



Erasmus+

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Biodiversity

Living environment & living organisms

BIODIVERSITY

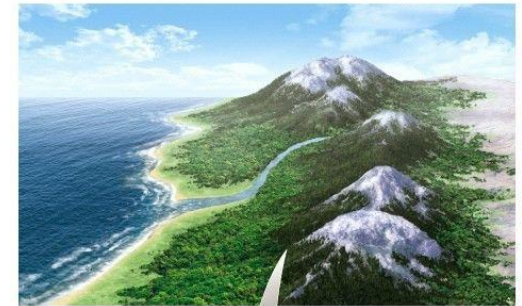


- ❑ diversity of plant or animal species
- ❑ the variety of life on earth
- ❑ the result of the development over thousands of years
- ❑ contribution of human to diversity

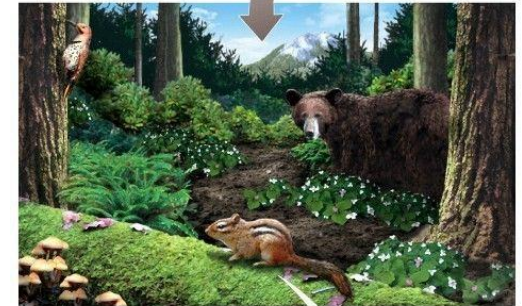


BIODIVERSITY LEVELS

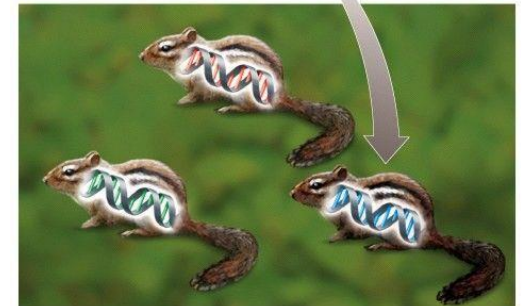
- ❑ **ecosystem** (diversity at community and ecosystem level)
- ❑ **species** (diversity of species)
- ❑ **genetic** (variations of genes within a population or the whole species)



(a) Ecosystem diversity



(b) Species diversity



(c) Genetic diversity

ECOSYSTEM BIODIVERSITY



- ❑ biological communities (biocenoses) and ecosystems, their diversity, abundance and spatial expansion, biomes
- ❑ the number and frequency of different communities of organisms and their environments

SPECIES BIODIVERSITY



- ❑ the number - quantity of different species within the group and the demarcated area
- ❑ components of diversity:
 - **species richness** - number of species in the community (per area)
 - **balance** - proportion of species abundance

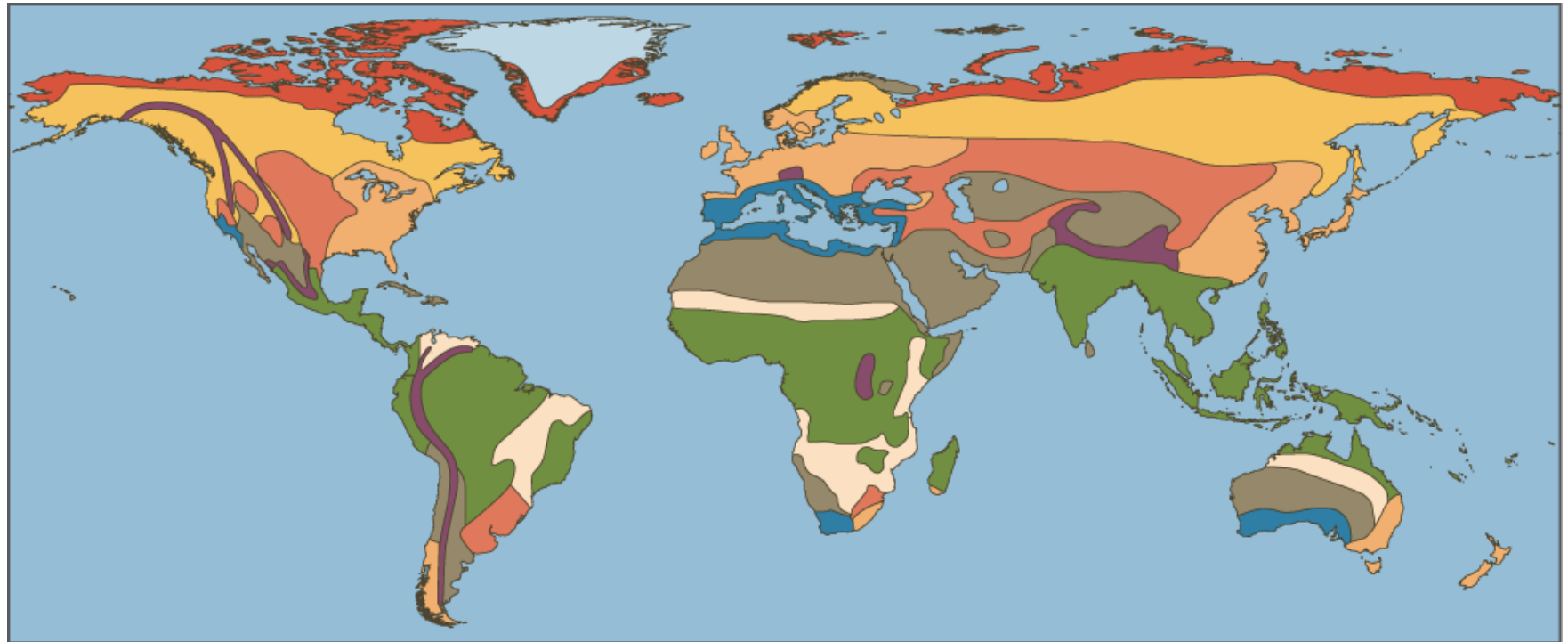
GENETIC BIODIVERSITY



- ❑ the genetic basis affects an individual's characteristics and fitness
- ❑ a basic unit of genetic information – **A GENE**
- ❑ the gene may have multiple alleles



ECOSYSTEM BIODIVERSITY



Tropical forest
Boreal forest

Savanna
Tundra

Desert
Mountains

Chaparral
Polar ice

Temperate forest
Temperate grassland

EARTH'S BIODIVERSITY



- ❑ more than 1,5 million scientifically described species - the number depending on the species level
- ❑ real number approx. 5 - 30,000,000
 - ❑ 3/4 invertebrates (mainly insects)
 - ❑ 1/5 vascular plants
- ❑ 1% of endangered species - most vertebrates

THE GLOBAL BIODIVERSITY CRISIS



1. the factors threatening biodiversity

- ❑ inappropriate activities of the human population
- ❑ prosperity at devastating cost to nature



THE GLOBAL BIODIVERSITY CRISIS



2. direct destruction of ecosystems

- ❑ of habitats essential for the species to survive
- ❑ deforestation - extinction of 10-22% of the species of the planet

THE GLOBAL BIODIVERSITY CRISIS

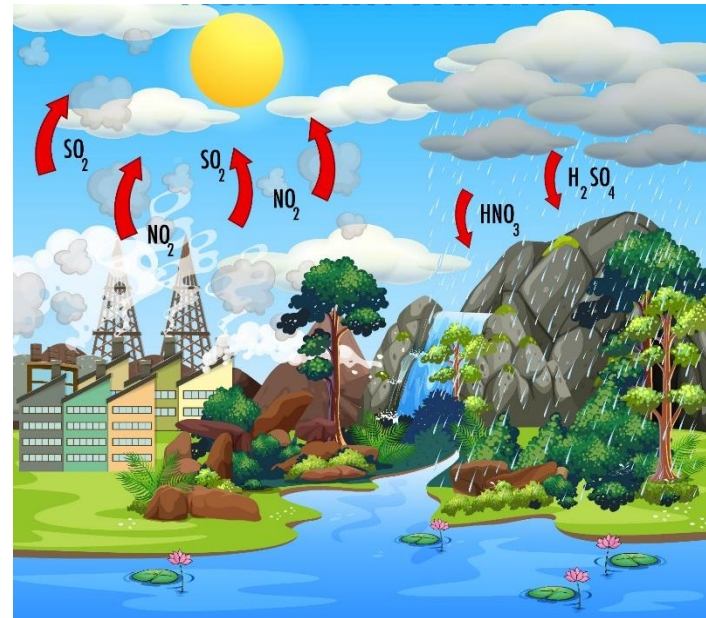


3. indirect effects

- ☐ environmental pollution - air, water, oceans
- ☐ global climate change - ozone hole,
greenhouse effect - warming, extremes,
- ☐ invasive organisms

THE GLOBAL BIODIVERSITY CRISIS

- ❑ air pollution emissions – immissions
- ❑ acid rain



THE GLOBAL BIODIVERSITY CRISIS



- ❑ acidification
- ❑ nitrogen oxides, eutrophication, nitrification
- ❑ climate change - temperature increase
 - it causes shift of species depending on temperature (altitude or latitude)
 - it can cause a decline in diversity if species do not migrate to new habitats

SIXTH MASS EXTINCTION



- ☐ overpopulation and population growth
- ☐ excessive consumption
- ☐ toxic pollution
- ☐ invasion of alien species
- ☐ climate change
- ☐ mass extinction of species - rainforests, coral reefs, wetlands

CRITICAL LOSS OF BIODIVERSITY



- ❑ almost half of the 177 mammal species studied have lost more than 80% of their population in the last 100 years



BIODIVERSITY PROTECTION



- ☐ United Nations Convention on Biological Diversity (1992)
- ☐ establishment of protected areas
- ☐ preservation of local old-growth forests
- ☐ organizing community programs to support species biodiversity
- ☐ conservation programs to preserve the species



International
Biodiversity
Day
22 May



**„WE ARE THE PART OF THE SOLUTION“
INTERNATIONAL DAY FOR BIOLOGICAL
DIVERSITY, 22 MAY**

PICTURES - USED SOURCES:



<https://www.vecteezy.com/>

<https://i.pinimg.com/564x/1c/7a/e6/1c7ae6c3638f4e26f0b162dd430b4257.jpg>

<https://www.ompe.org/wp-content/uploads/2017/05/sixieme-extinction-de-masse.jpg>