

# WJEC (Wales) Biology A-level

## Unit 3.6 - Human impact on the environment

### Flashcards

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Describe what is meant by an  
endangered species.



Describe what is meant by an endangered species.

A species that due to a loss of habitat or rapid decrease in population numbers is at risk of extinction.



# When is a species described as extinct?



When is a species described as extinct?

When all members of the species are dead.



Outline the potential causes for the extinction of a species.



# Outline the potential causes for the extinction of a species.

- Natural selection due to selection pressures
- Loss of habitat (e.g. deforestation, removal of hedgerows)
- Pollution (e.g. oil, PCBs)
- Overhunting by humans
- Introduction of new competitors (e.g. domesticated animals)
- Non-contiguous populations



# What is conservation?





# What is conservation?

The maintenance of ecosystems and biodiversity by humans in order to preserve the Earth's resources.



Describe how conservation can be achieved.



# Describe how conservation can be achieved.

- **Protection of habitats**, e.g. nature reserves, national parks, SSSIs
- **Protection of endangered species**, e.g. making hunting illegal, breeding programmes increase population size
- **International cooperation**, e.g. restricting trade of endangered species and their parts
- **Species reintroduction**
- **Gene and sperm banks**
- **Seed banks**



# Why is the conservation of gene pools important?



# Why is the conservation of gene pools important?

- Many plant species are yet to be discovered and may contain chemicals that could be used in **future medicines**
- Protection of potential **future food sources**
- Some alleles may provide **selective advantages**, preventing extinction
- Each species and its genes are precious



# What is agricultural exploitation?



# What is agricultural exploitation?

The increase in efficiency and intensity of food production in order to meet growing demands.



# What is deforestation?





# What is deforestation?

The removal of trees from land which is subsequently used to grow crops or provide space for cattle.



Outline the consequences of deforestation.



# Outline the consequences of deforestation.

- Loss of biodiversity
- Climate change
- Habitat loss
- Soil erosion
- Desertification
- Lowland flooding



# What do managed forests involve?



# What do managed forests involve?

Sustainable replanting and regeneration. Examples of methods include:

- Coppicing
- Selective cutting
- Long rotation time



# What is overfishing?



# What is overfishing?

The excessive fishing of an area at a rate which exceeds potential replenishment of the species.



Outline the methods employed to regulate fishing.





# Outline the methods employed to regulate fishing.

- Using lines rather than nets
- Regulating net size
- Fishing quotas and exclusion zones
- Avoiding overfished species, fishing non-traditional species
- Limiting fishing fleet sizes
- Marine stewardship council certification
- Fish farming



# What is fish farming?



# What is fish farming?

The breeding of fish commercially in enclosures for food to combat overfishing.



# Describe the problems of fish farming.



# Describe the problems of fish farming.

- Rapid spread of **disease**
- **Escape** of farmed fish
  - Spread disease to wild populations
  - Larger, outcompete wild populations
- **Bioaccumulation** of **pesticides**
- Farmed fish contain high concentrations of **toxic chemicals** (e.g. dioxins, PCBs)



# Define sustainability.



Define sustainability.

Using resources in a way that also maintains them for future generations.



Environmental monitoring is required for conservation. Give some examples of factors that can be monitored.





Environmental monitoring is required for conservation. Give some examples of factors that can be monitored.

- Air quality
- Water quality
- Soil quality



# What are planetary boundaries?



# What are planetary boundaries?

A set of nine limits proposed by a group of environmental and Earth system sciences within which human activity can operate without risk of irreversible damage to the planet.



Which four planetary boundaries have been crossed?



Which four planetary boundaries have been crossed?

- Climate change
- Biosphere integrity
- Land system change
- Biogeochemical flows



Which two planetary boundaries are avoidable?



# Which two planetary boundaries are avoidable?

- Ocean acidification
- Fresh water use



Which planetary boundary has been avoided?





Which planetary boundary has been avoided?

Ozone depletion in the stratosphere.



Which planetary boundaries are not quantified?



# Which planetary boundaries are not quantified?

- Atmospheric aerosols
- Introduction of novel entities

