Natural Resources

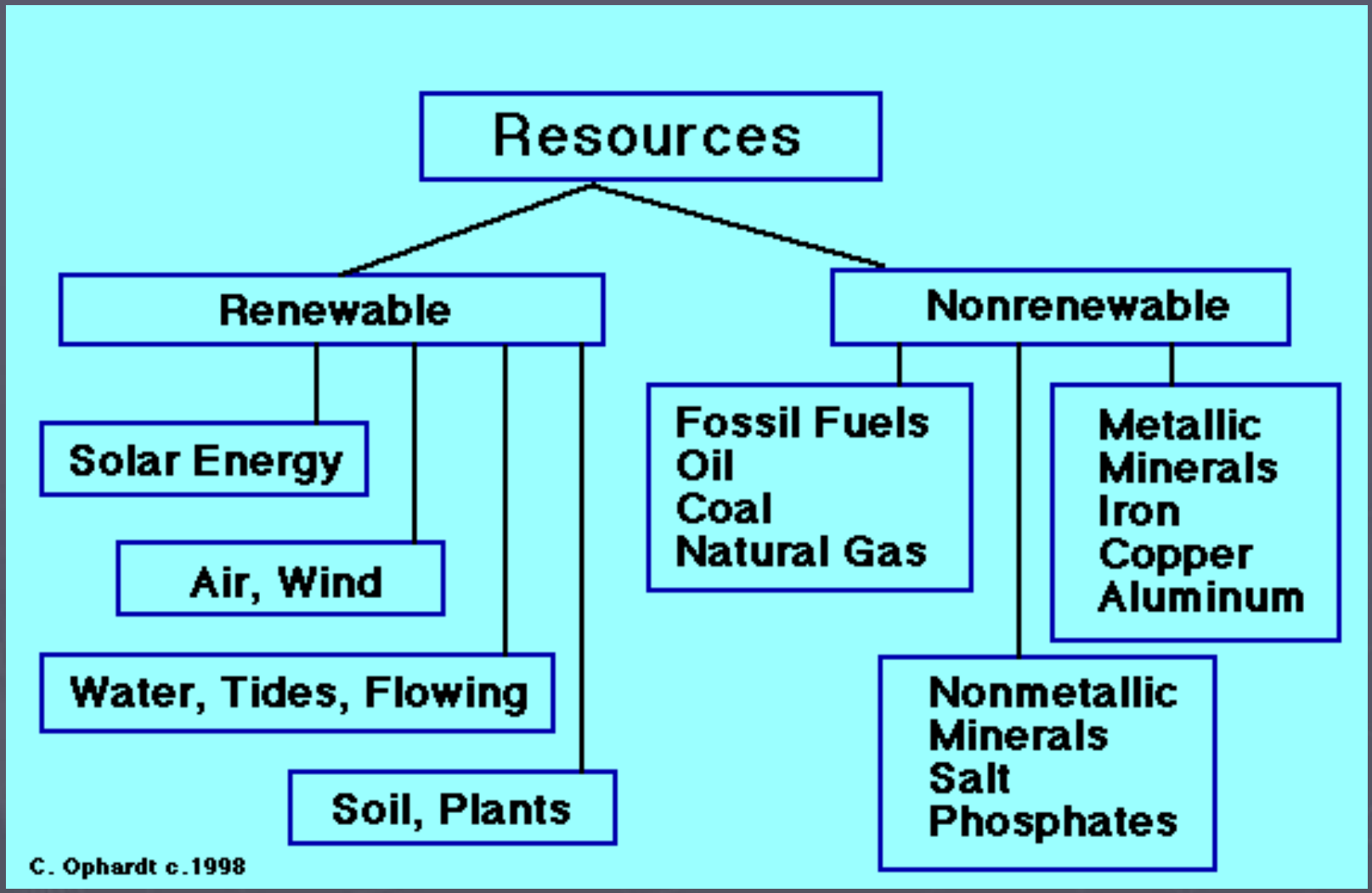
Renewable and non-Renewable Resources uses and their Issues

Natural Resources

- Naturally occurring materials that humans view as necessary/useful for its economic/material well-being
  - Renewable
    - Can be replenished in a human lifetime
  - Non-renewable

Resource Collection

- Two classifications:
  - Gathering industries
    - Harvesting of renewable resources
  - Extractive industries
    - Removal of non-renewable minerals


Resources
Renewable
Nonrenewable
Solar Energy
Air, Wind
Water, Tides, Flowing
Soil, Plants
Fossil Fuels
Oil
Coal
Natural Gas
Metallic
Minerals
Iron
Copper
Aluminum
Nonmetallic
Minerals
Salt
Phosphates
C. Ophardt c.1998

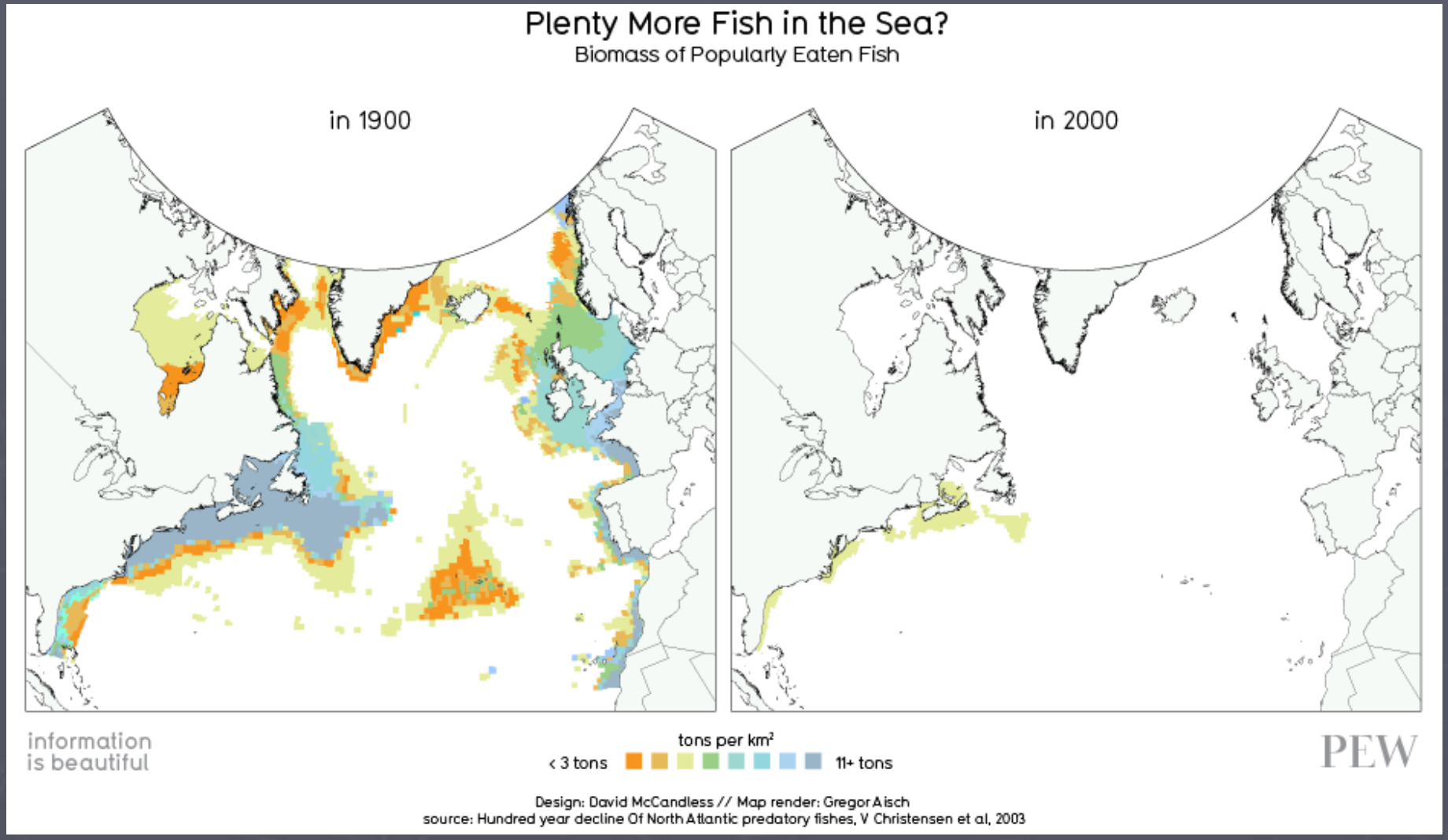
Fishing

- Primary Sector of the Economy
- Renewable resource?
- Major resource
  - 75% of world catch = human consumption
    - 1 billion people rely upon this resource
  - 25% = processed fish meal for livestock/fertilizers

Fish Harvesting

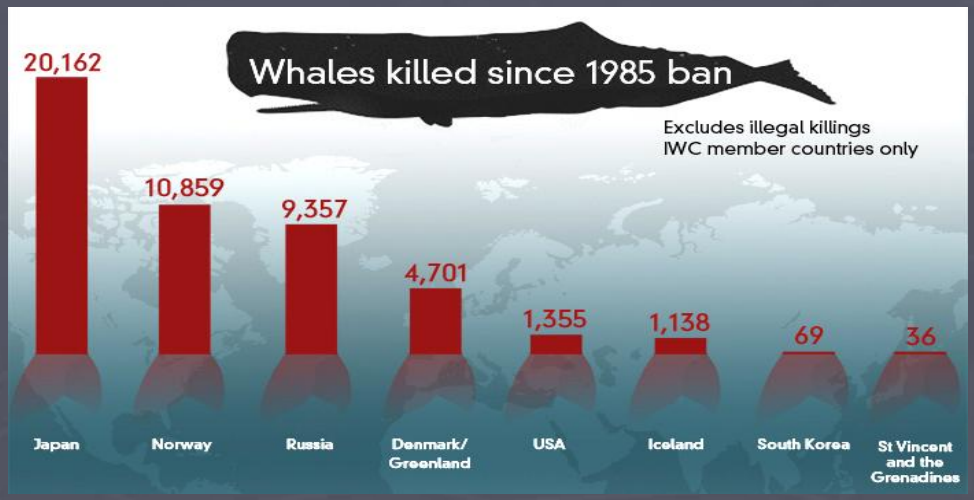
- 120 million tons harvested worldwide per year
  - Maximum sustainable yield is exceeded
- Sources
  - Inland catch
  - Fish farming
  - Marine catch

Fish as a Renewable Resource?



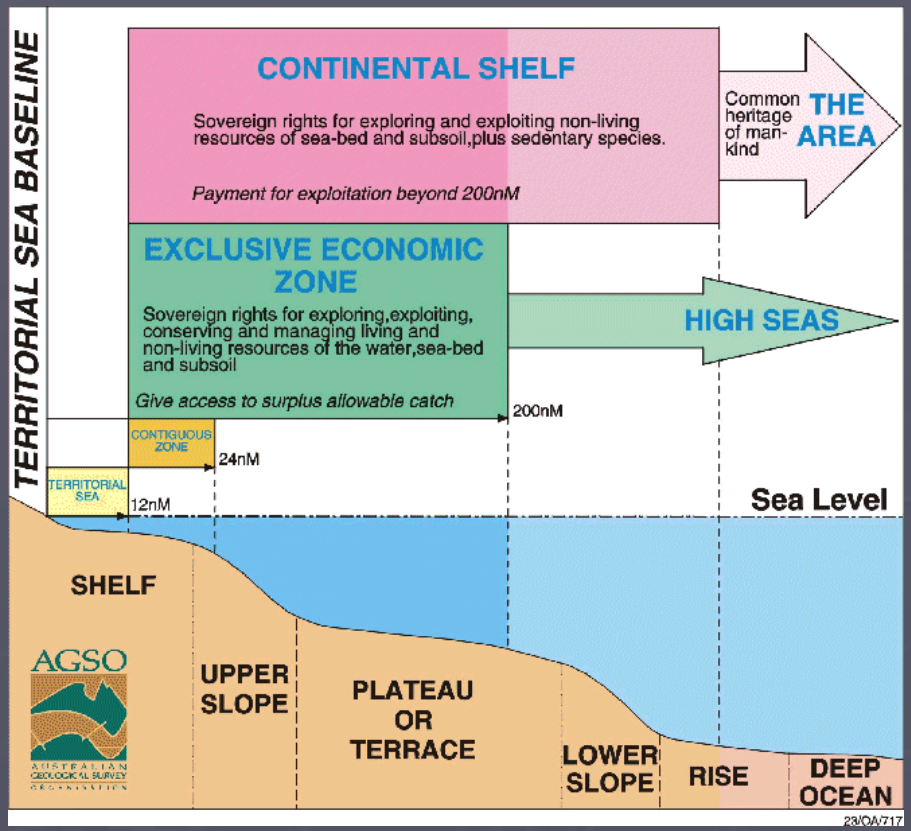
Common Usage

- Accepted view that world's oceans are common property and open to all
- No one is responsible for its maintenance, protection, improvement
  - Each user exploits before someone else can



Response

- 1982 – United Nations Convention on the "Law of the Sea" treaty
  - Gave control of 200 nautical miles to nearest country
- Increasing fish farming
  - Aquaculture – both marine & freshwater

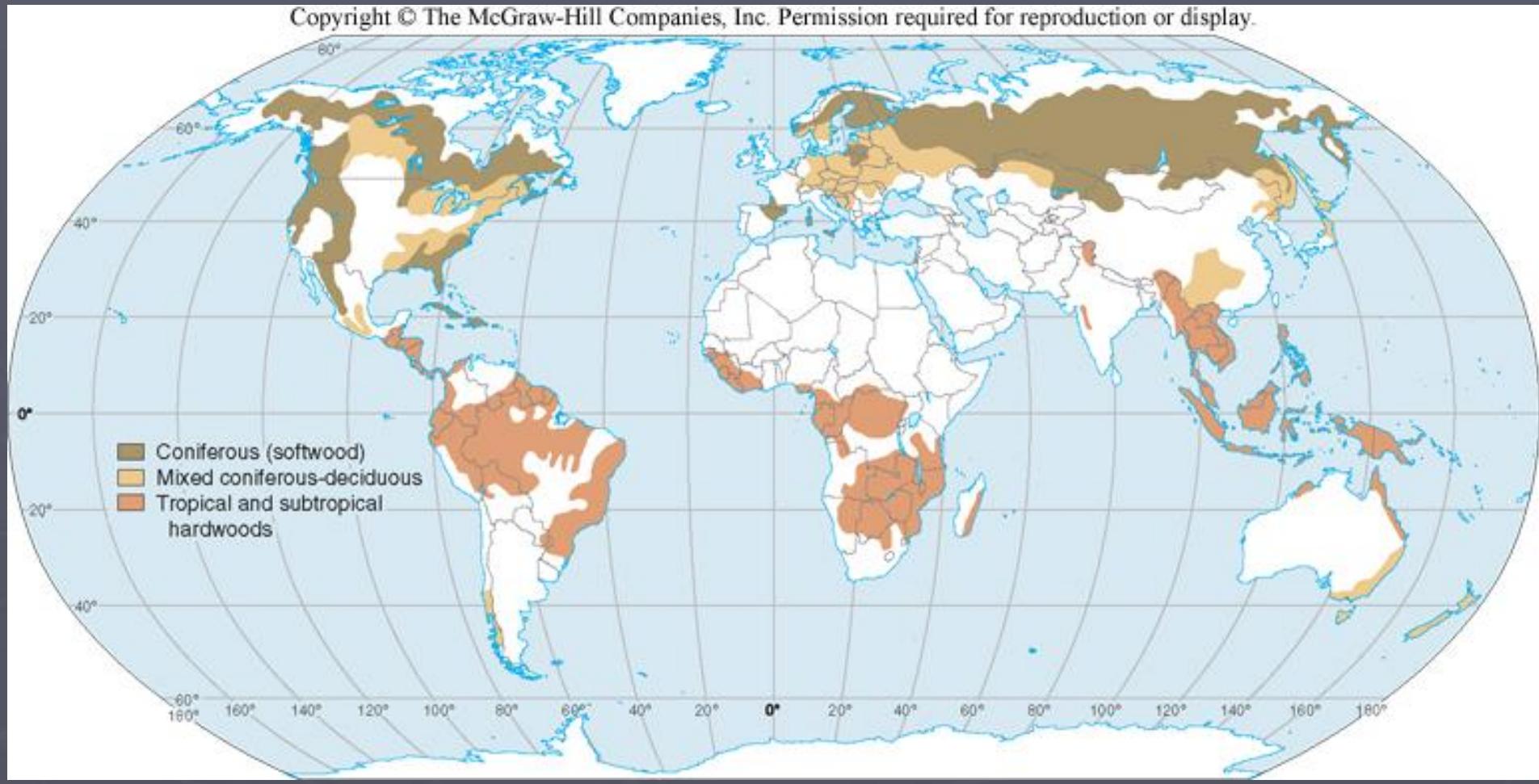


South China Sea Problem

Forestry

- Primary sector of the economy
- Renewable resource?
  - 12,000 years ago forest covered 45% of earth
  - Today forest only covers 30%
- Two large global belts of commercial forests:
  - Upper-middle latitudes of the Northern Hemisphere
  - Equatorial zones of South & Central America, Central Africa, Southeast Asia

Major Commercial Forestry Zones

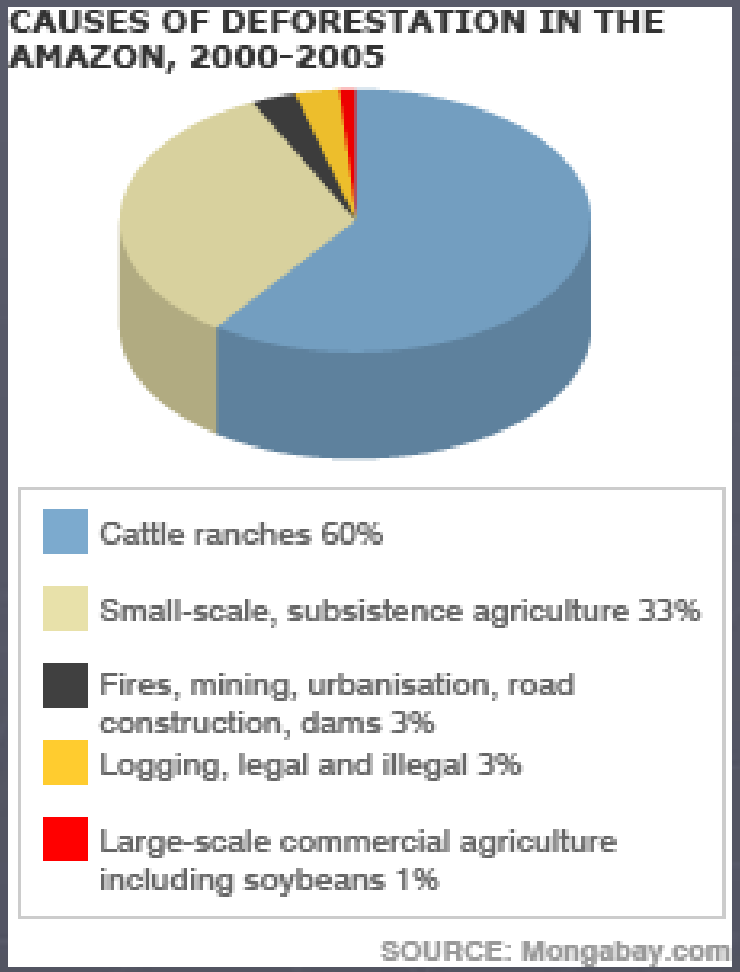


Forestry Threats

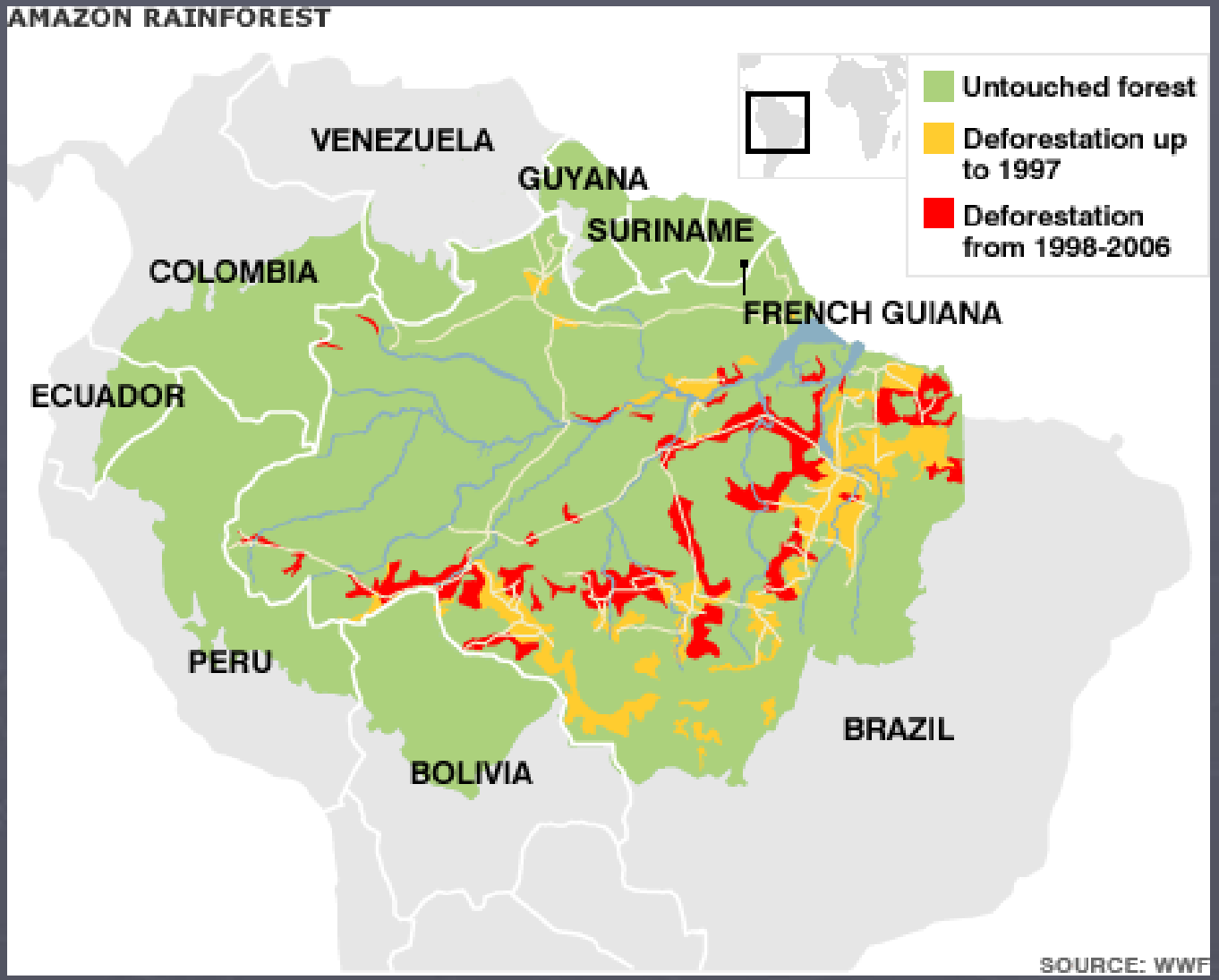
- Threats to global forests
  - Acid rain, Atmospheric pollution, over harvesting, invasive species, slash-and-burn agriculture, Fires
- Forestry Protections
  - Conservation/Reforestation, Government Regulation

Threats to Forests

- Northern forests
  - 45% of timber is for industrial use
- Southern forests
  - 55% of timber is for fuel wood/charcoal use
  - Expensive mahogany extraction
    - Often at expense of other flora
- Forest depletion
  - Loss of a renewable resource
  - Conversion to agricultural lands
  - Economic/ecological implications



Amazon Rainforest Depletion

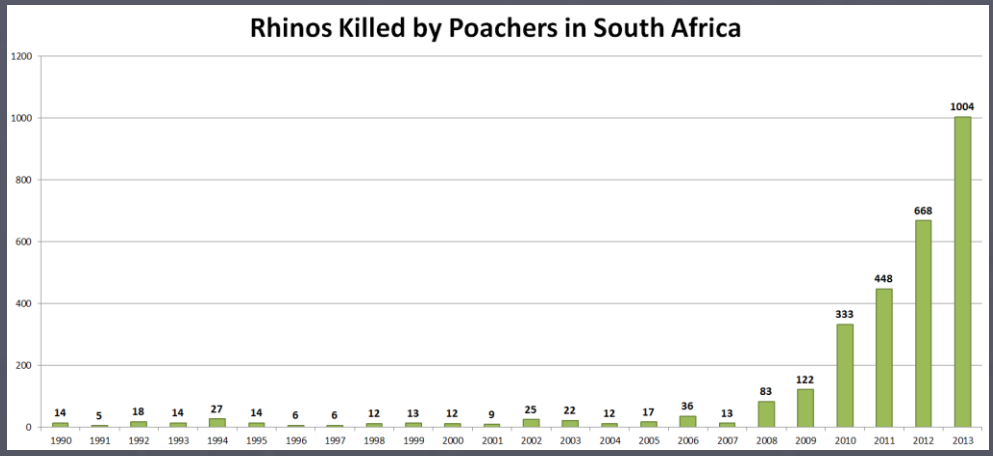


Fur Trapping

- Dependent on northern forests
- Anti-fur campaigns began in 1960s
  - Challenged for inhumane treatment of animals
  - Banning of fur products
- Farmed furs are 85% of industry today

Poaching

- Illegal hunting of animals
  - Especially big-game and exotic animals
- Black market trade
  - Ivory
  - Furs
  - Animal parts



Mining and Quarrying

- Primary sector of the economy
  - Distribution is uneven, determined by past geologic events
    - Ease of access to materials
- Extraction is possible with technology
  - Deeper materials require more technology for extraction

Metallic Minerals

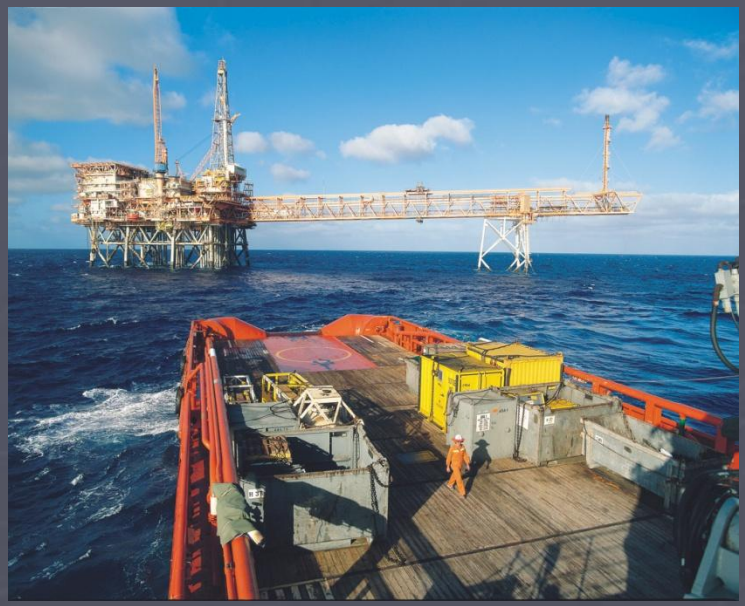
- Most important Copper, Lead, Iron ore
- Most abundant locations:
  - Russia, Canada, China, United States, Brazil, Australia
- Production is balanced by:
  - 1. Quantity available
  - 2. Richness of ore
  - 3. Distance to markets

Non-Metallic Minerals

- Most Common are sand/gravel, gypsum, limestone, building stone
- Two types of usage:
  - Construction use (ingredients for cement)
  - Fertilizer use (potash, phosphate)

Mineral Fuels

- Fossil fuels
  - Made industrial revolution possible
  - Non-renewable
    - Coal, Petroleum, Natural gas



Coal Mining

- United States, China, Northern Hemisphere
- Open-pit (surface mining)
  - Very damaging to environment
- shaft mining
  - expensive, more dangerous
- Very polluting – slag heaps, ecosystem destruction
- Bulky to move

Natural Gas

- 25% of global energy consumption
- Popular due to:
  - Highly efficient, versatile
  - Requires little processing
  - Environmentally safe
- Problems:
  - Uneven distribution
  - Difficult to move
  - Limited supply

Petroleum/Oil

- 75% of proven reserves in just 7 countries
- Usage boomed in 20th century
- Costs & effects:
  - Cheaper & easier to move than coal
  - Polluting – global warming
  - Reserves are diminishing
  - Due to distribution & lack of availability – market value fluctuations, politically sensitive