

Ecology

Adaptations and interdependence

Levels of organisation

Organism Population Community Ecosystem

Competition

Plants: light, space, water, ions

Animals: food, mates, territory

Interdependence

Stable community

Abiotic factors

Light Temperature Moisture Soil pH and minerals

Biotic factors

Food New predators New pathogens Outcompeted

Adaptations

Structural Behavioural Functional Extremophiles

Organisation of an ecosystem

Food chains

Producer Primary consumer Predator and prey

Sampling

Quadrats Transects Mean, mode, median

Predator-prey cycles

Prey peaks first

Carbon cycle

Photosynthesis Respiration Decay

Water cycle

Evaporation Precipitation

Microorganisms

Return carbon dioxide Return mineral ions

Decomposition Triple only

Temperature Water Oxygen Compost and biogas

Environmental change Triple only Higher tier

Temperature Water Atmospheric gases

Biodiversity and humans

Biodiversity

Variety of species Stability

Waste and pollution

Water Air Land

Land use

Building Quarrying Farming Peat bogs

Deforestation

Cattle and rice Biofuels

Global warming

Carbon dioxide Methane Habitat loss

Maintaining biodiversity

Breeding programmes Protect habitats Hedgerows

Recycling

Trophic levels Triple only

Trophic levels Triple only

Producers Primary consumers Secondary Tertiary

Apex predator Triple only

Decomposers Triple only

Secrete enzymes Molecules diffuse in

Pyramids of biomass Triple only

Transfer of biomass Triple only

1% of light energy 10% to next level

Biomass losses Triple only

Faeces Respiration Urine

Efficiency calculation Triple only

Food production Triple only

Food security Triple only

Birth rate Pests and pathogens Conflict

Farming techniques Triple only

Limit movement Control temperature High protein feed

Sustainable fisheries Triple only

Net size Quotas

Mycoprotein Triple only

Fusarium Glucose syrup

GM bacteria and crops Triple only

Insulin Golden rice