

CAIE Biology IGCSE

20 - Human Influences on Ecosystems

Flashcards

This work by [PMT Education](https://www.pmt.education) is licensed under [CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)



Give 4 ways that modern technology has aided food production



Give 4 ways that modern technology has aided food production

- New efficient machines can work over larger areas
- Improved fertilisers to boost crop yields
- Insecticides prevent crops from being destroyed by insects
- Herbicides stop competition from weeds for resources
- Desirable features chosen through selective breeding



Give one reason why monoculture is bad
for ecosystems



Give one reason why monoculture is bad for ecosystems

Monoculture reduces biodiversity significantly



State the negative impacts of intensively farming livestock



State the negative impacts of intensively farming livestock

- Global warming
- Soil and land quality is decreased
- Reduction in biodiversity



Describe 3 human activities that cause habitat destruction



Describe 3 human activities that cause habitat destruction

- Deforestation for timber production, housing and farming
- Extraction of natural resources requires clearing land and large machinery
- Marine pollution from oil spills, waste, eutrophication and plastic waste is damaging to aquatic life and the habitat they live in



Describe how sewage in waterways can affect aquatic life



Describe how sewage in waterways can affect aquatic life

Microorganisms that decompose sewage will use up the oxygen in the water so that there is not enough oxygen left for respiration for other aquatic organisms



Give 4 undesirable effects of
deforestation



Give 4 undesirable effects of deforestation

- Extinction
- Erosion of soil
- Increased risk of flooding
- Increased atmospheric carbon dioxide



Explain how deforestation causes extinction



Explain how deforestation causes extinction

- Deforestation removes food and shelter for animals
- Animals without food or shelter are less likely to survive, leading to extinctions



Explain how deforestation leads to soil erosion



Explain how deforestation leads to soil erosion

- Tree roots anchor soil and the trees shelter and protect the soil which prevents erosion
- Deforestation leaves the soil exposed and erosion happens more quickly



Explain how deforestation leads to an increased risk of flooding



Explain how deforestation leads to an increased risk of flooding

- Trees absorb water which evaporates off their leaves, leaving the ground drier and able to absorb more water
- Less trees increases surface runoff and the risk of flooding



Explain how deforestation leads to increased carbon dioxide levels



Explain how deforestation leads to increased carbon dioxide levels

- Trees take in carbon dioxide from the atmosphere during photosynthesis which decreases atmospheric carbon dioxide levels
- When trees are cut down, the atmospheric carbon dioxide is no longer absorbed and so level remain higher



State 4 sources of water pollution



State 5 sources of water pollution

- Insecticides
- Herbicides
- Sewage
- Waste (plastics, chemicals, metal)



State 4 sources of air pollution



State 4 sources of air pollution

- Vehicle exhaust
- Home heating
- Industrial fossil fuel burning for generating power
- Manufacturing processes



What is eutrophication? (Higher/Supplement)



What is eutrophication? (Higher/Supplement)

An excess of nutrients in a body of water, often due to fertilisers in the water source



Why is eutrophication bad for aquatic life? (Higher/Supplement)



Why is eutrophication bad for aquatic life?
(Higher/Supplement)

It causes an 'algal bloom' which decreases oxygen supplies in the water and degrades the water quality



Describe the process of eutrophication (Higher/Supplement)



Describe the process of eutrophication

(Higher/Supplement)

- Often caused by leaks of fertilisers containing nitrate and other ions into the water source
- Increased growth of producers (e.g. algae which is called an algal bloom)
- Increased decomposition after death of producers (due to lack of light) by decomposers which use up dissolved oxygen during respiration
- Organisms that need the oxygen in the water begin dying



What is meant by non-biodegradable waste?



What is meant by non-biodegradable waste?

Waste which cannot be broken down naturally in the environment (e.g. by erosion or decomposers)



Describe the effects of non-biodegradable plastics



Describe the effects of non-biodegradable plastics

- Chemicals in the plastics can leach out and cause damage to organisms
- Animals can get trapped in plastics, leaving them vulnerable (e.g. to predators or starvation)
- Animals can swallow plastics, causing blockages and often death



State 3 sources of methane in the atmosphere



State 3 sources of methane in the atmosphere

- Biomass burning
- Livestock production systems
- Decaying matter in landfills



What does excess atmospheric methane and carbon dioxide cause?



What does excess atmospheric methane and carbon dioxide cause?

Global warming



State 3 negative consequences of global warming



State 3 negative consequences of global warming

- Sea level rise caused by melting icebergs
- Disrupted farming and agriculture
- Increased spread of diseases in warmer climates



Explain how excess methane and carbon dioxide causes global warming
(Higher/Supplement)



Explain how excess methane and carbon dioxide causes global warming (Higher/Supplement)

- The gases accumulate in the atmosphere and absorb the thermal energy from the sun
- This traps the extra heat energy in the atmosphere and warms the earth



What is a sustainable resource?



What is a sustainable resource?

A resource which is produced as rapidly as it is used up so that it does not run out



Why is it necessary to conserve fossil fuels?



Why is it necessary to conserve fossil fuels?

Because fossil fuels are non-renewable and so will run out with continued use



State 2 resources that can be conserved
and managed sustainably



State 2 resources that can be conserved and managed sustainably

- Timber
- Fish stocks



How can forests and fish stocks be sustained? (Higher/Supplement)



How can forests and fish stocks be sustained?

(Higher/Supplement)

- Teaching people about the need for conservation
- Legal quotas that define a limit to the amount of fishing and logging
- Replanting trees when they have been cut down
- Controlling net type and mesh size when fishing



Describe 6 methods of conserving fish (Higher/supplement)



Describe 6 methods of conserving fish

(Higher/supplement)

- **Education** : Educating fishermen of local and international laws allows them to be more aware of sustainable practices. Educating consumers makes them aware of unsustainably produced fish.
- **Quotas** : Controlling the number of fish caught in each region prevents overfishing.
- **Controlling net types and mesh size** : a larger mesh size means younger fish can escape from being caught.
- **Protected areas** : These areas can help protect endangered species of fish.
- **Closed seasons**: A certain period of time in the year where fisherman cannot fish for specific types of fish.
- **Monitoring**: Changes to populations of species can be monitored.



Describe 4 methods of conserving
forests (Higher/supplement)



Describe 4 methods of conserving forests

(Higher/supplement)

- **Replanting** - Replanting trees can restore deforested areas.
- **Quotas** - Implementing quotas on logging can improve sustainability and protect the biodiversity of tree species.
- **Protected areas** - Protecting endangered species and their habitats, conserving biodiversity.
- **Education** - Allows logging companies to be aware of sustainable practices. It also allows consumers to be informed of the importance of buying products made from sustainable practices.



Give 5 causes of extinctions



Give 5 causes of extinctions

- Climate change
- Destroying habitats
- Hunting/poaching
- Pollution
- The introduction of a foreign species



What are the risks to a species if the population size drops considerably?
(Higher/Supplement)



What are the risks to a species if the population size drops considerably? (Higher/Supplement)

- A smaller population size means that there will be a smaller gene pool
- A smaller gene pool means that the population are not able to adapt to change as easily and are at a higher risk of extinction



Give 4 ways that species can be conserved



Give 4 ways that species can be conserved

- Monitoring and protecting species and habitats
- Teaching people about why species are going extinct and how to prevent extinction
- Captive breeding programmes within zoos and wildlife reserves with the aim of increasing the population size before reintroduction into the environment
- Seed banks to preserve genetic diversity



Why is conservation important? (Higher/Supplement)



Why is conservation important? (Higher/Supplement)

- It prevents the extinction of species
- It protects vulnerable environments
- It ensures that ecosystems can still provide useful resources like medicines, food and fuel
- It maintains and increases biodiversity



What is artificial insemination? (Higher/supplement)



What is artificial insemination? (Higher/supplement)

- Artificial insemination is where sperm from a male animal is collected and is introduced manually into the female reproductive tract.
- This means controlled breeding can occur without direct contact between animals. This reduces the risk of disease transmission.
- This also increases the genetic diversity of the species.



What is in vitro fertilisation? (Higher/supplement)



What is in vitro fertilisation? (Higher/supplement)

- In vitro fertilisation involves the fertilisation of an egg and a sperm outside the body.
- The eggs and sperm are collected separately and fertilised in a lab.
- The embryo is then implanted into the female's uterus.
- This can be used when mating naturally is unsuccessful.

