

Ecology and the environment

Organism in the environment

Ecological terms

Population Community Habitat Ecosystem

Quadrat practical

Random placement Mean per quadrat Estimate population

Biodiversity and distribution **Biology only**

Variety of species Transect for distribution Species per quadrat

Abiotic factors

Temperature Light Water

Biotic factors

Competition Predation Predator-prey cycles

Cycles

Carbon cycle

Photosynthesis removes CO_2 Respiration adds CO_2 Combustion adds CO_2

Decomposers

Bacteria and fungi Decomposition Release CO_2

Nitrogen cycle **Biology only**

Nitrates for proteins

Nitrogen fixation **Biology only**

N_2 to nitrogen compounds Root nodules

Nitrification **Biology only**

Ammonium to nitrates

Denitrification **Biology only**

Nitrates to N_2

Feeding relationships

Trophic levels

Producers (level 1) Primary, secondary, tertiary consumers Decomposers

Food chains and webs

Arrows: food to eater Webs link chains

Pyramids

Number Biomass Energy transfer

Energy transfer

About 10% Faeces Respiration heat Urine

Limited chain length

Little energy left Less biomass higher up

Human influences

Sulfur dioxide

Acid rain Lakes and trees Lichens

Carbon monoxide

Incomplete combustion Binds haemoglobin

Greenhouse gases

CO_2 , CH_4 , N_2O CFCs Water vapour

Enhanced greenhouse effect

Infrared absorbed Global warming Sea level rise

Sewage

Oxygen used up Pathogens

Eutrophication

Leached nitrates Algal bloom Oxygen falls

Deforestation **Biology only**

Leaching Soil erosion Less evapotranspiration More CO_2