OCR (A) Biology A-level

4.2.1 - Biodiversity

Flashcards

What is biodiversity?

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The variety of living organisms. It can be measured in terms of species diversity (number of species in a community), habitat diversity (range of different habitats) and genetic diversity (variety of alleles within a species).

Differentiate between species richness and species evenness.

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- Species richness= the number of species in an area.
- Species evenness= whether species have similar numbers.

Discuss different types of sampling.

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- Random= no particular system, however aim is still to be representative.
- Opportunistic= those that are encountered first are chosen.
- Stratified= population divided into smaller groups based on a characteristic, then sampled.
- Systematic= follows a particular pattern.

Why is sampling important?

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We cannot study the whole population as it is impractical. Using a representative sample instead allows us to investigate the population easily.

Describe how Simpson's Index of Diversity is used.

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- A measurement of the total number of organisms compared to the total number of organisms of each species.
- A high index of diversity means several different species are equally abundant, whereas a low index means one or two species dominate over others.

How can we assess genetic diversity?

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$$\text{Proportion of polymorphic gene loci} = \frac{\text{number of polymorphic gene loci}}{\text{total number of loci}}$$

Give factors that affect biodiversity.

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- Population growth
- Deforestation for agriculture
- Climate change affecting habitats

Give reasons to maintain biodiversity.

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- Ecological= protecting species, maintaining resources.
- Economic= reducing soil depletion.
- Aesthetic= protecting landscapes.

Define conservation.

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The protection and management of species and habitats, in order to maintain biodiversity. Can be in-situ (in an organism's habitat) or ex-situ (outside an organism's habitat).

Give examples of in-situ conservation.

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- Marine conservation zones
- Wildlife reserves

Give examples of ex-situ conservation.

Give examples of ex-situ conservation.

- Seed banks
- Botanic gardens
- Zoos

Give some agreements made with the aim of protecting species and habitats.

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- Convention on International Trade in Endangered Species (CITES).
- Rio Convention on Biological Diversity (CBD).
- Countryside Stewardship Scheme (CSS).