

5.2- Threats to Biodiversity

Extinction Rates

background extinction- The gradual process of species becoming extinct

Scientists are not concerned about the natural process of extinction as much as the increasing rate of extinctions.

Mass extinction when a large percentage of all living species become extinct in a short time.

The current high rate of extinction is due to a single species

– *Homo sapiens*.

Humans are changing conditions on Earth faster than new traits can evolve.

Natural resources- materials and organisms found in the biosphere

Ex: minerals, fossil fuels, nuclear fuels, plants, animals, soil, clean water, clean air, and solar energy.

Factors that Threaten Biodiversity

- Overexploitation
- Habitat loss
- Habitat fragmentation & edge effect
- Pollution
- Introduced Species

overexploitation- excessive use of species that have economic value.

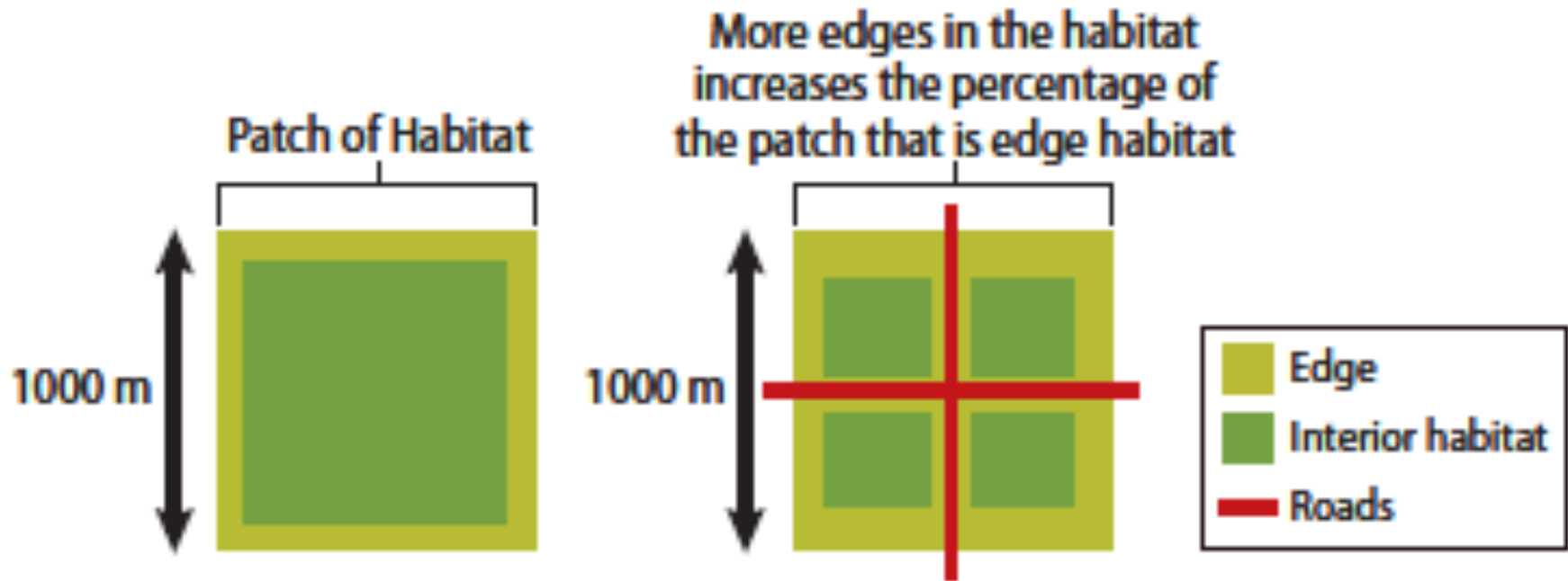
Ex: elephants and sharks



Habitat loss

- **Destruction** of habitat, (ex: clearing tropical rainforests), has a direct impact on global biodiversity.
- **Disruption** of habitat, (ex: overfishing), can start a chain reaction and affect an entire ecosystem.

habitat fragmentation- The separation of an ecosystem into small pieces of land



Problems with fragmentation:

- Smaller pieces of land support fewer species.
- Reduces chances to reproduce
- Decreases genetic diversity
- Creates more edges

Edge effects are different environmental conditions experienced at the boundaries of ecosystems.

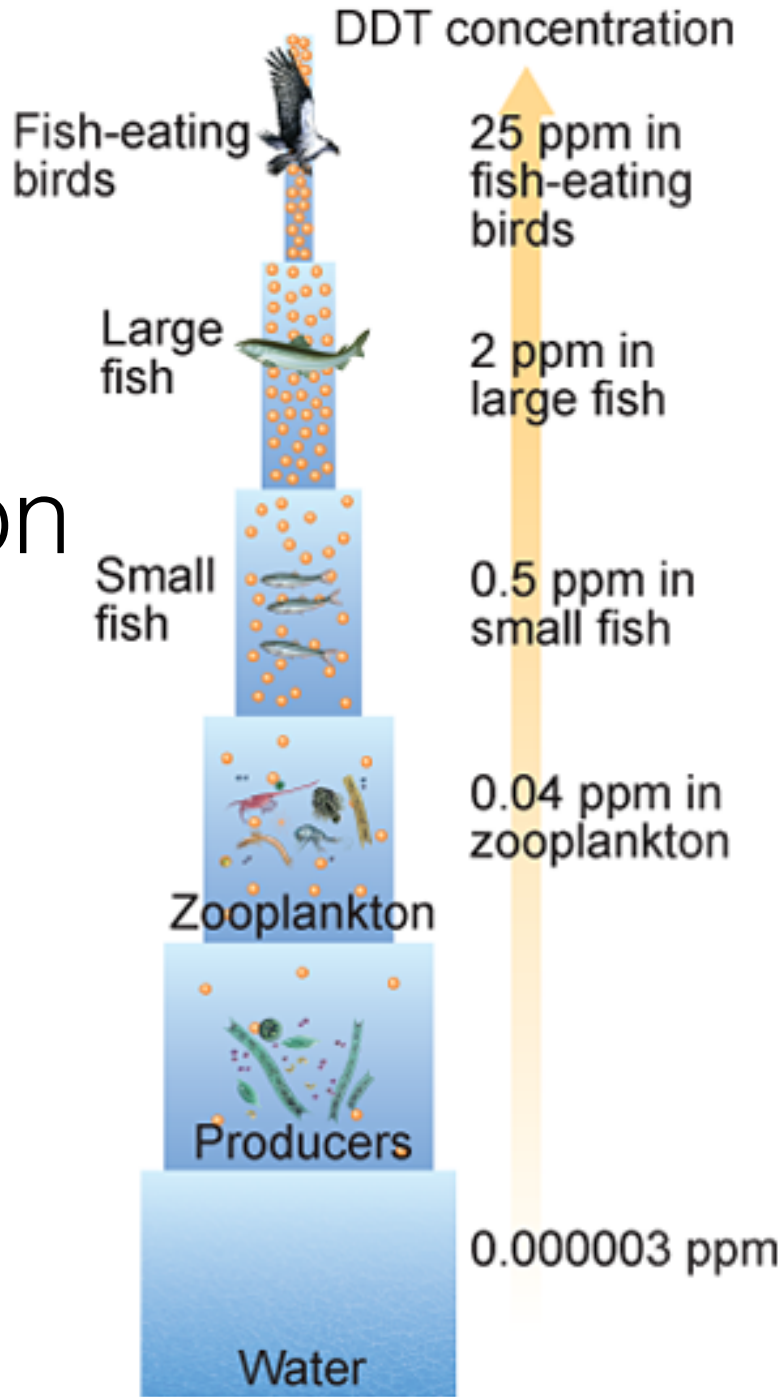


Pollution- changes the composition of air, soil, and water.



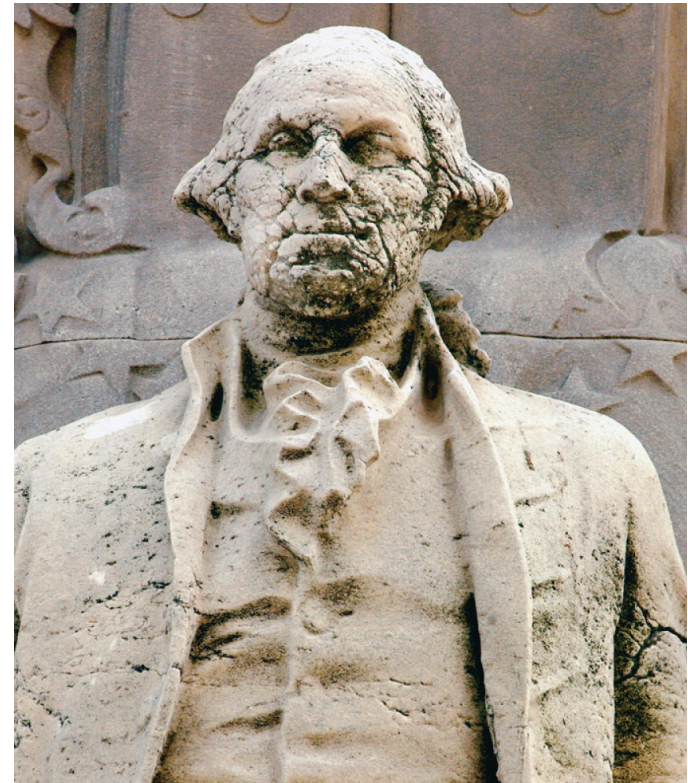
Biological magnification

increasing concentration of toxic substances in organisms as trophic levels increase



Acid precipitation (acid rain):

- Sulfur and nitrogen react with water and substances in air to form acid.
- Acid rain removes nutrients from the soil



Eutrophication too much nitrogen and phosphorus get into the water, causing huge algae growth.

The algae use up the oxygen supply during their growth and after their deaths and organisms in the water suffocate.



introduced species-

Aka: Nonnative species, invasive species
Species from somewhere else.

- Introduced species often reproduce in large numbers because of a lack of predators.
- An estimated 40% of the extinctions that have occurred since 1750 are a result of introduced species.