What is Biodiversity and Why Conserve It?

Worksheet

Biodiversity is the range of all living organisms, their genes and habitats. Conservation prevents species extinction, maintains ecosystem function and supports human survival.

Questions

1. Which is NOT a level of biodiversity?

A) Genetic
B) Species
C) Ecosystem
D) Continental

2. Why are protected areas effective for conservation?

A) They eliminate climate change
B) They allow populations to recover undisturbed
C) They increase human hunting
D) They prevent all evolution

3. A small isolated population loses genetic diversity quickly. Why?

A) Inbreeding & genetic drift
B) More mutations
C) Better adaptation
D) Increased migration

4. Which is an example of ecosystem services provided by biodiversity?

A) Climate change
B) Pollution
C) Pollination of crops
D) Species extinction

5. A tropical rainforest has 500 tree species. A plantation has 2. Why is the rainforest more biodiverse?

6. A coral reef supports 4,000 fish species but faces overfishing. How does conservation help?

7. An island species has only 50 individuals left. Why is this a biodiversity crisis?

8. Define: What are the three levels of biodiversity?

9. Define: Why is genetic diversity important?

10. Define: Name two ways to conserve biodiversity.

Answer Key

1. D) Continental - The three levels are genetic, species and ecosystem. Continental is not a standard biodiversity classification.

2. B) They allow populations to recover undisturbed - Protected areas reduce hunting, habitat destruction & pollution, allowing populations & genetic diversity to recover.

3. A) Inbreeding & genetic drift - Small populations are vulnerable to inbreeding depression & random allele loss (genetic drift).

4. C) Pollination of crops - Ecosystem services include pollination, water filtration, carbon storage & nutrient cycling - all depend on biodiversity.

5. The rainforest has genetic variation within species + 500 species total + different plant, animal & fungal communities. The plantation has low species diversity (monoculture) & low ecosystem resilience. Rainforest = high biodiversity; plantation = low.

6. Overfishing reduces population size genetic bottleneck loss of alleles. Marine protected areas restrict fishing populations recover genetic diversity restored. Conservation = stable fish populations & reef ecosystem function.

7. Small population = low genetic diversity inbreeding risk reduced fitness. Catastrophic event (disease, drought) could wipe out the last 50. Extinction is irreversible; genetic diversity is lost forever.

8. Genetic (variation within species), species (number of species), ecosystem (variety of habitats).

9. It allows populations to adapt to changing environments and resist disease.

10. Protected areas (parks, reserves) and legal protection (endangered species laws).