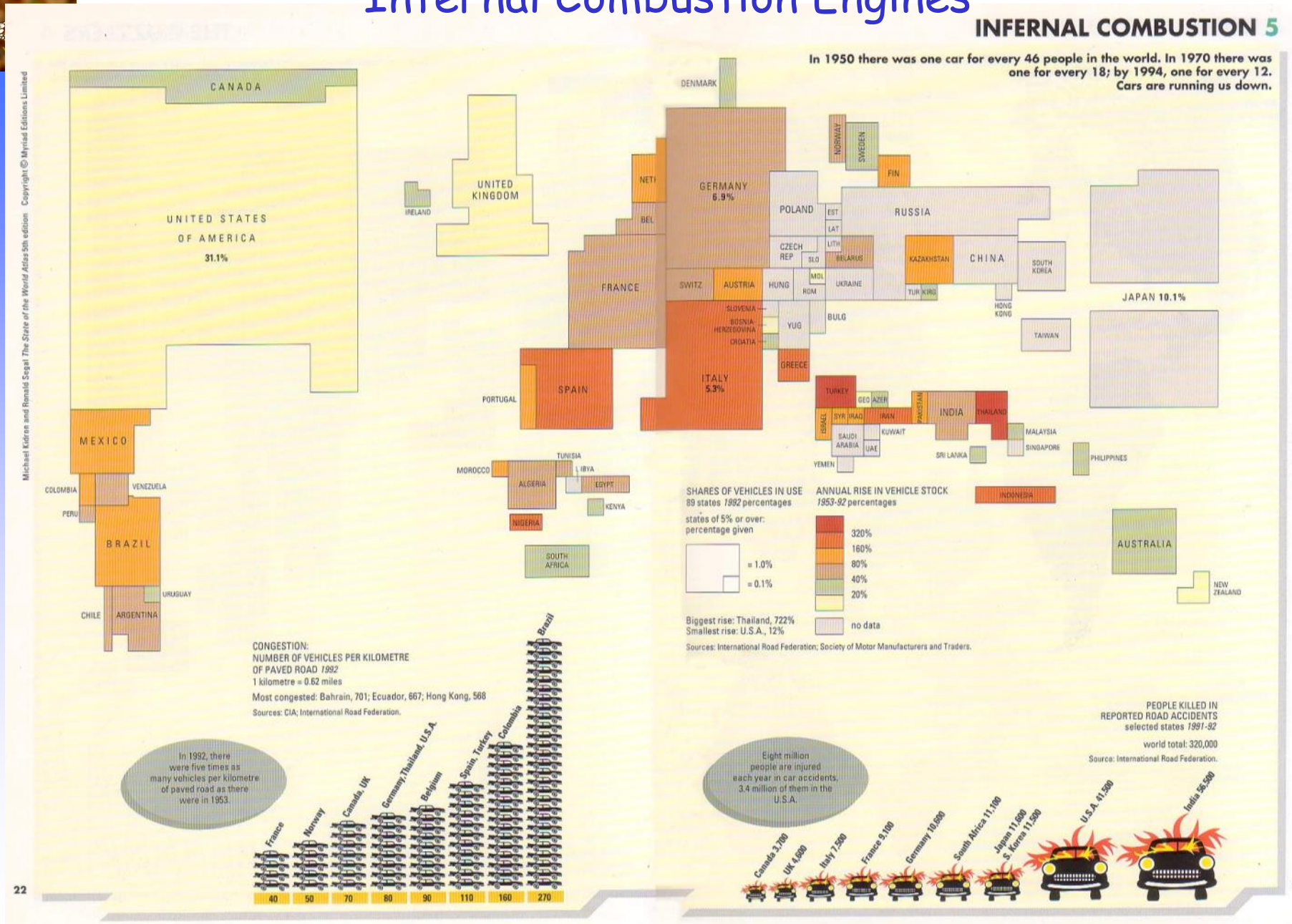
Population Growth



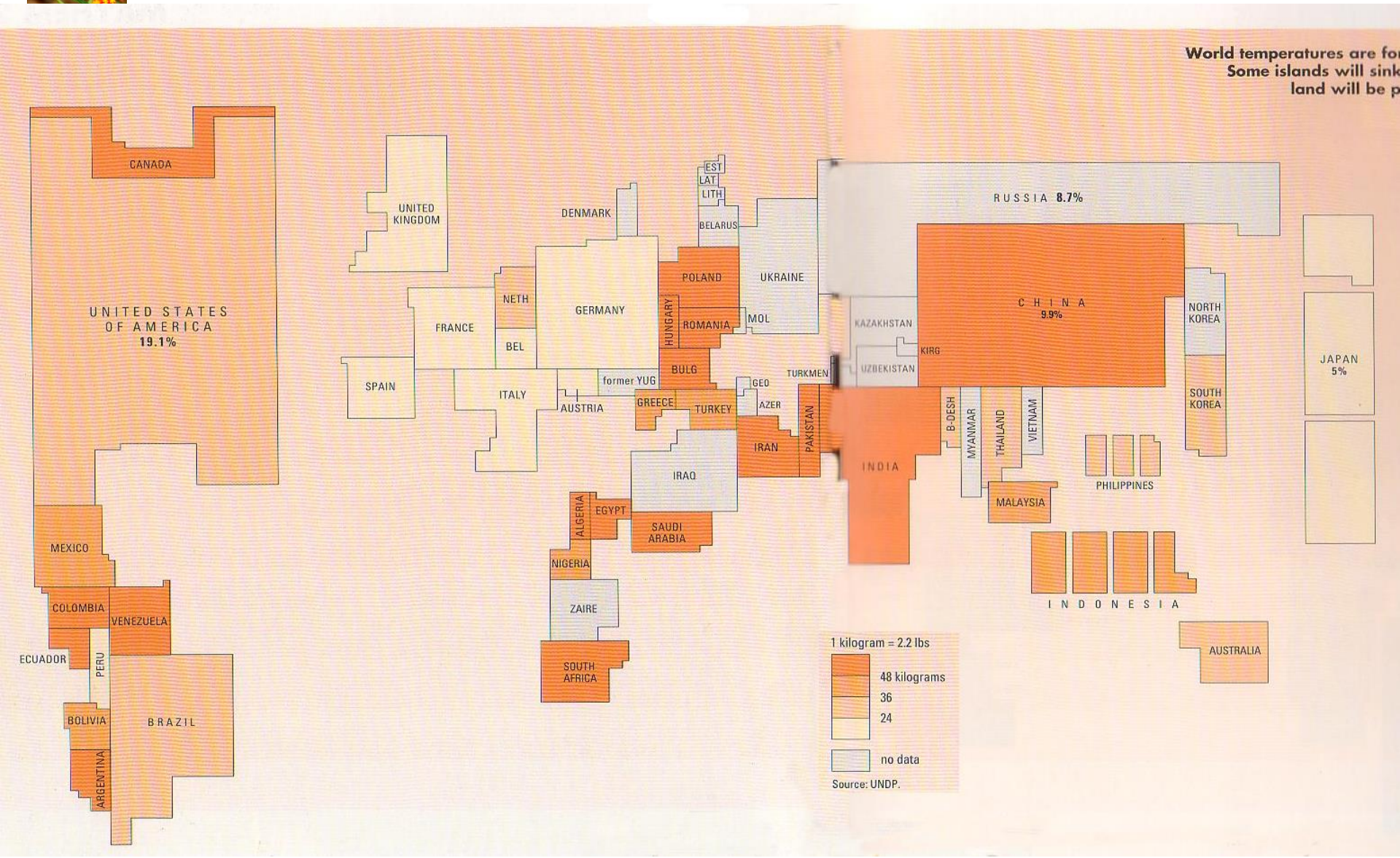
Fossil Fuels Consumption



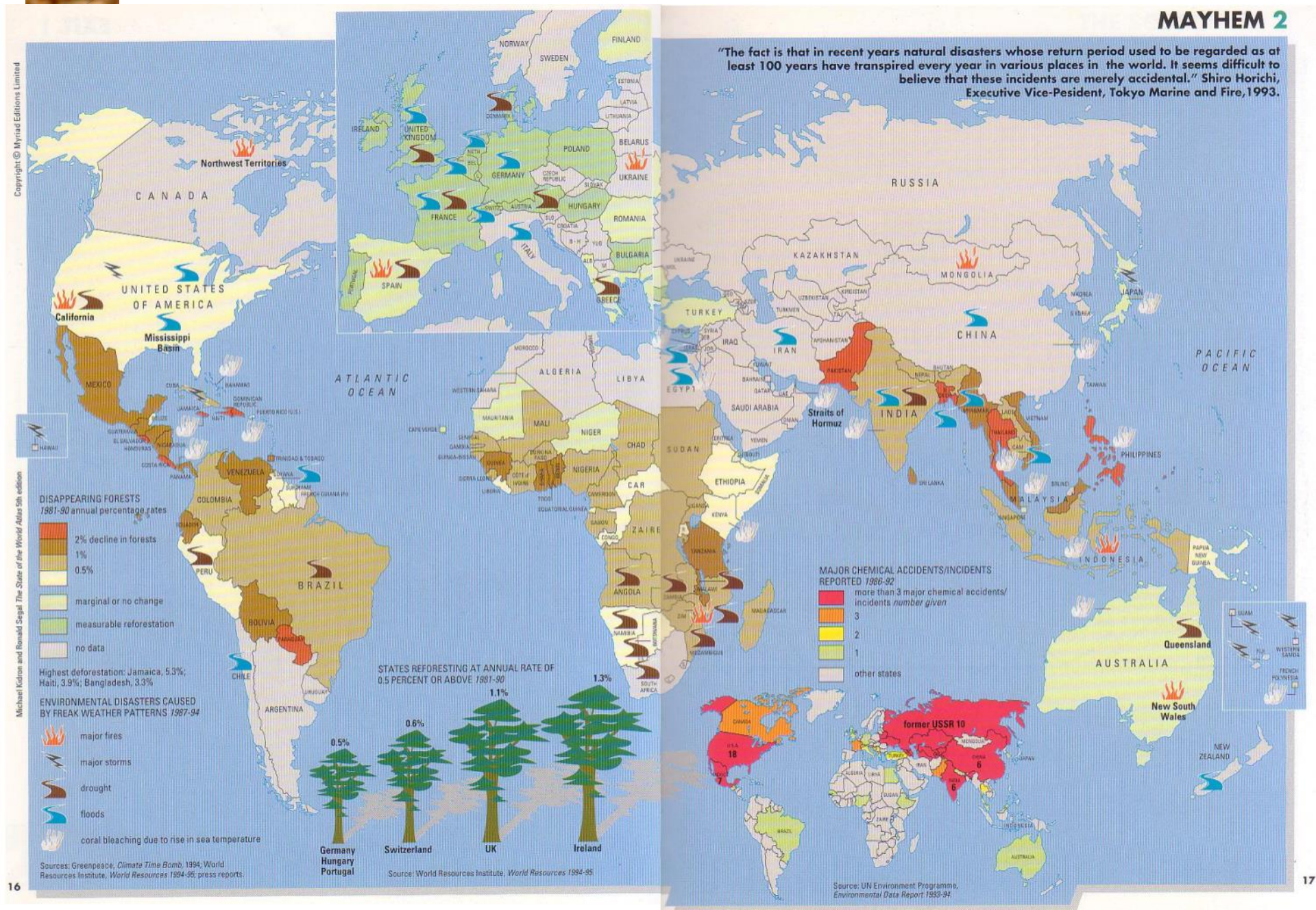
Internal Combustion Engines



Global Warming



Natural Risks



Poor environmental management leads to violent conflict and the brink of collapse.

J. Diamond