

# Ecology

## Key Terms

**Habitat** – where an organism lives

**Population** – all organisms of a species in a habitat

**Community** – populations of different species in a habitat

**Ecosystem** – the interaction of biotic and abiotic factors

## Competition

Organisms compete with other species and members of their own species for the same resources.

**Plants** compete for light, space, water and minerals

**Animals** compete for territory, food, water and mates.

## Adaptations

Organisms are adapted to live in a particular environment.

**Structural:** the features of an organism's body structure, eg. shape, size or colour.

- Arctic foxes have white fur for camouflage
- Whales have lots of blubber to keep warm
- Camels have little fat to aid heat loss

**Behavioural:** how an organism behaves. Some species **migrate** to warmer climates during winter months.

**Functional:** internal processes of an organism.

- Desert animals produce **little sweat** and small amounts of urine to conserve water.
- Some animals **hibernate** to slow metabolism over winter when food sources are scarce.

## Abiotic Factors

These are **non-living** factors that can affect an ecosystem.

- Light intensity
- Temperature
- Moisture
- Wind intensity/direction
- CO<sub>2</sub> level
- Oxygen level
- Soil pH

## Biotic Factors

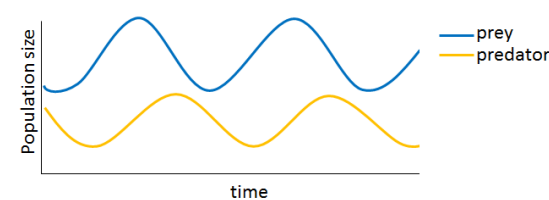
These are **living** factors that can affect an ecosystem.

- Competition with other species
- Food availability
- New predators
- New diseases

**Food Chains** Grass → Rabbit → Fox (producer → primary consumer → secondary consumer)

Always start with a producer (plant) as they produce their own food – they **photosynthesise** using the Sun's energy to produce **glucose**. Some of this glucose is used to produce new biological molecules in the plant, increasing its **biomass** (an energy store). Some of this biomass is passed on to the animal that eats the plant (secondary consumer). Therefore energy is transferred through organisms in a food chain.

## Predator/Prey Relationships



The amount of food limits the population of a species. If the population of prey increases then so will the population of predators. But, as the number of predators increase, the number of prey decrease.

## Extremophiles

Microorganisms that are adapted to very extreme climates, such as the high **temperatures** (volcanic vents), high **pressures** (deep sea vents) or high salt **concentrations** (salty lakes).

The predator-prey cycles are slightly **out of phase** with each other because it takes a short while for a population to **respond** to changes in the other. If the number of rabbits increase it will take a while for the foxes to reproduce.