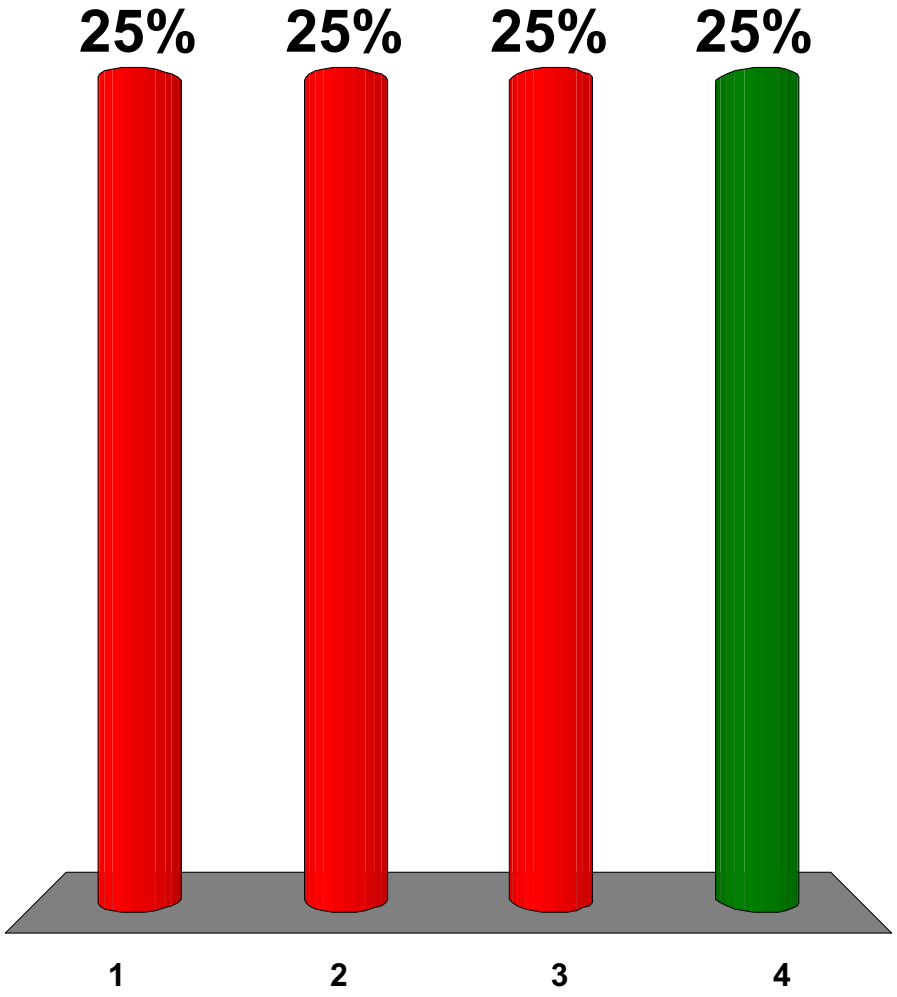
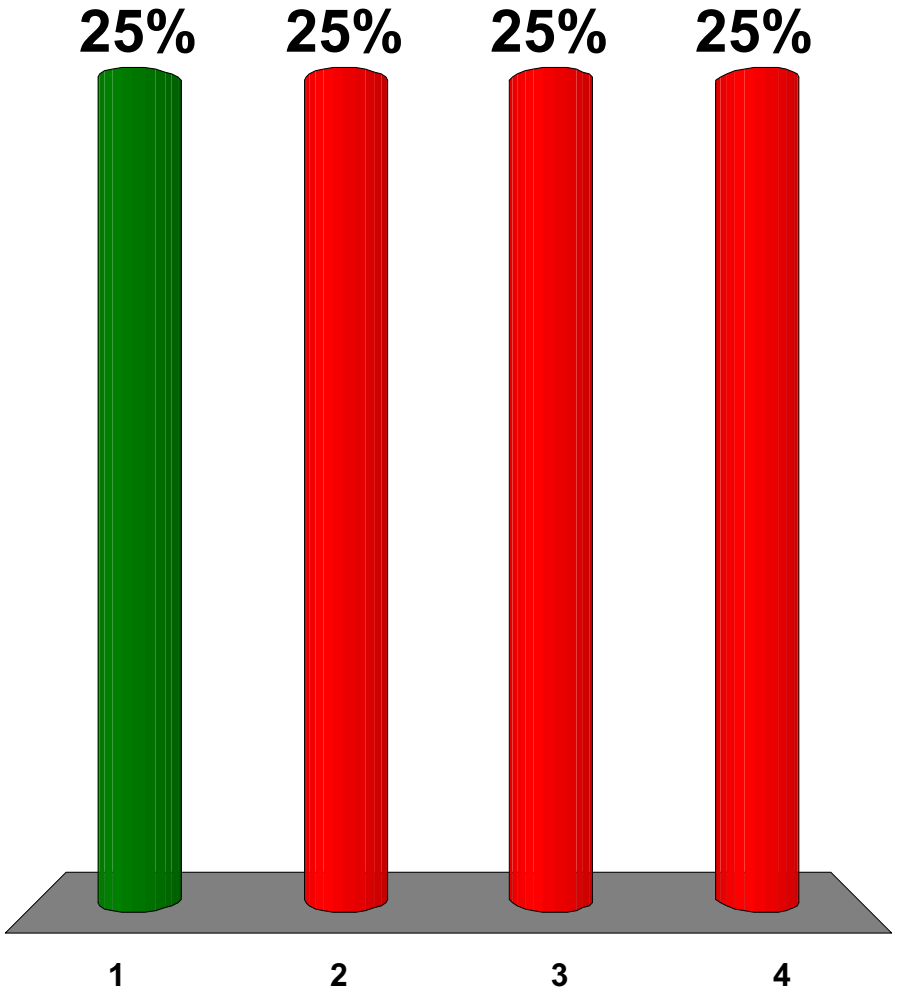
A(n) _____ consists of species interacting with each other and their environment.

1. Habitat
2. Population
3. Community
4. Ecosystem



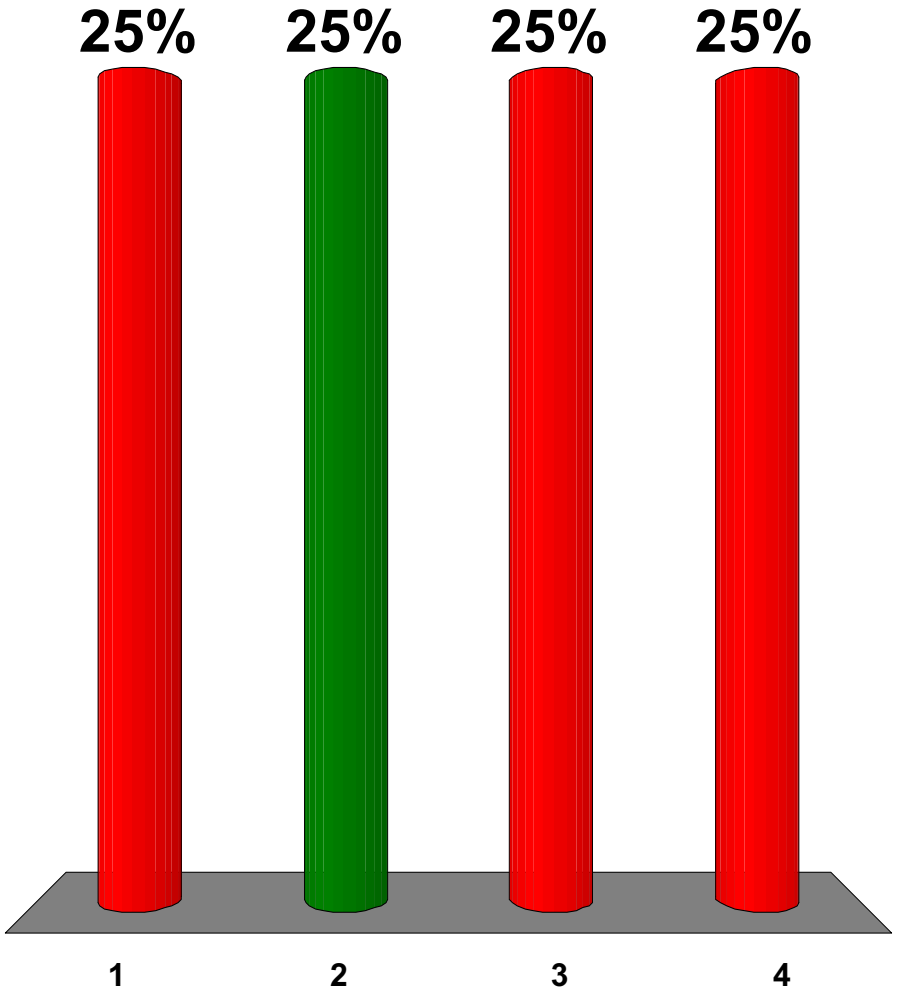
Which of the following is an example of a population?

1. Bass in a lake
2. An ocean
3. A patch of woods
4. Predator and prey in a grassland



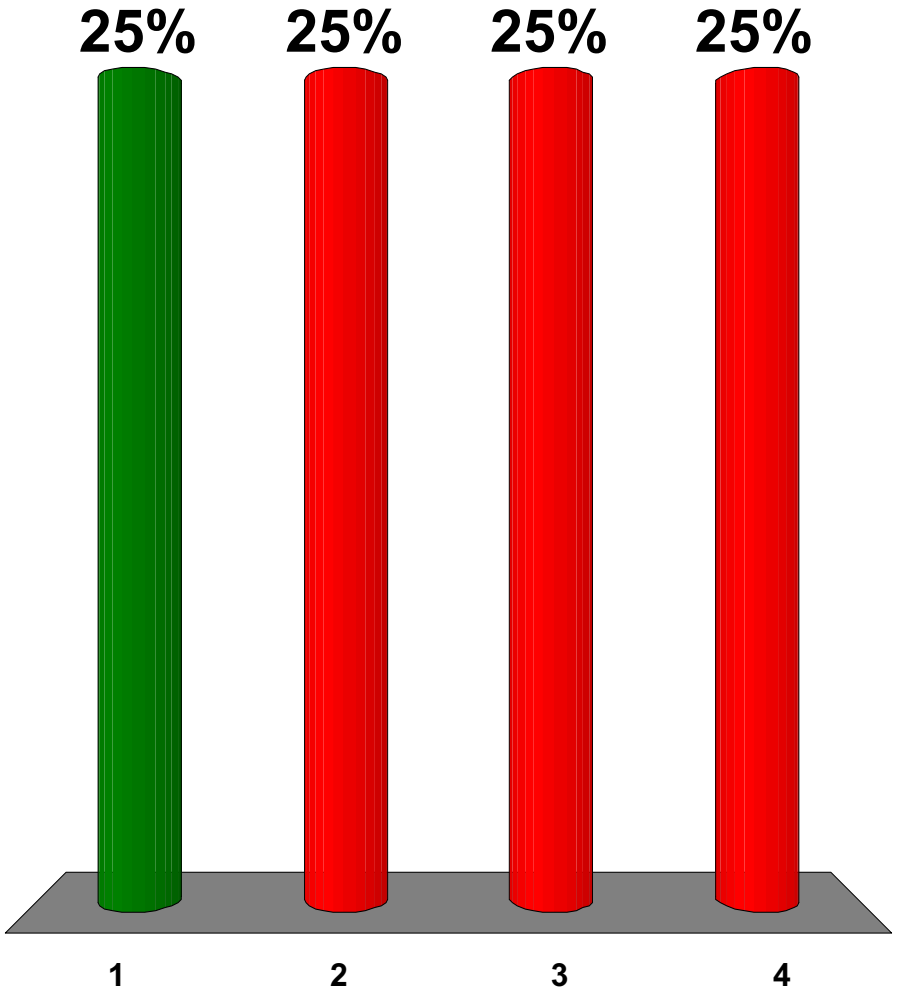
Which of the following levels of organization is the most inclusive?

1. Community
2. Biosphere
3. Population
4. Ecosystem



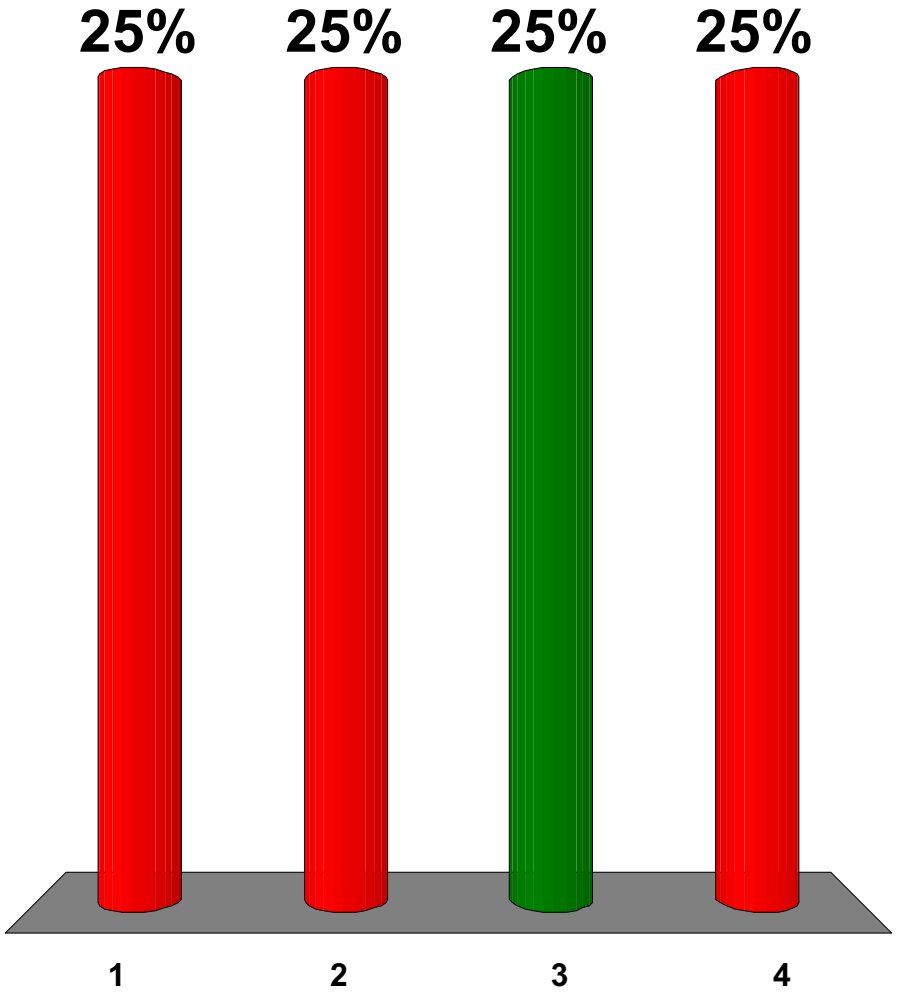
The biosphere:

1. Is the portion of the earth in which living organisms exist
2. Includes none of the hydrosphere
3. Includes all of the lithosphere
4. Includes some of the mantle



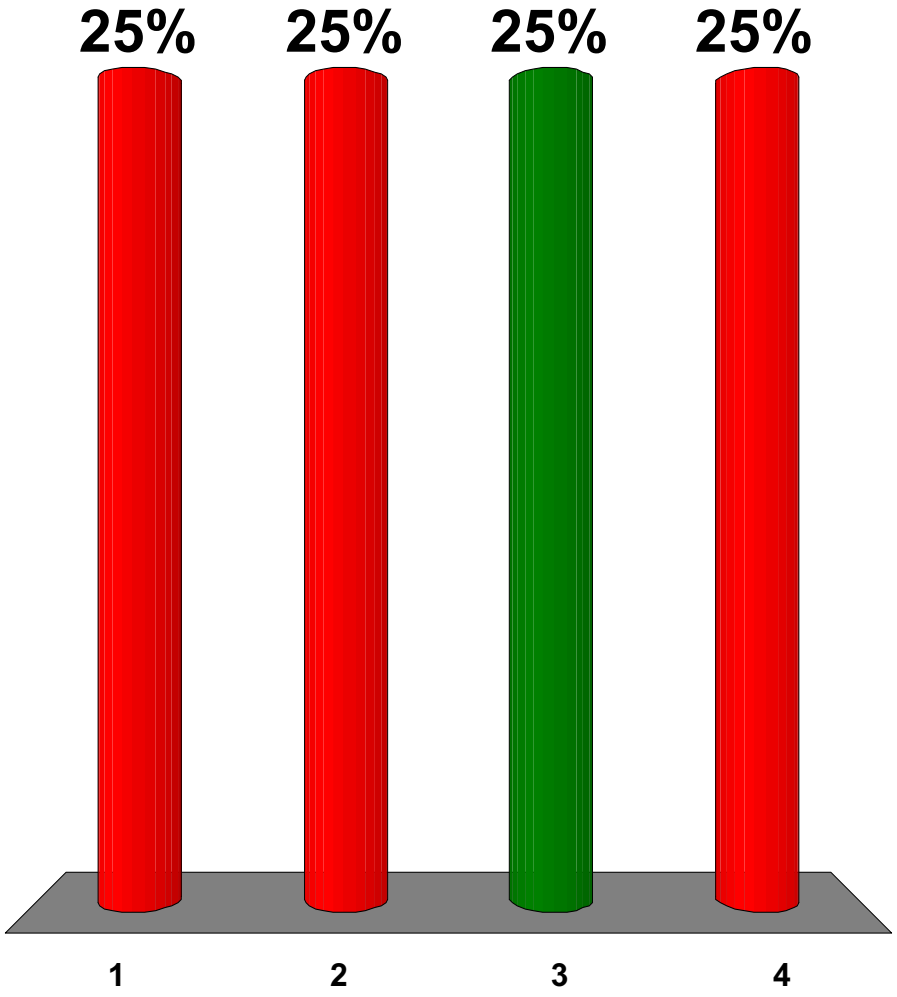
Which of the following is *not* one of the three interconnected factors upon which life on earth depends?

1. Matter cycling
2. The one-way flow of energy from the sun
3. Entropy
4. Gravity



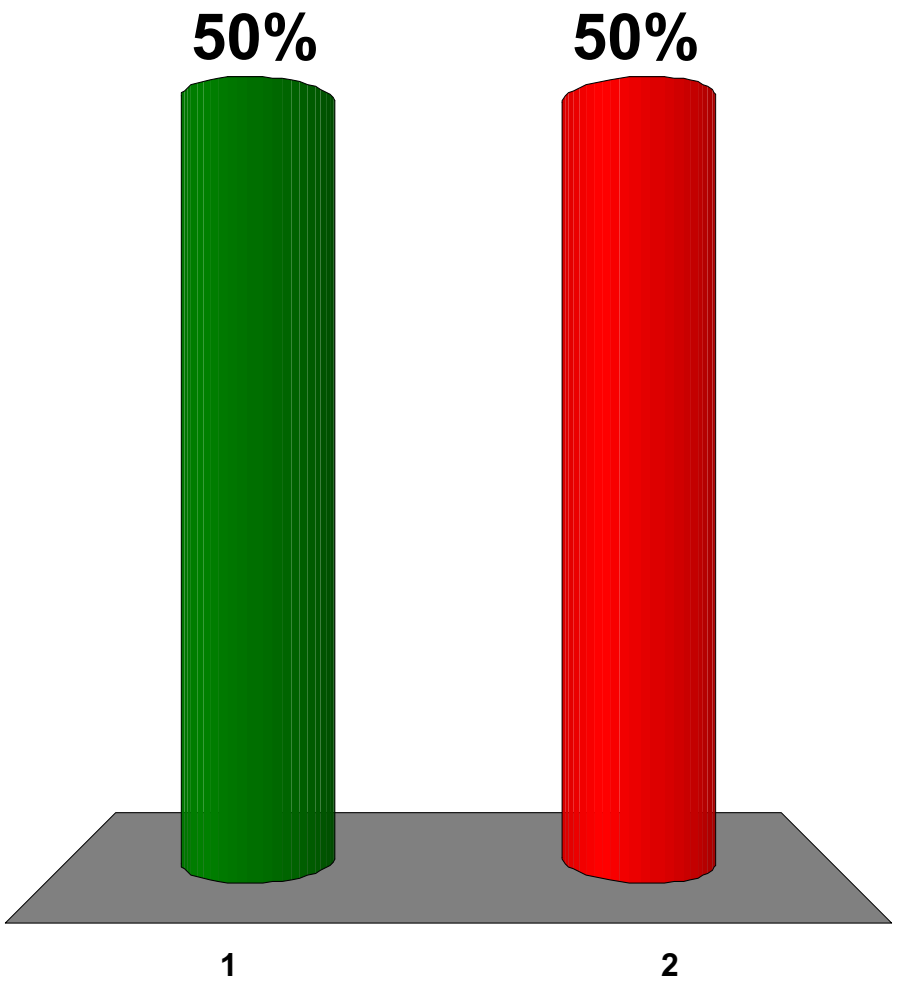
Most of the solar energy that passes through the atmosphere is:

1. Captured by green plants
2. Reflected back into space
3. Degraded into infrared radiation
4. Used to generate wind



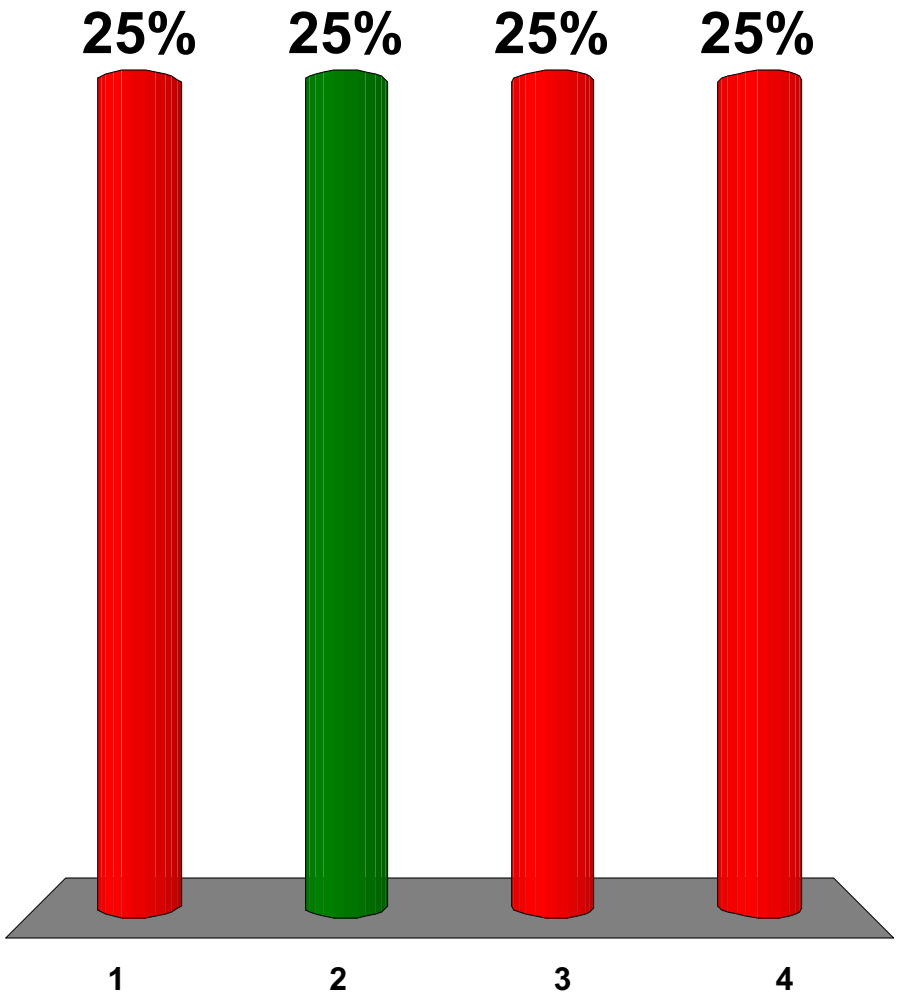
True or false? The presence in the atmosphere of natural greenhouse gases is vital to continued life on earth.

1. True
2. False



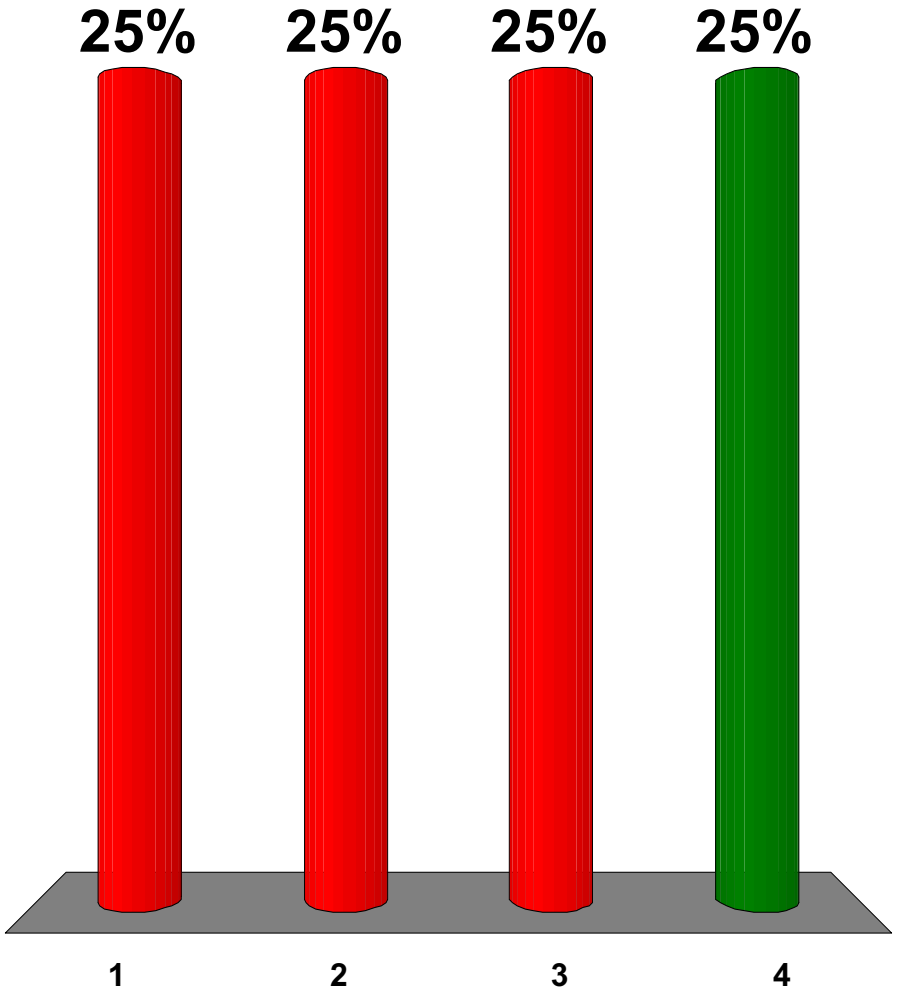
According to the _____, there is a range for physical conditions and concentrations of substances beyond which no members of a particular species can survive.

1. limiting factor principle
2. law of tolerance
3. law of conservation of mass
4. first law of thermodynamics



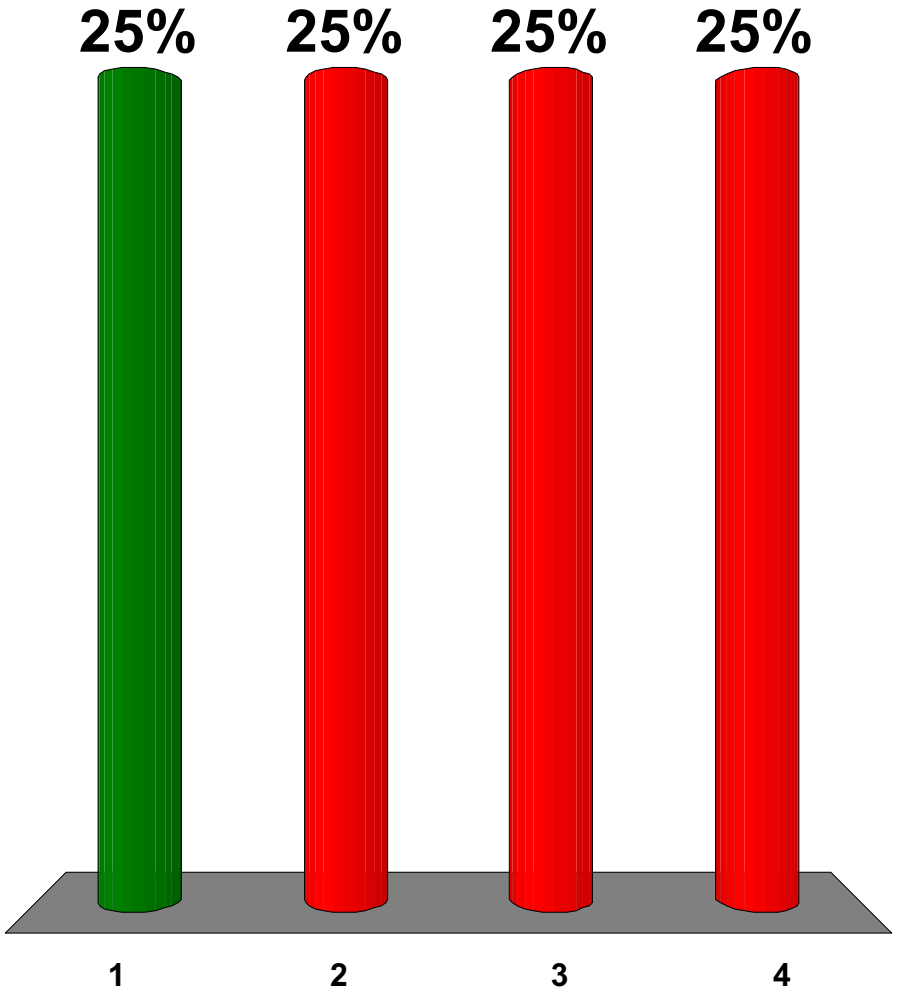
Which of the following is a limiting factor that is unique to an aquatic life zone?

1. Depth of water
2. Number of species
3. Size of population
4. Dissolved oxygen content



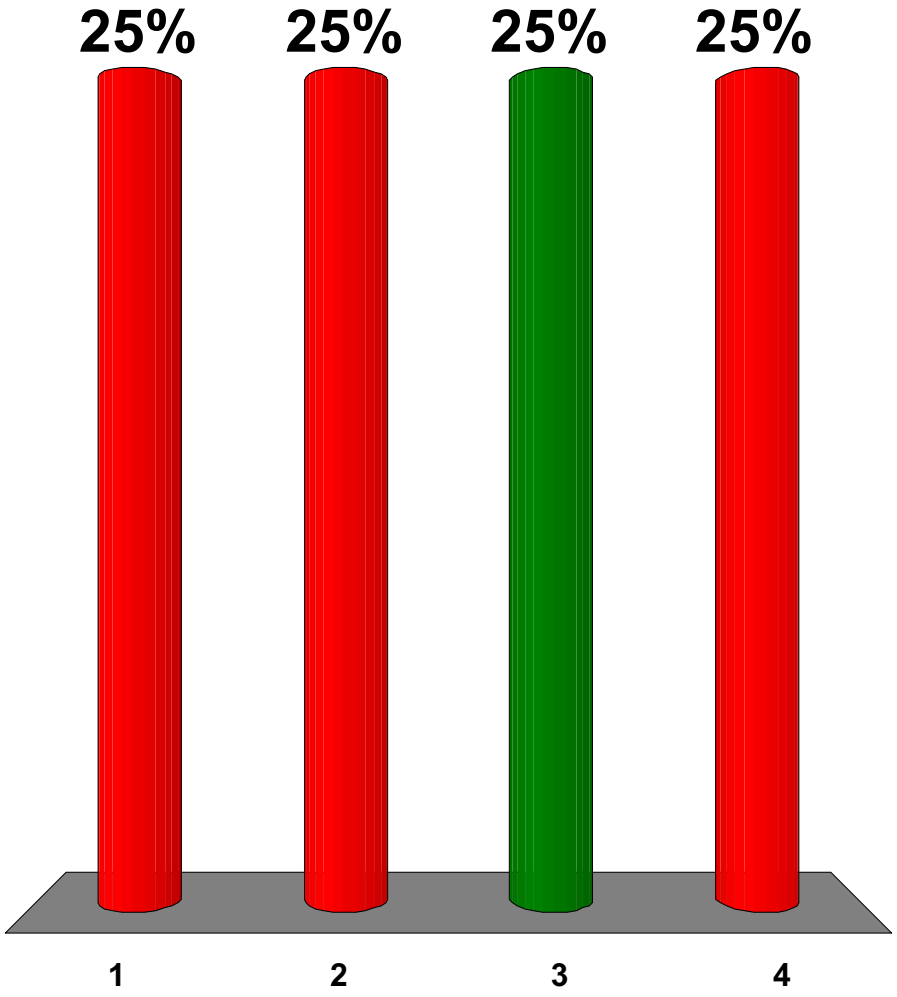
Which of the following is *not* a component of biodiversity?

1. Chemical diversity
2. Genetic diversity
3. Ecological diversity
4. Species diversity



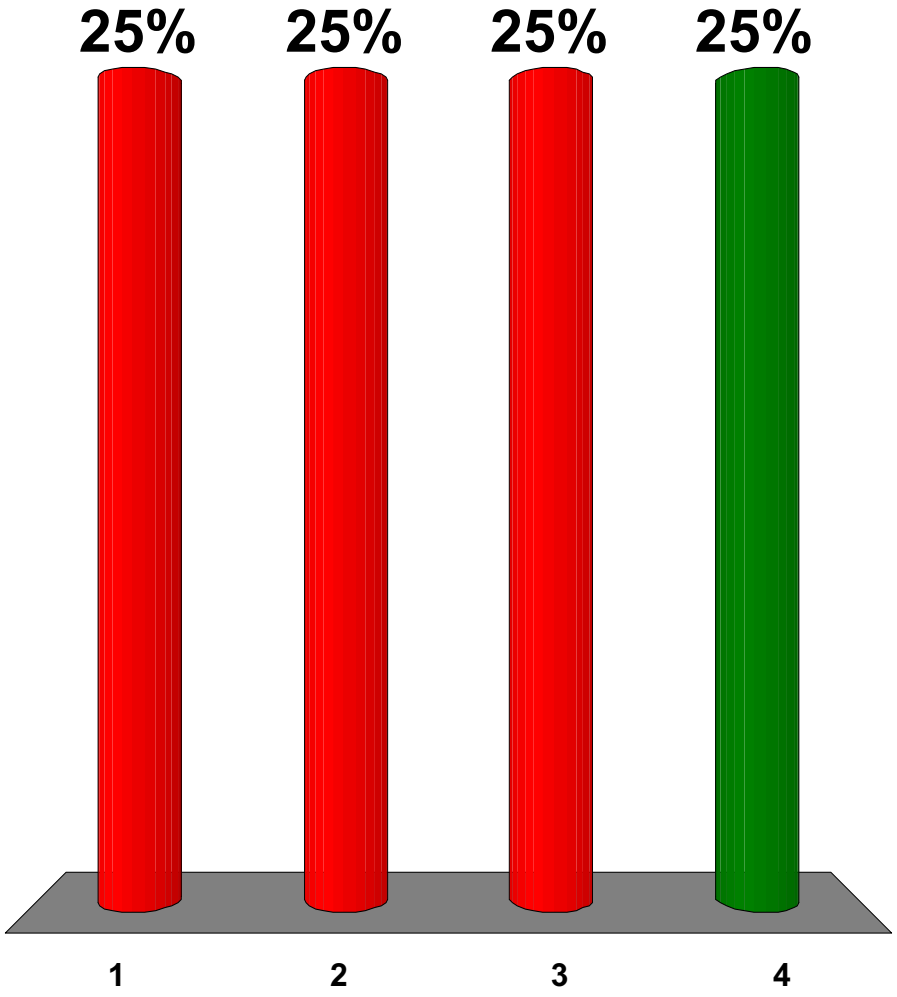
Phytoplankton in an open water ecosystem are:

1. Secondary consumers
2. Primary consumers
3. Producers
4. Tertiary consumers



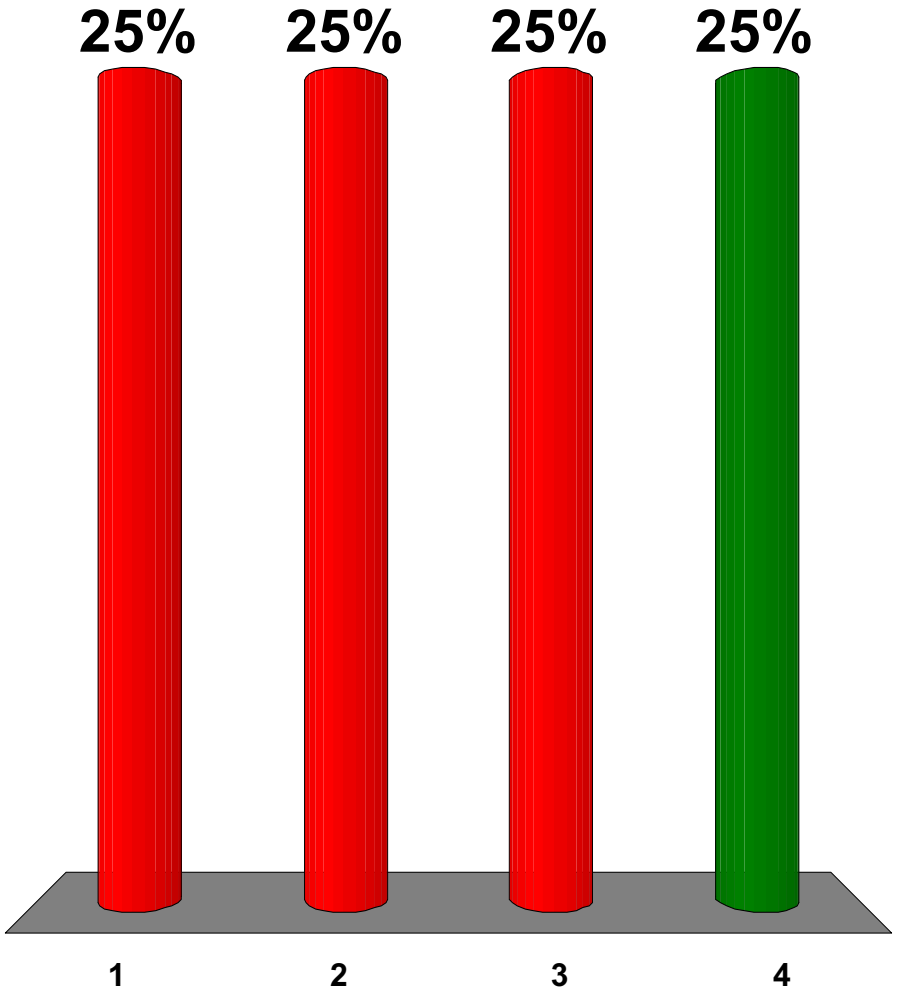
A decomposer is a type of:

1. Primary consumer
2. Secondary consumer
3. Producer
4. Detritivore



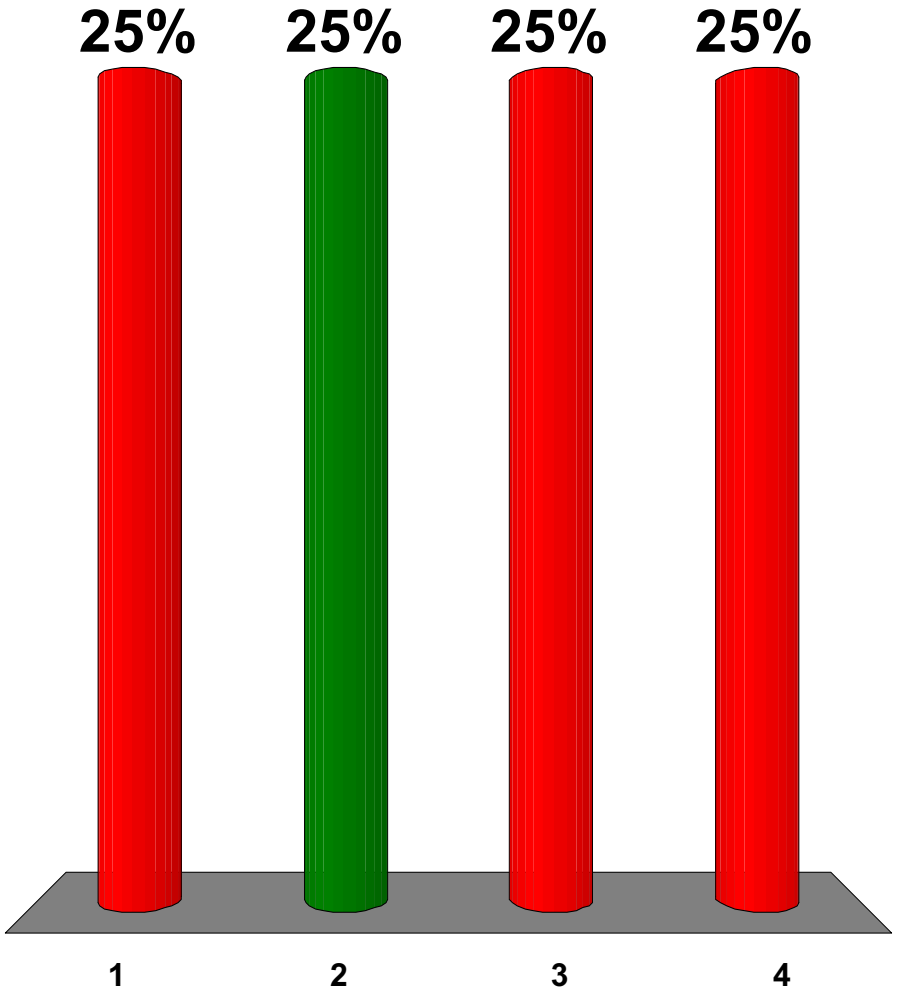
The percentage of usable energy transferred as biomass from one trophic level to another is called:

1. Energy flow
2. The limiting factor
3. Biomass
4. Ecological efficiency



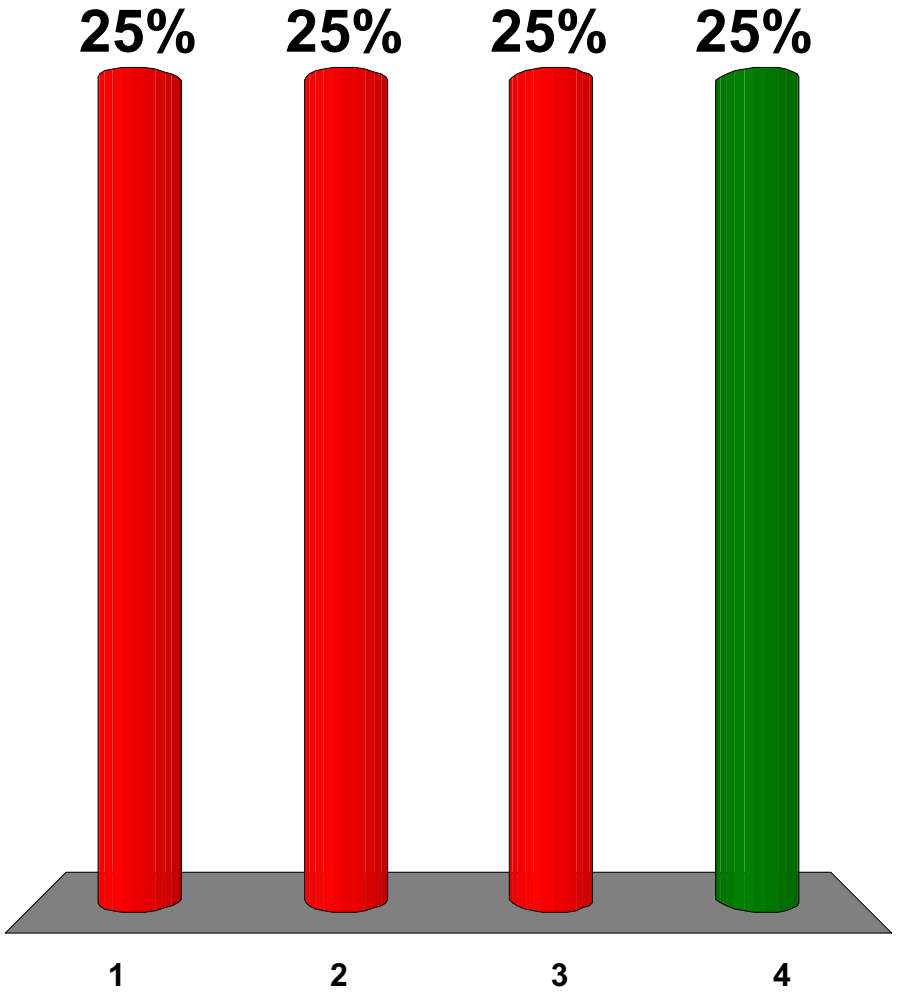
Which of the following is not one of the most productive ecosystems?

1. Swamp
2. Temperate grassland
3. Tropical rain forest
4. Estuary



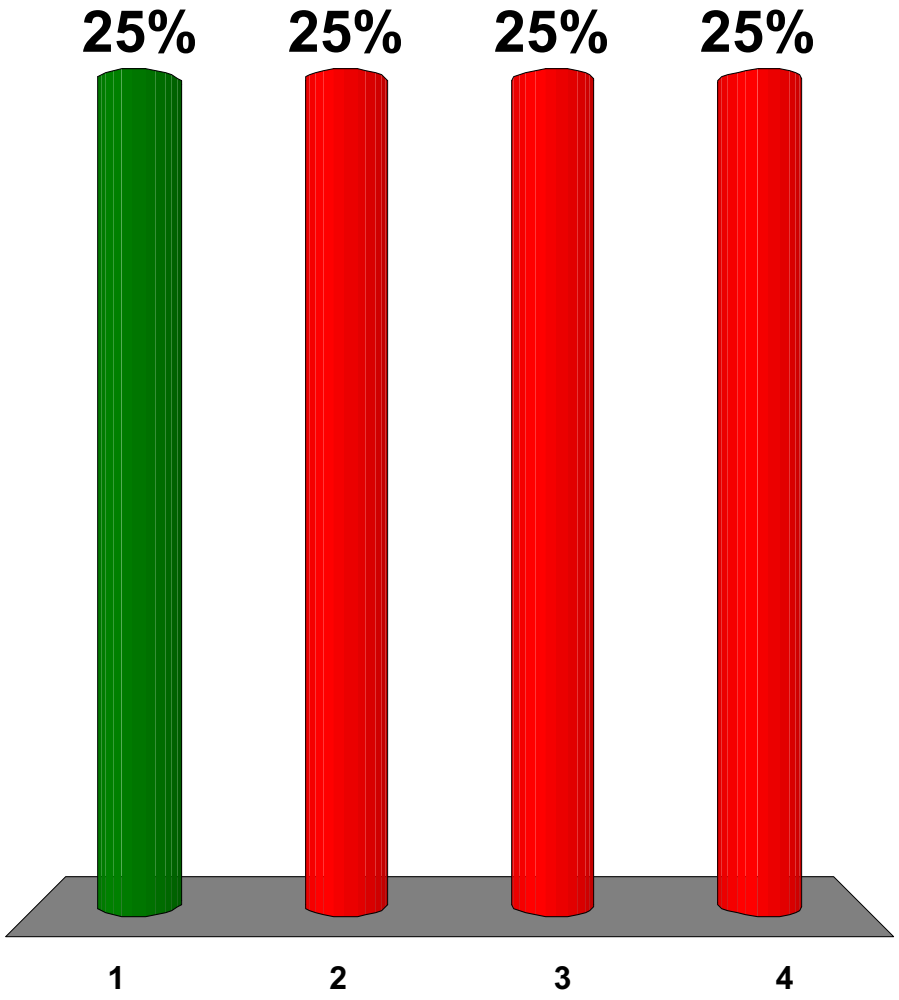
Soil:

1. Filters and cleans water
2. Provides most of the nutrients plants need
3. Is renewable only over a very long period of time
4. All of the choices



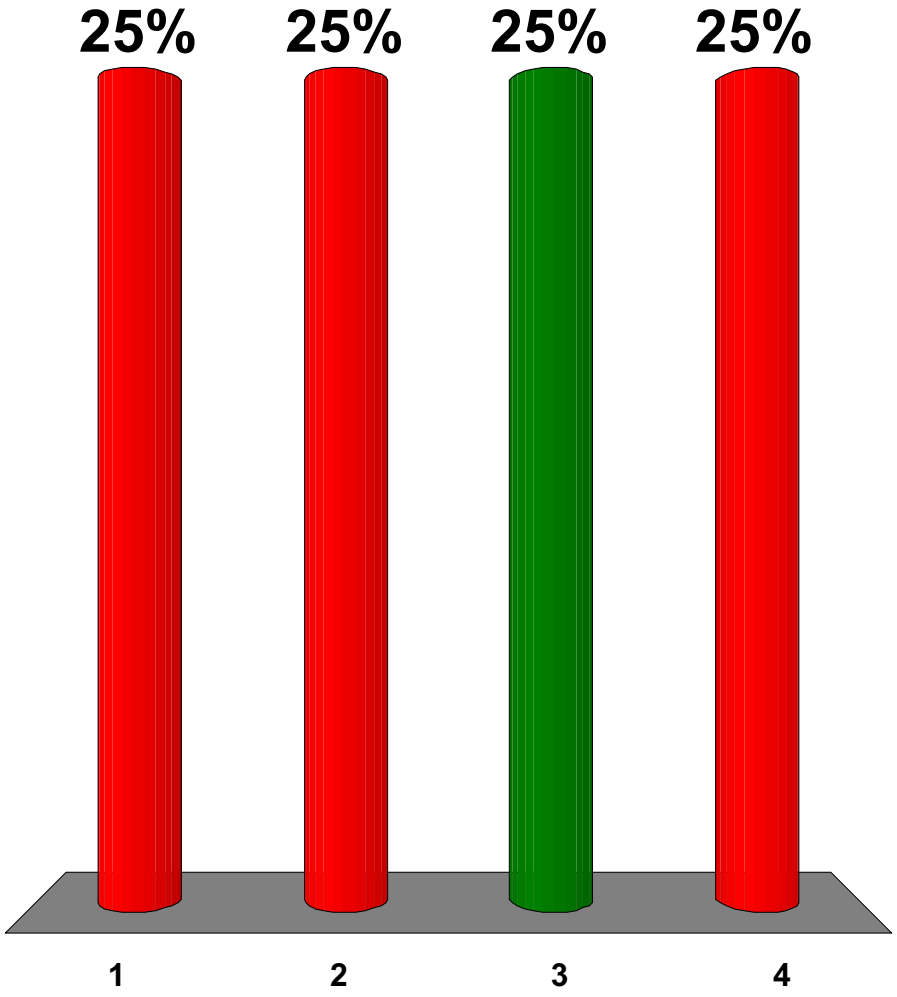
A soil horizon consists of:

1. The horizontal layers in mature soil
2. The surface litter layer
3. The top layer of soil in which plants live
4. Only the “The surface litter layer” & “The top layer of soil in which plants live” layers of soil



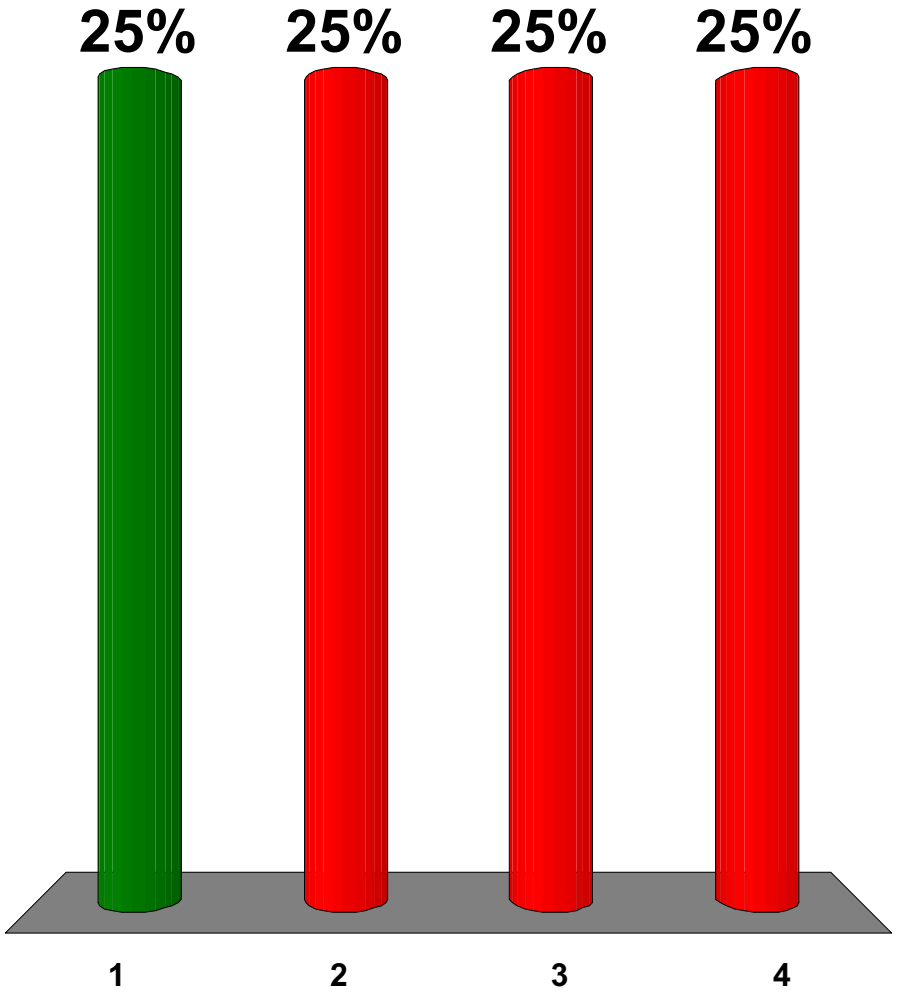
Which biogeochemical cycle is involved in producing fossil fuels?

1. The water cycle
2. The nitrogen cycle
3. The carbon cycle
4. The phosphorus cycle



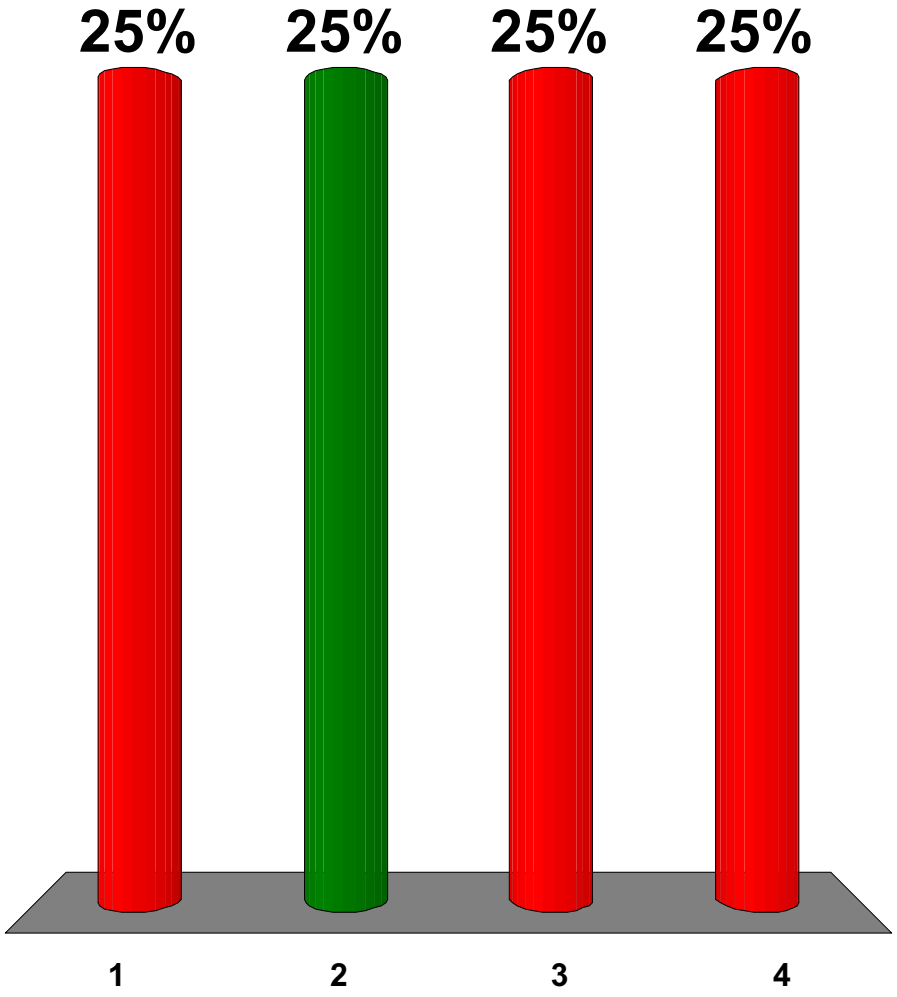
Which of the following is often the limiting factor for plant growth on land?

1. Phosphorus
2. Sulfur
3. Nitrogen
4. Carbon



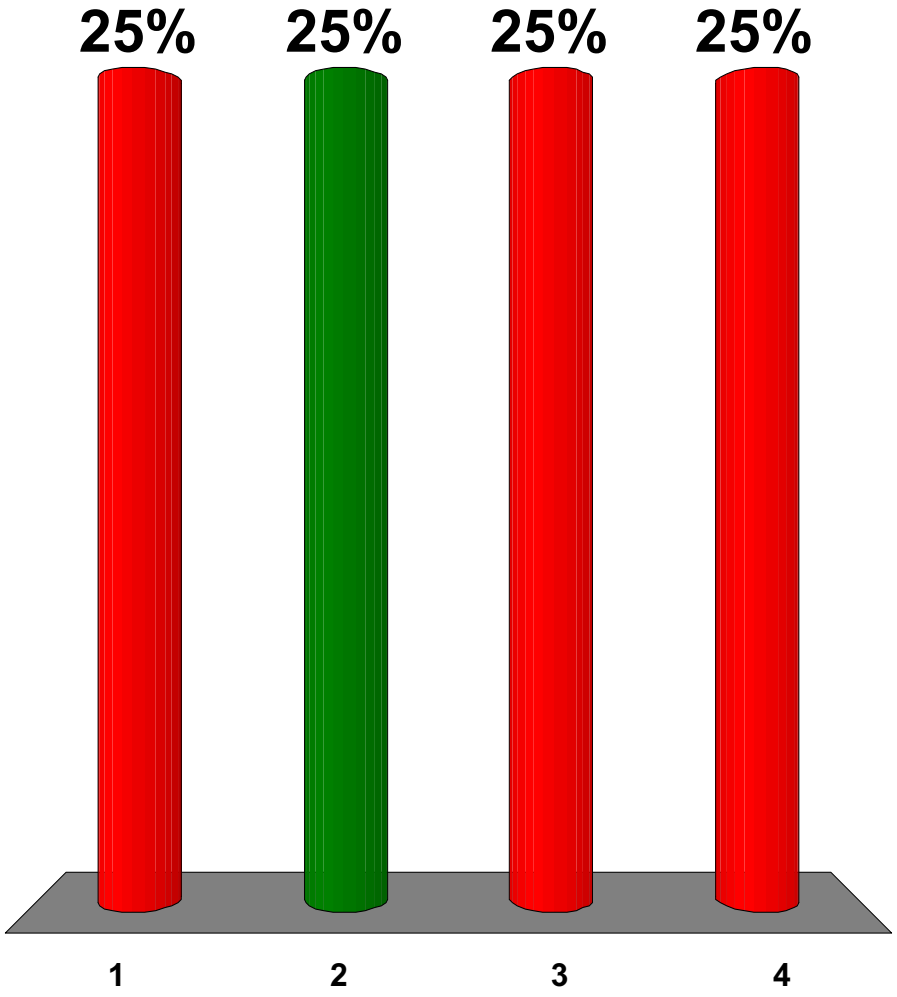
What is systems analysis?

1. Observations of food webs
2. Modeling ecosystem function
3. Generating maps with GIS
4. Applied field research



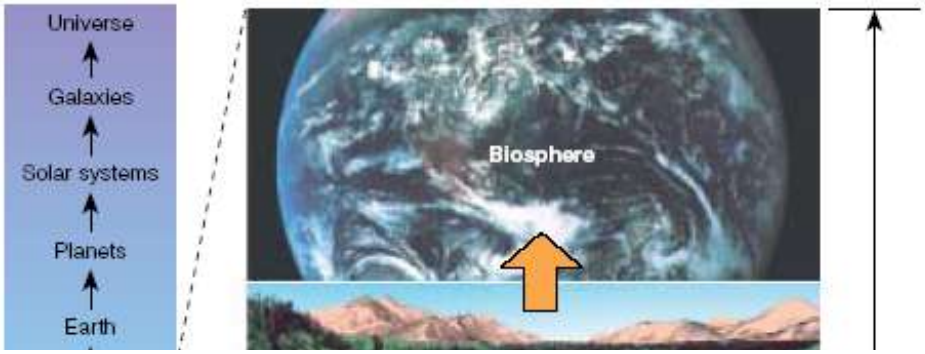
What does the “H” stand for in the scientific acronym “HIPPO,” which describes the five major causes of species decline and premature extinction?

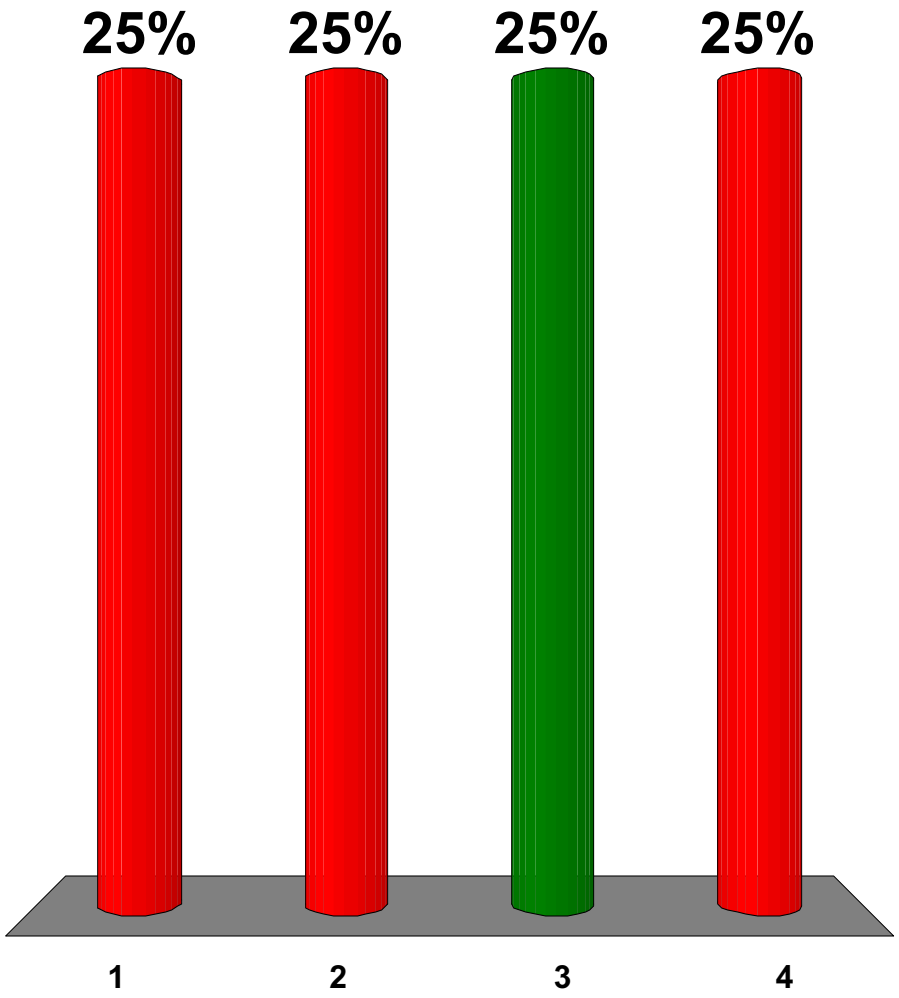
1. Health concerns
2. Habitat destruction and degradation
3. Human intervention
4. Hunting and exploitation

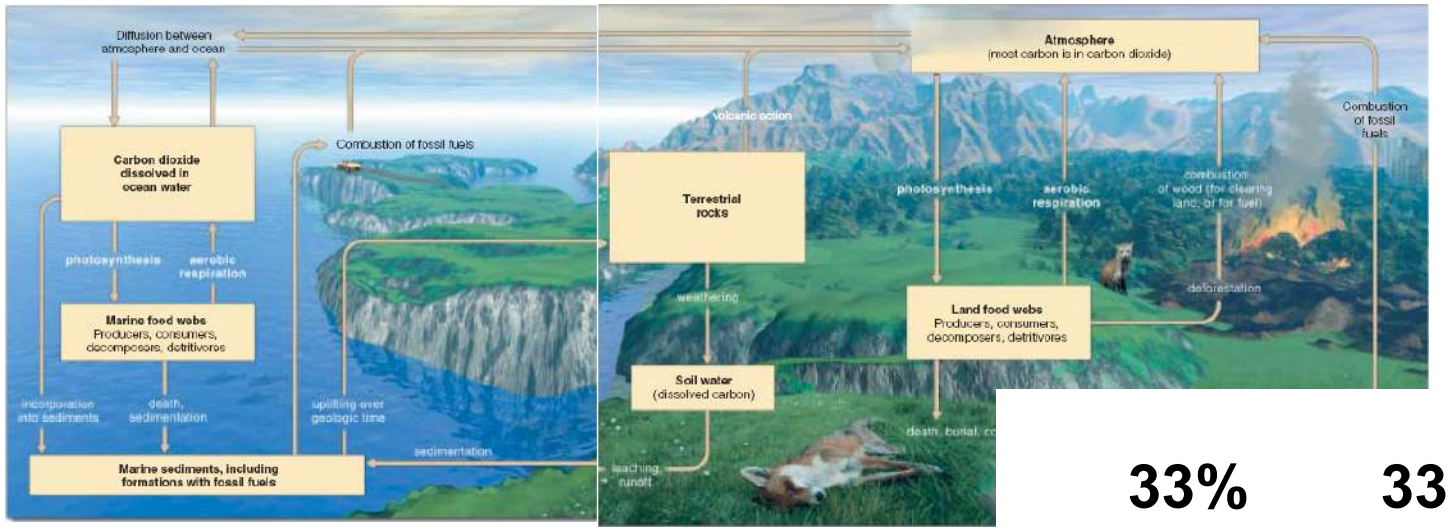


Which of the following is an example of a population?

1. All of the fish in a pond
2. All of the trees in a forest
3. All of the students in this classroom
4. All of the saprophytes in a rotting log

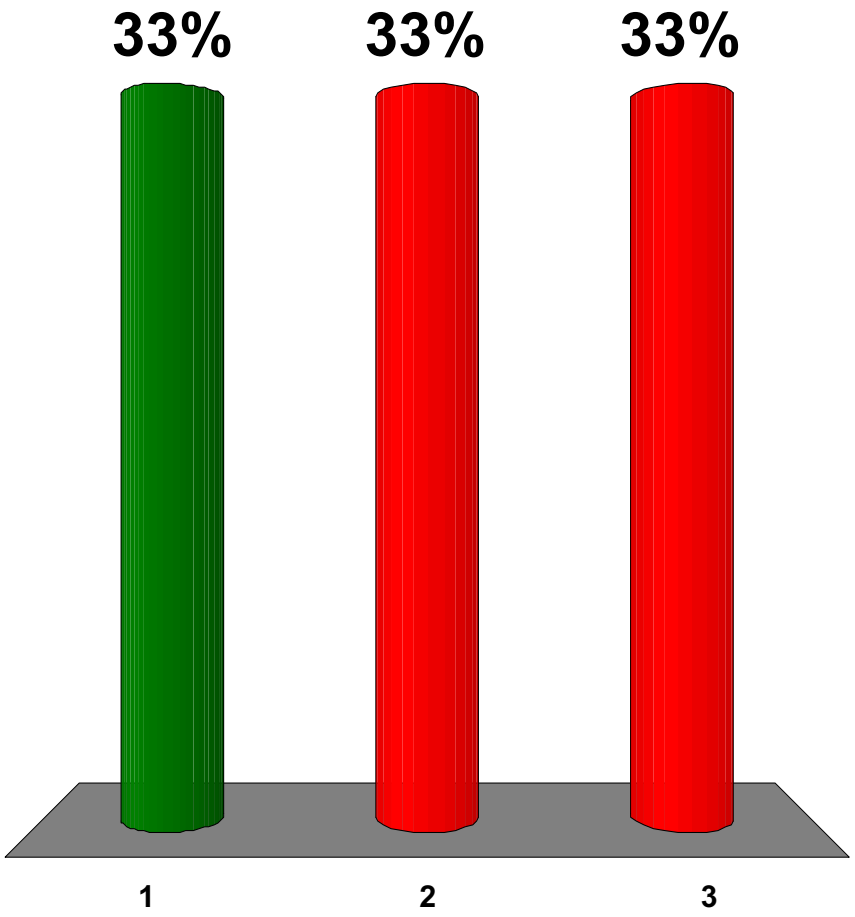






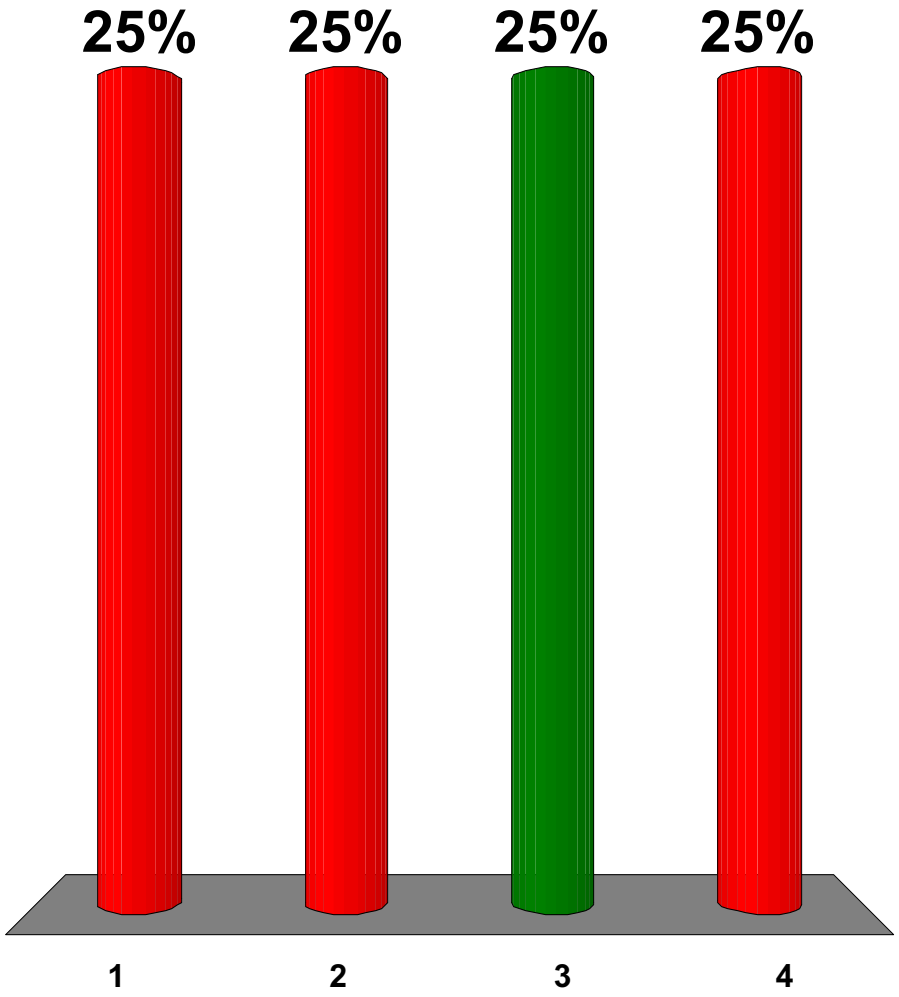
Carbon can be found as a solid, a liquid and a gas as it moves through the carbon cycle. Which of the following laws explains this?

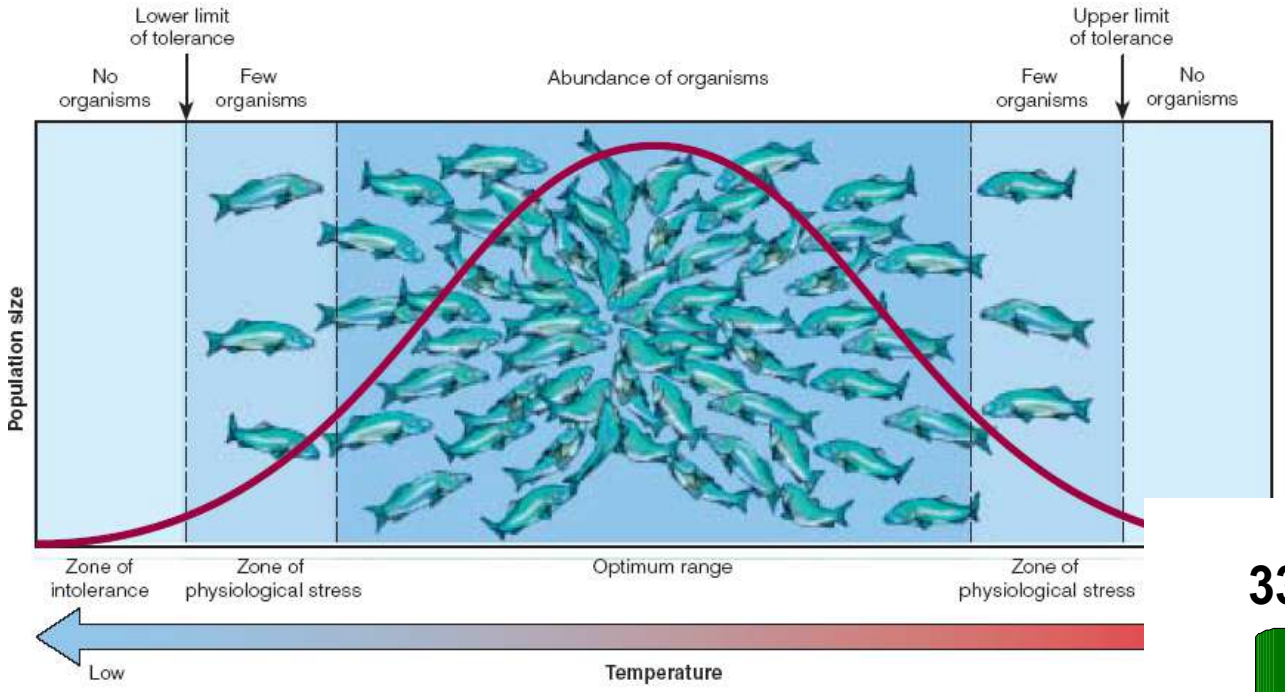
1. Law of Conservation of Matter
2. First Law of Thermodynamics
3. Second Law of Thermodynamics



Which type of radiation is predominately radiated by the earth? What type of radiation is predominately radiated by the atmosphere?

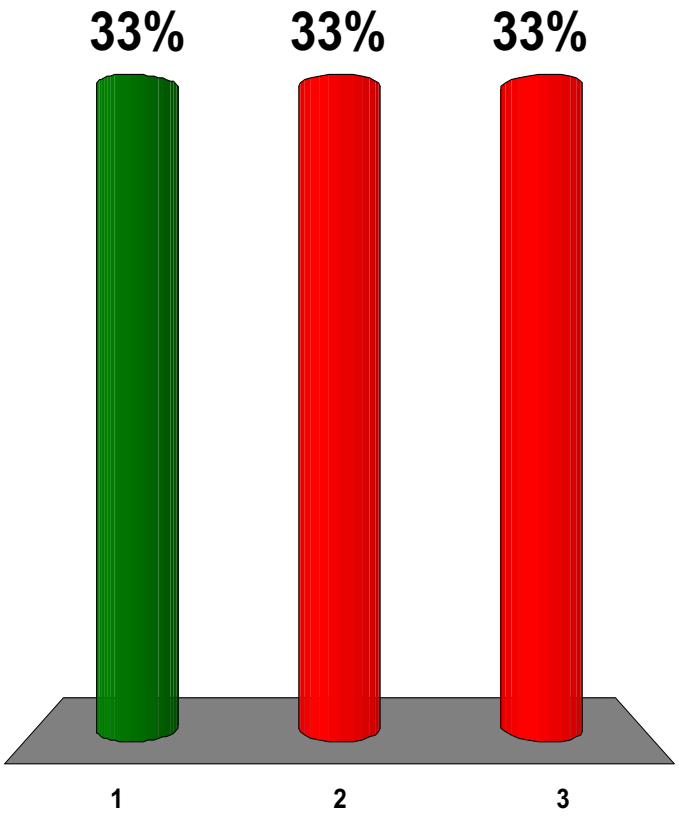
1. UV; infrared
2. Infrared; gamma
3. Infrared; UV
4. UV; UV





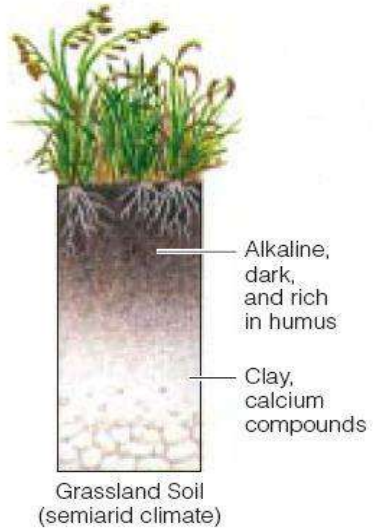
If most organisms in a population thrive at an average temperature, why are some able to survive in zones of physiological stress?

1. There is genetic variability within the population
2. Population density in the optimum range is too great so some individuals must adapt to stressful conditions
3. All the individuals in the population are genetically identical



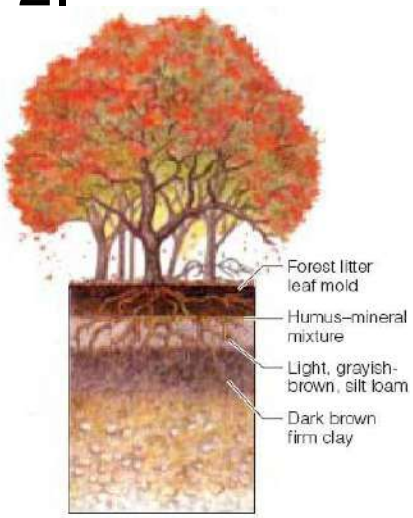
Which of the following soil types is generally most fertile?

1.



Grassland Soil (semiarid climate)

2.



Deciduous Forest Soil (humid, mild climate)

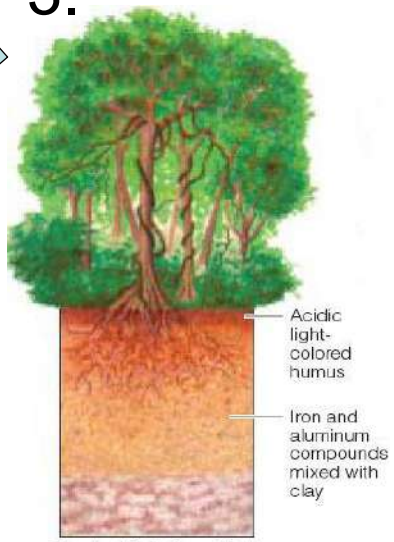
Oı

Tv

Tr

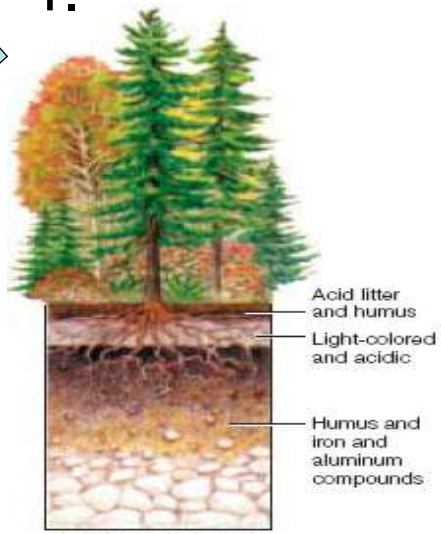
4 Choice Four

3.

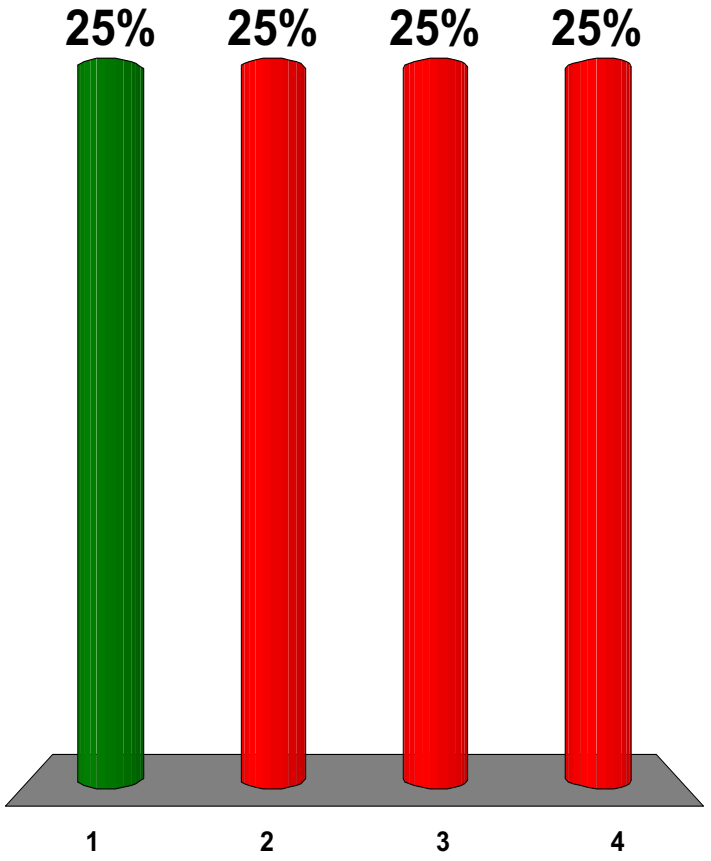


Tropical Rain Forest Soil (humid, tropical climate)

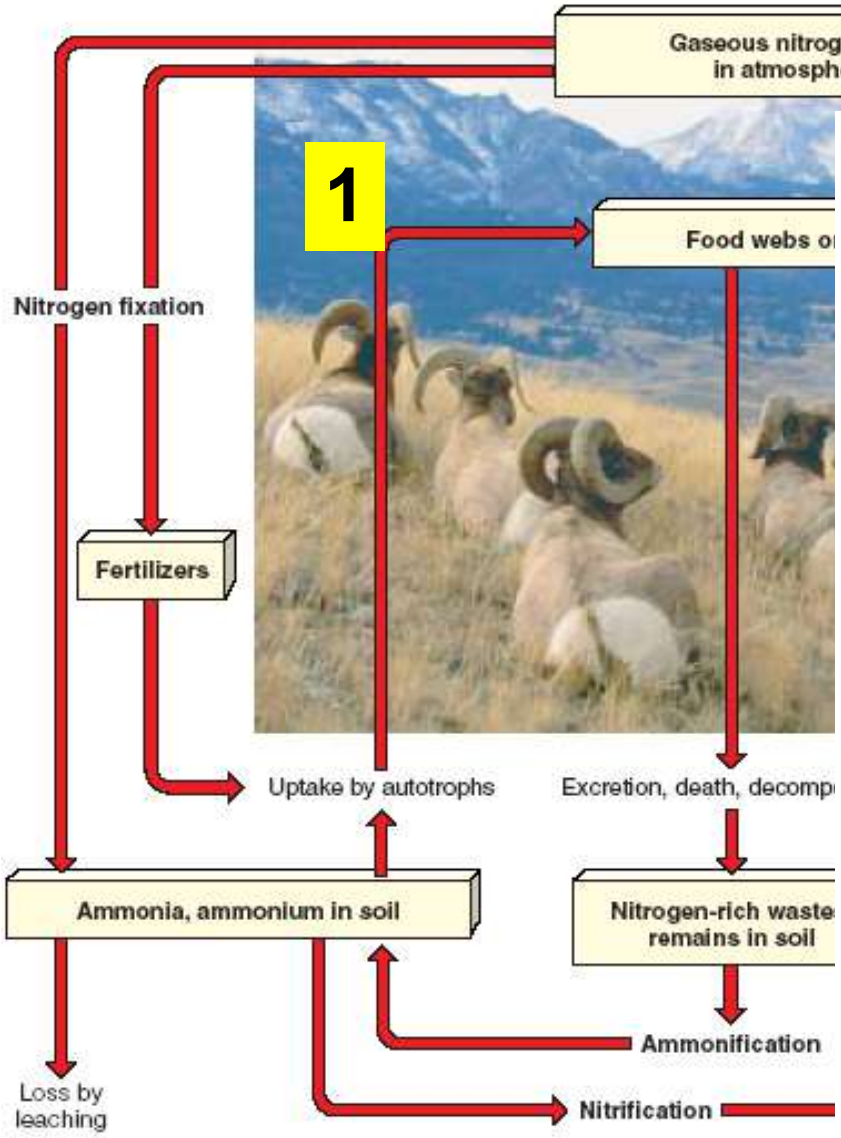
4.

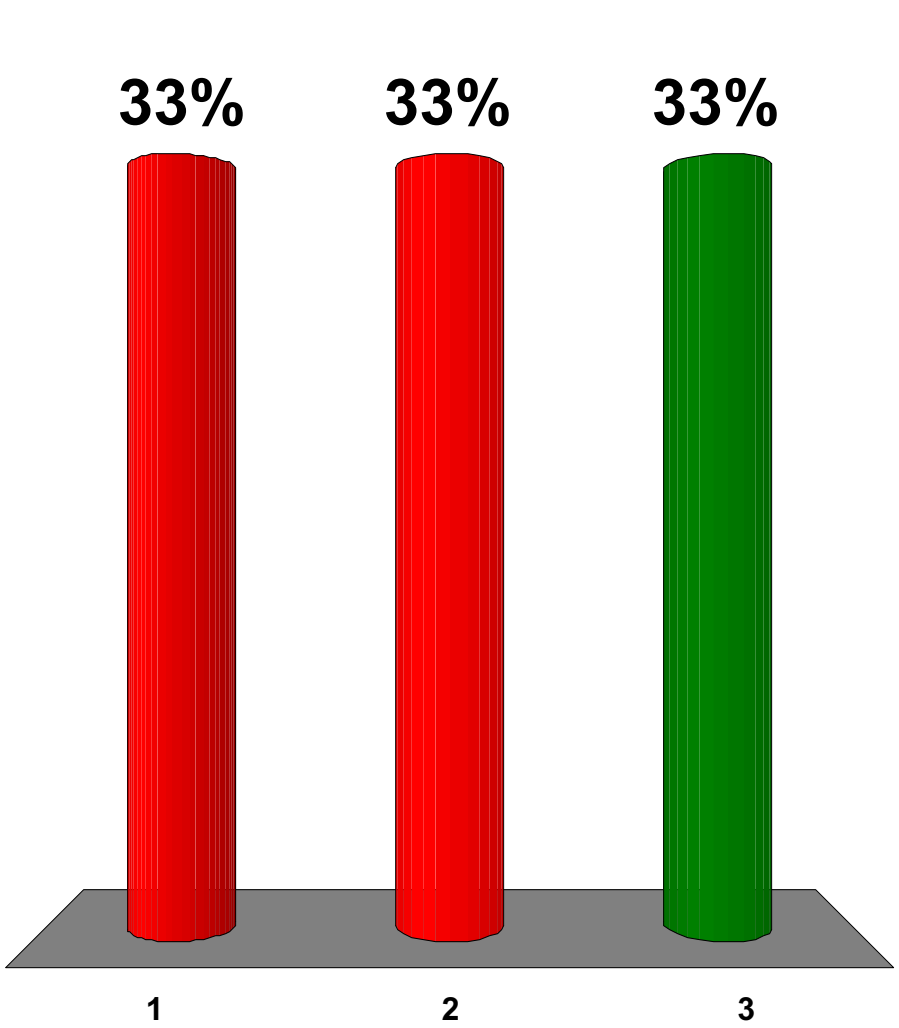


Coniferous Forest Soil (humid, cold climate)



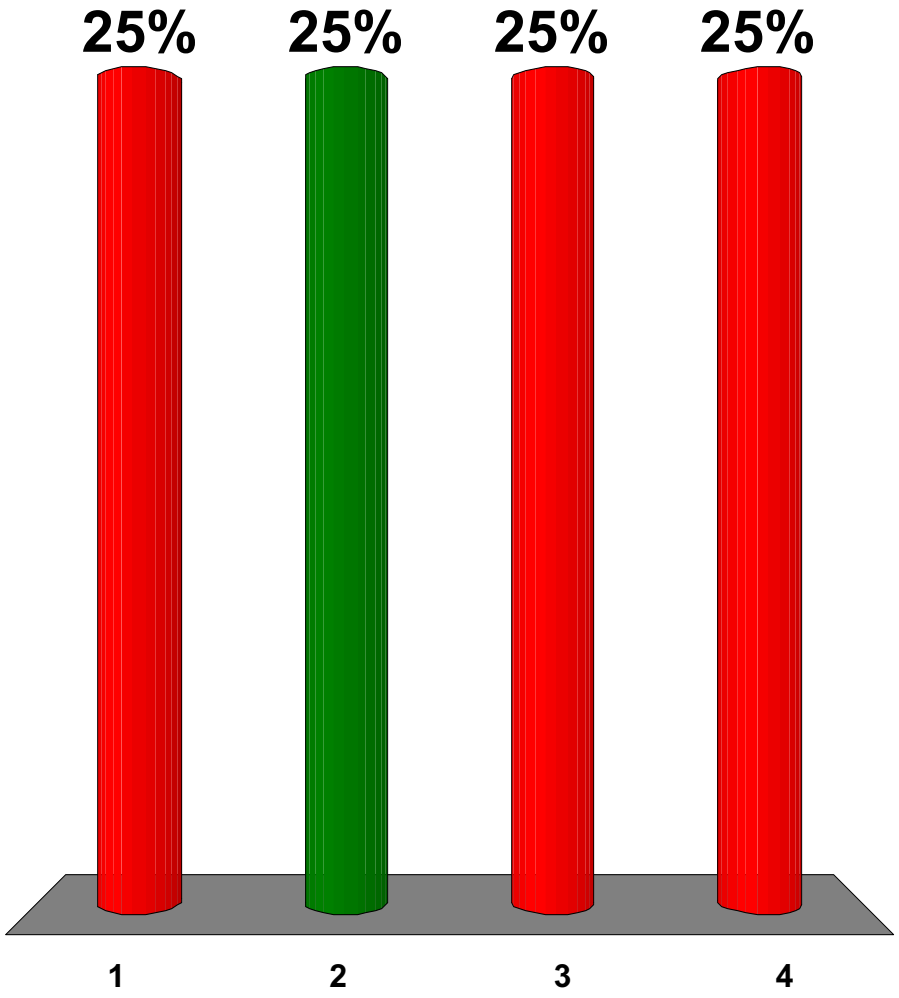
Which of the following processes converts nitrogen in the soil back into a gas in the atmosphere?





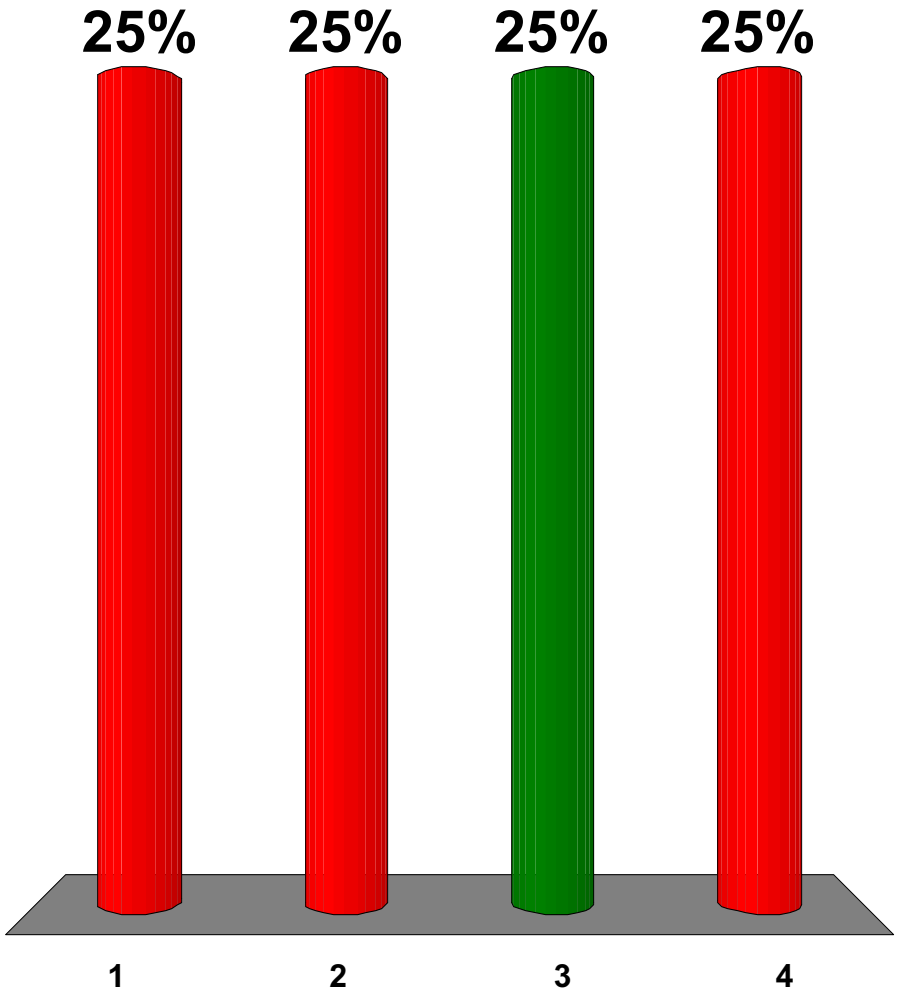
A community consists of _____ living in _____.

1. Communities, biospheres
2. Organisms, populations
3. Populations, ecosystems
4. Populations, reserves



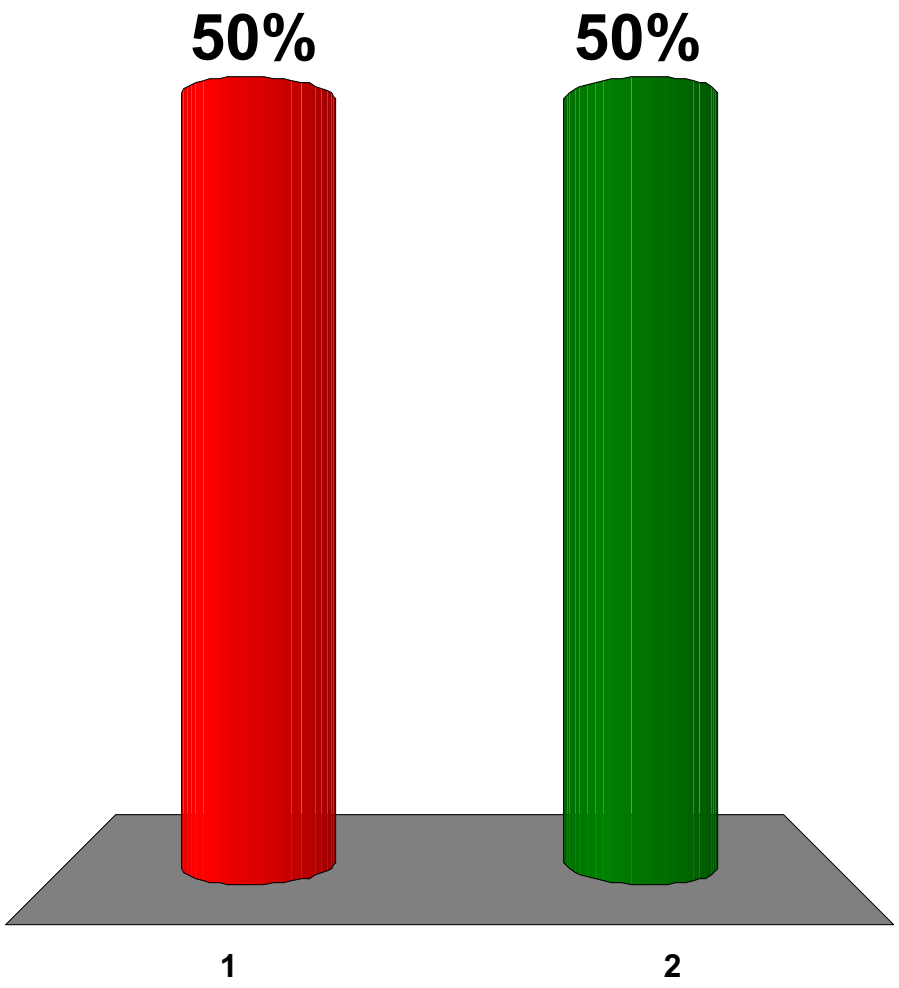
_____ is responsible for evaporation, water recycling, wind, and plant growth.

1. An ecosystem
2. Gravity
3. Solar energy
4. The atmosphere



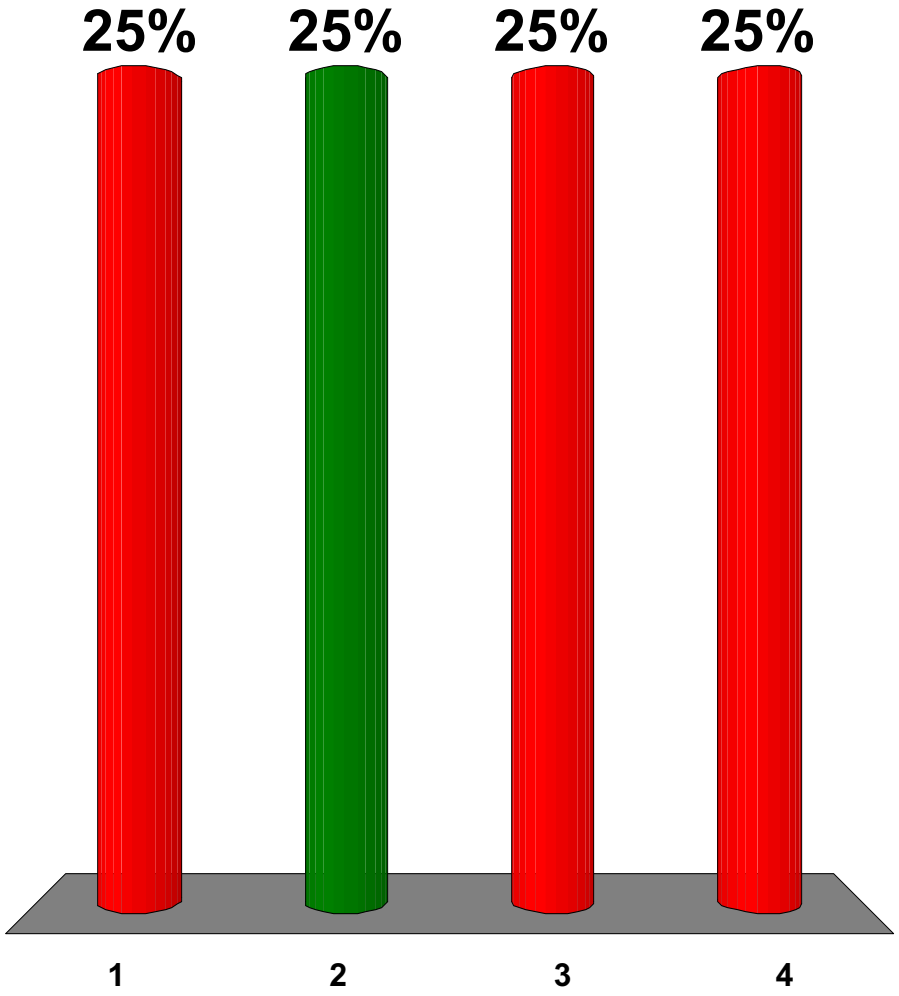
True or false? The sun's energy flows to the earth and is absorbed completely by it.

1. True
2. False



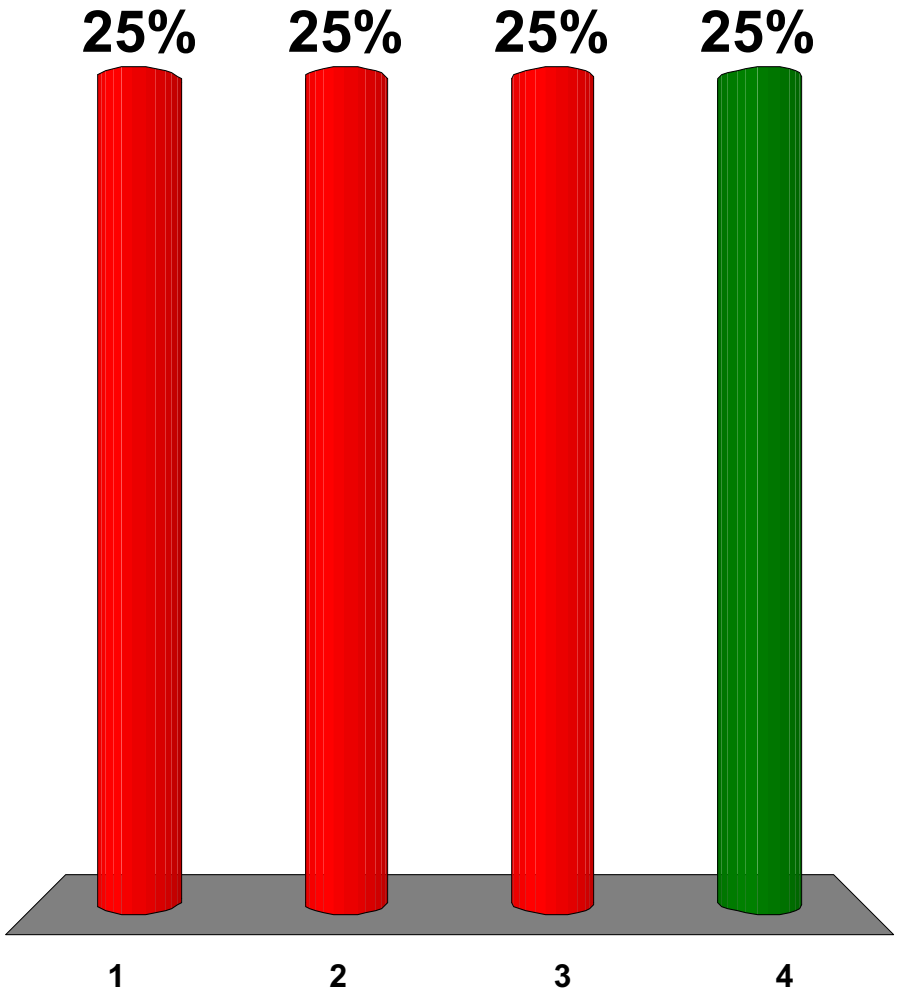
A(n) _____ is a community of different species that interact with each other and their environment.

1. Biosphere
2. Ecosystem
3. Habitat
4. Population



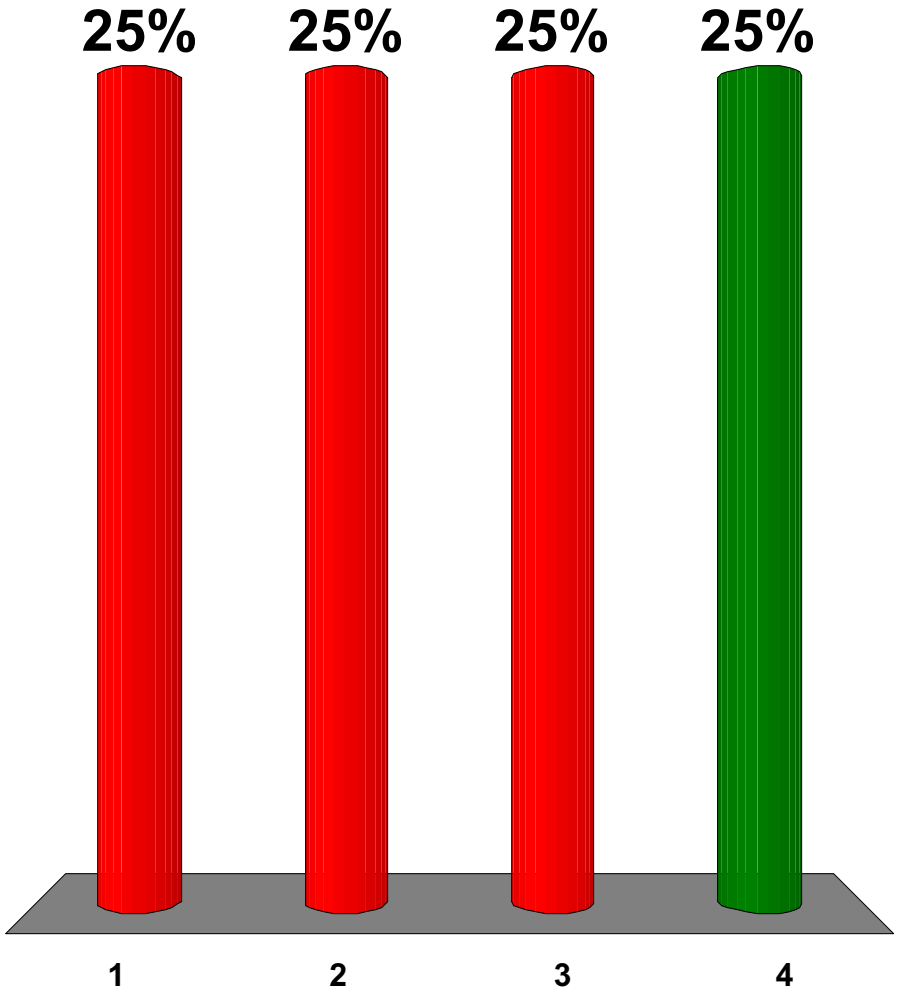
A fox is a(n):

1. Consumer
2. Heterotroph
3. Omnivore
4. All of the choices



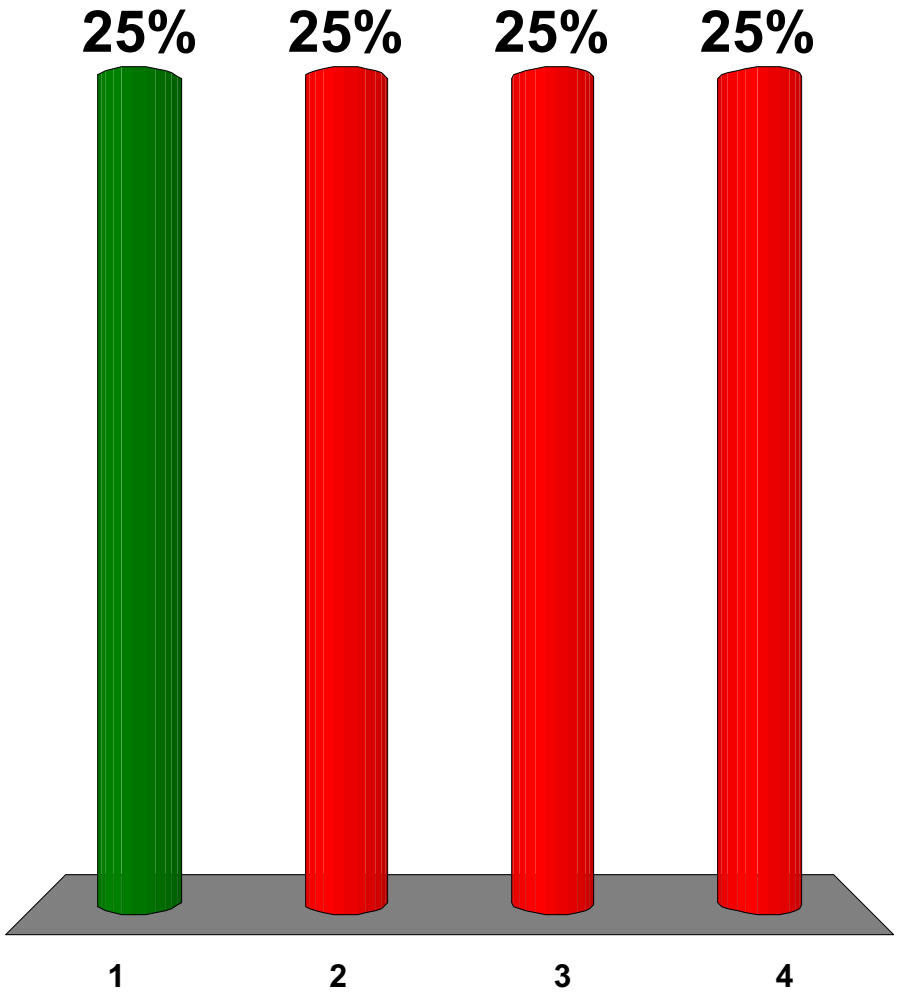
_____levels occur in food chains and food webs.

1. Biomass
2. Biotic
3. Diversity
4. Trophic



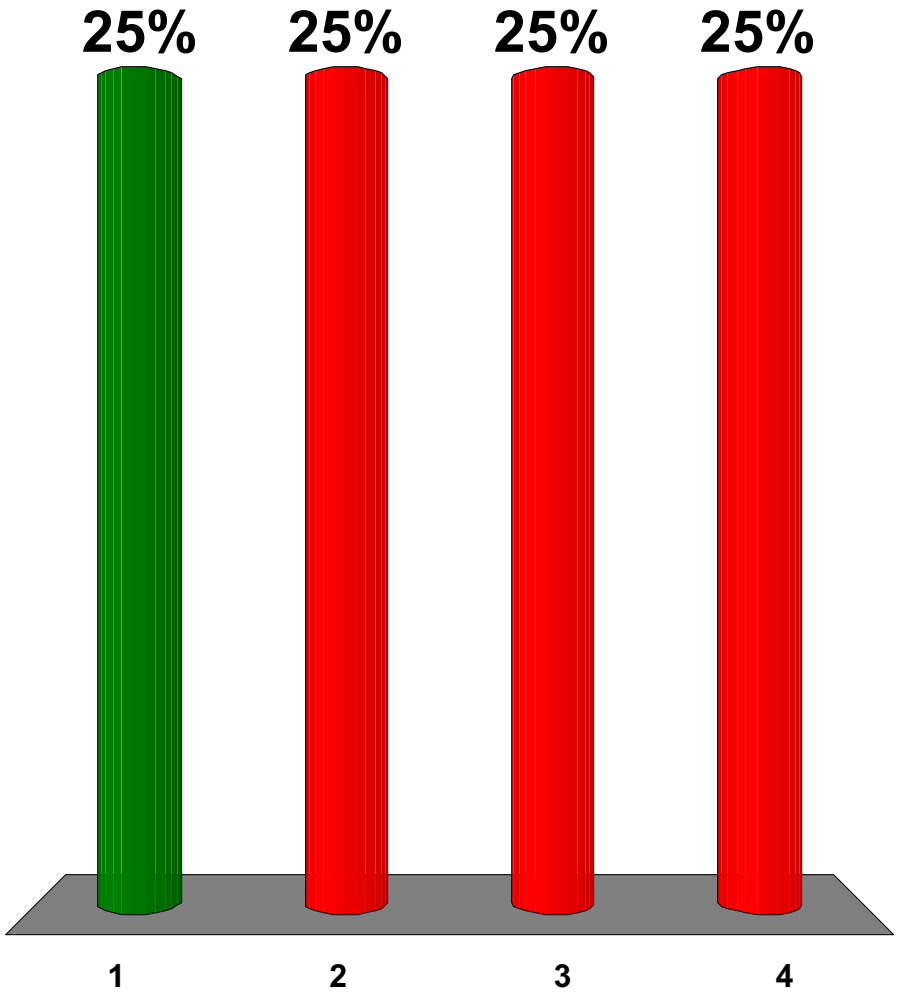
The beetles that feed on and pollinate the rainforest flowers are:

1. Consumers
2. Decomposers
3. Detritivores
4. Producers



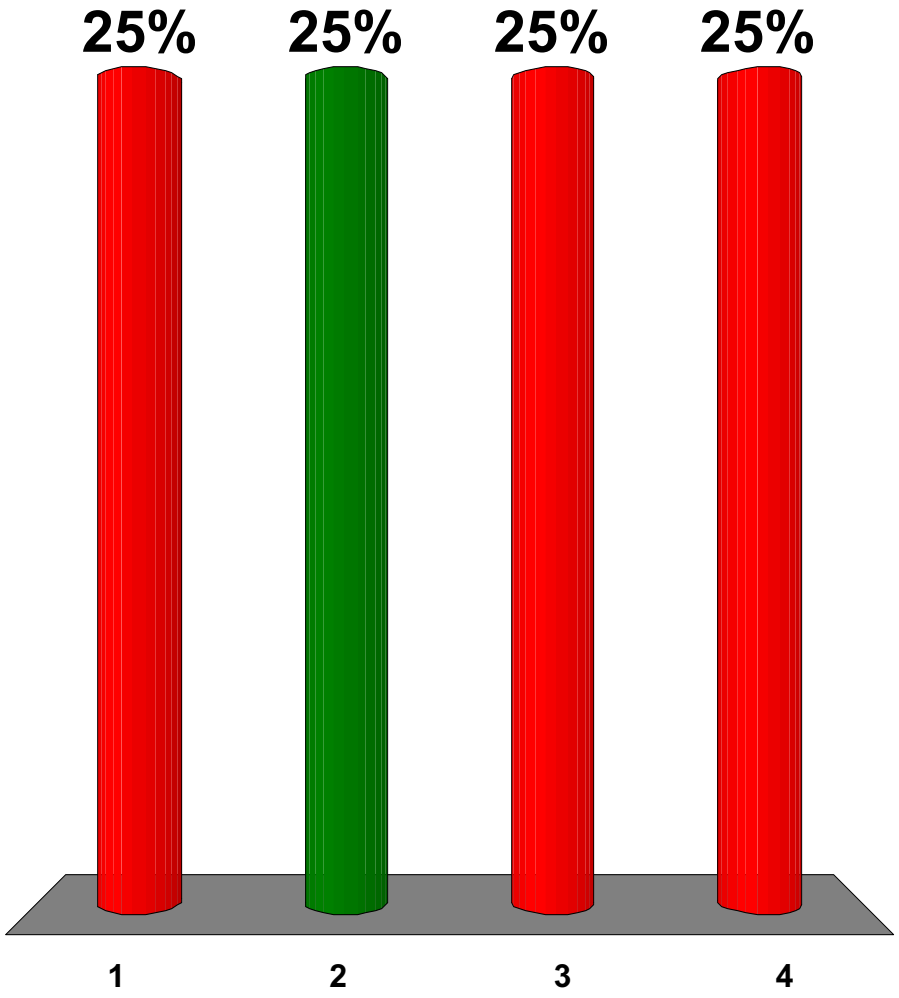
Every trophic level contains a certain amount of:

1. Biomass
2. Individuals
3. Species
4. None of the choices



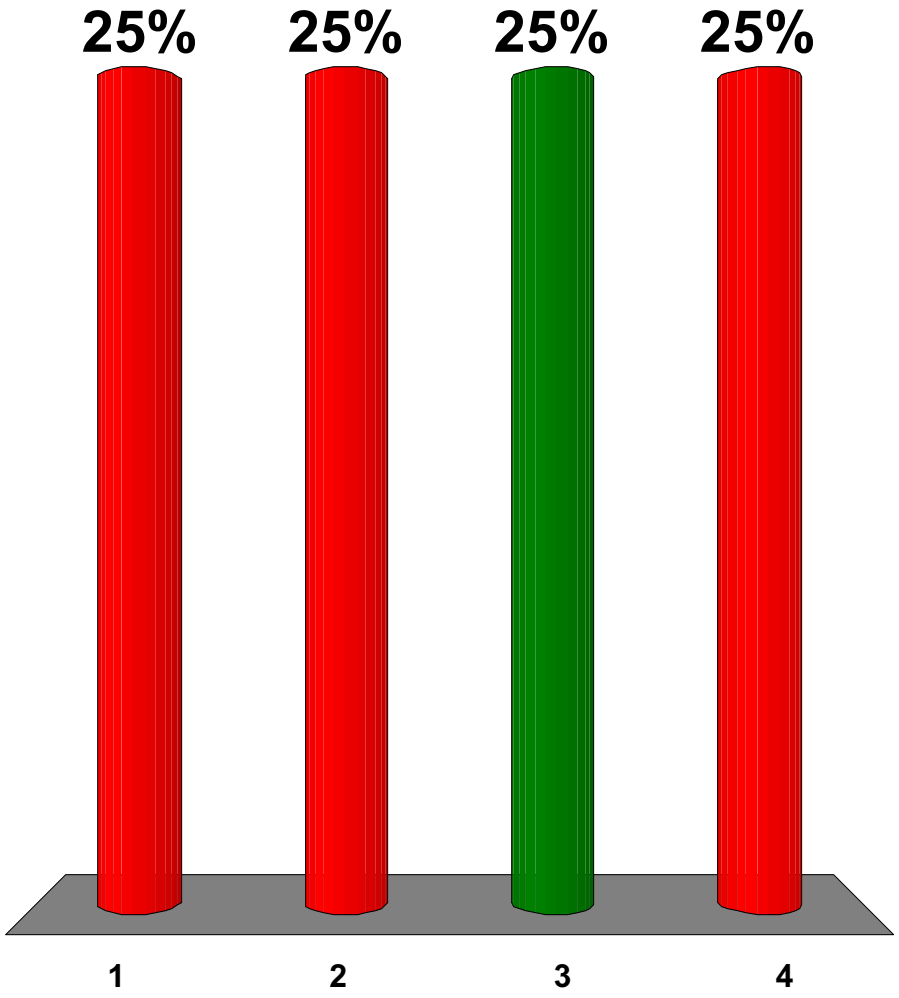
Gross primary productivity is:

1. The rate at which consumers use up chemical energy as food
2. The rate at which an ecosystem's producers convert solar energy into chemical energy
3. The rate at which an ecosystem's producers convert solar energy into chemical energy minus the rate at which they use some of this energy
4. The rate at which biomass accumulates minus the amount used by consumers



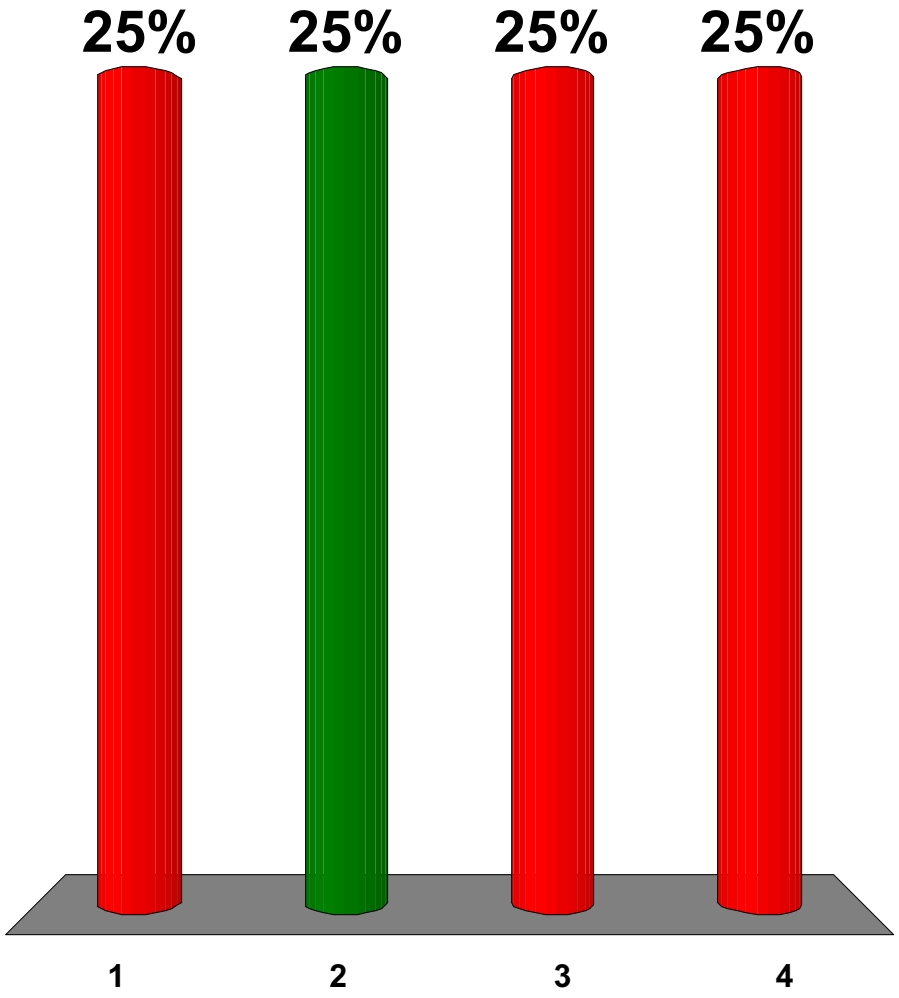
The top layer in a soil profile, composed mainly of leaf litter, is called the ___ horizon.

1. A
2. First
3. O
4. Surface



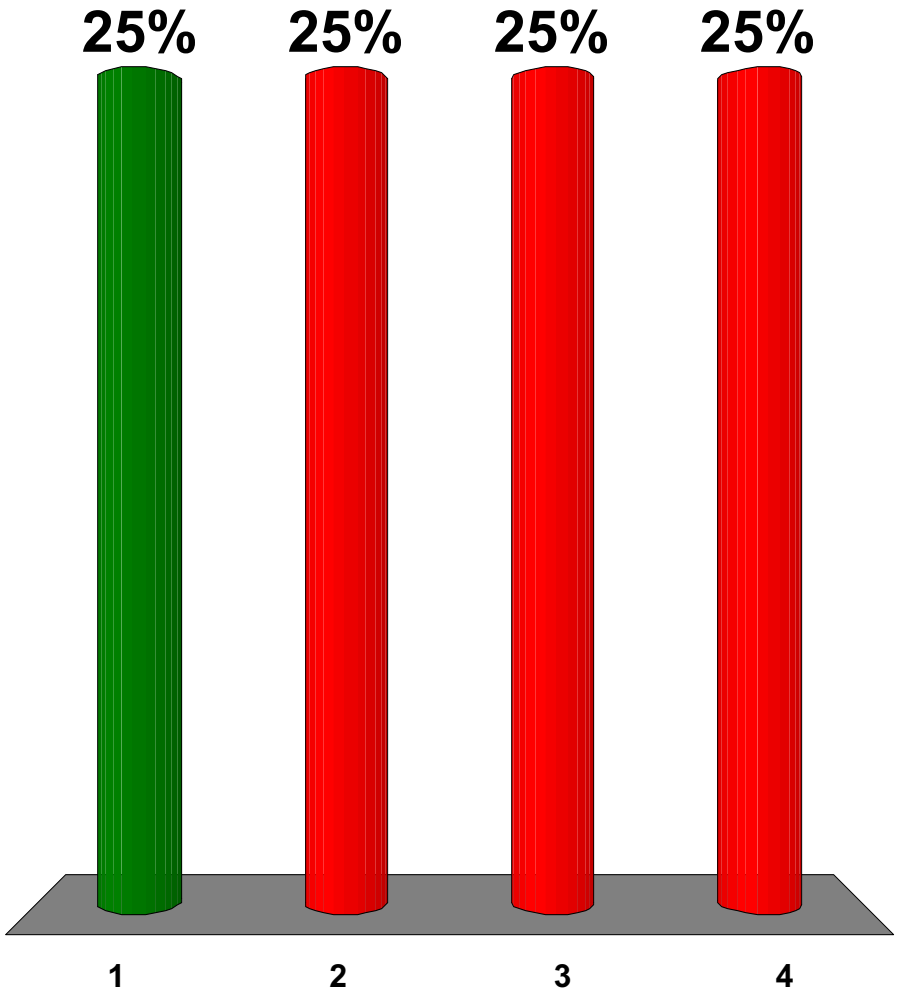
_____ recycle nutrients through the earth's air, water, land, and living organisms.

1. Decomposers
2. Global cycles
3. Soils
4. Solar rays



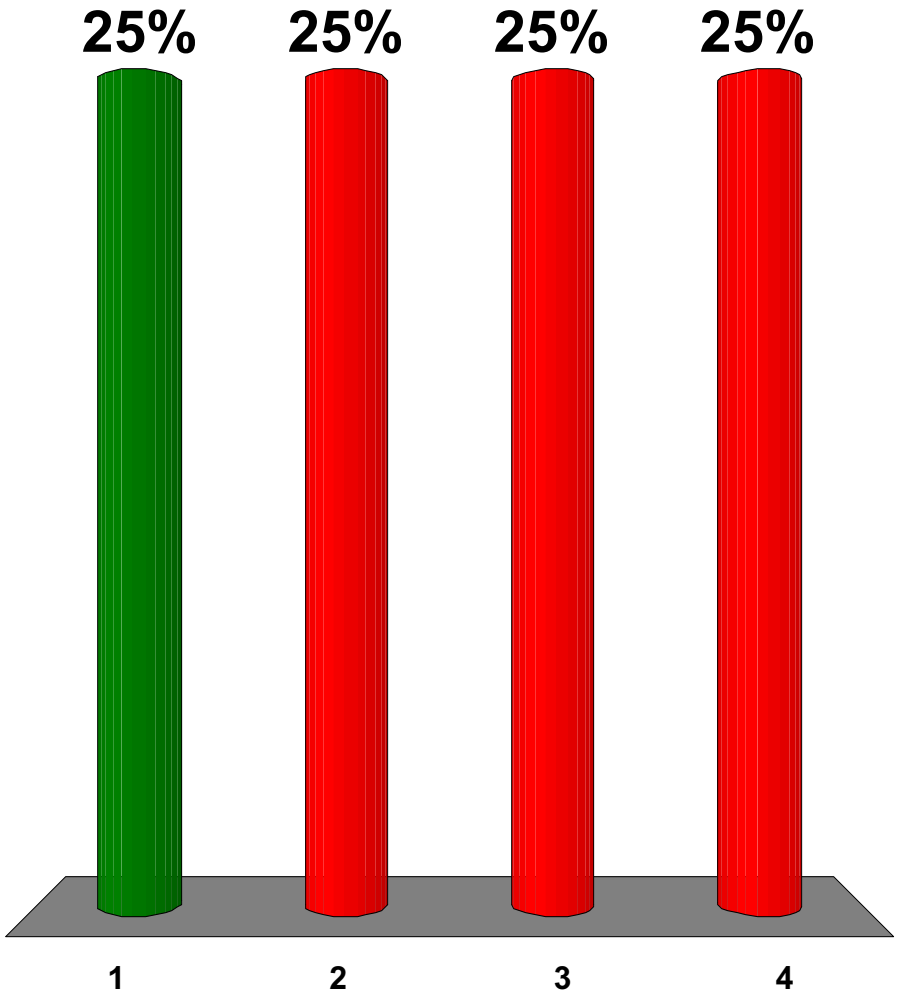
Some of the fresh water that falls to the earth as precipitation becomes locked in glaciers. The rest:

1. Becomes surface runoff
2. Is immediately evaporated
3. None of the choices
4. Both of the choices



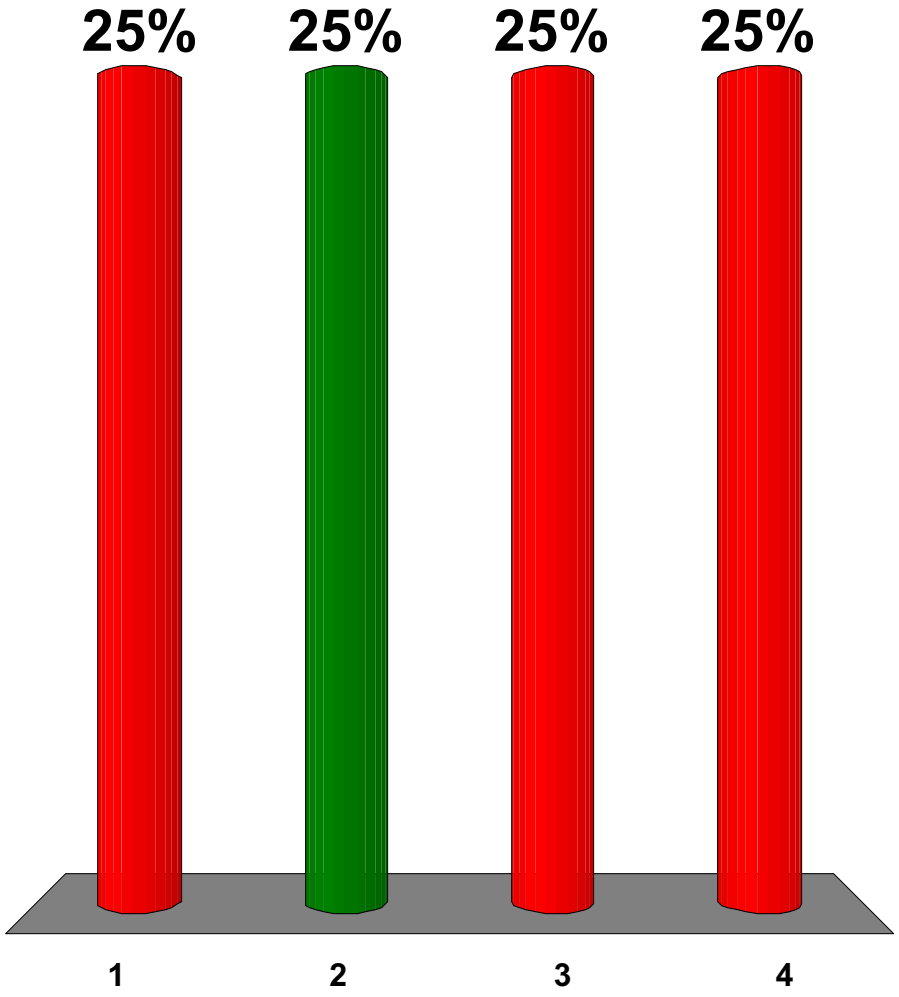
Climate change is a result of disruption to the earth's ____ cycle.

1. carbon
2. nitrogen
3. phosphorus
4. water



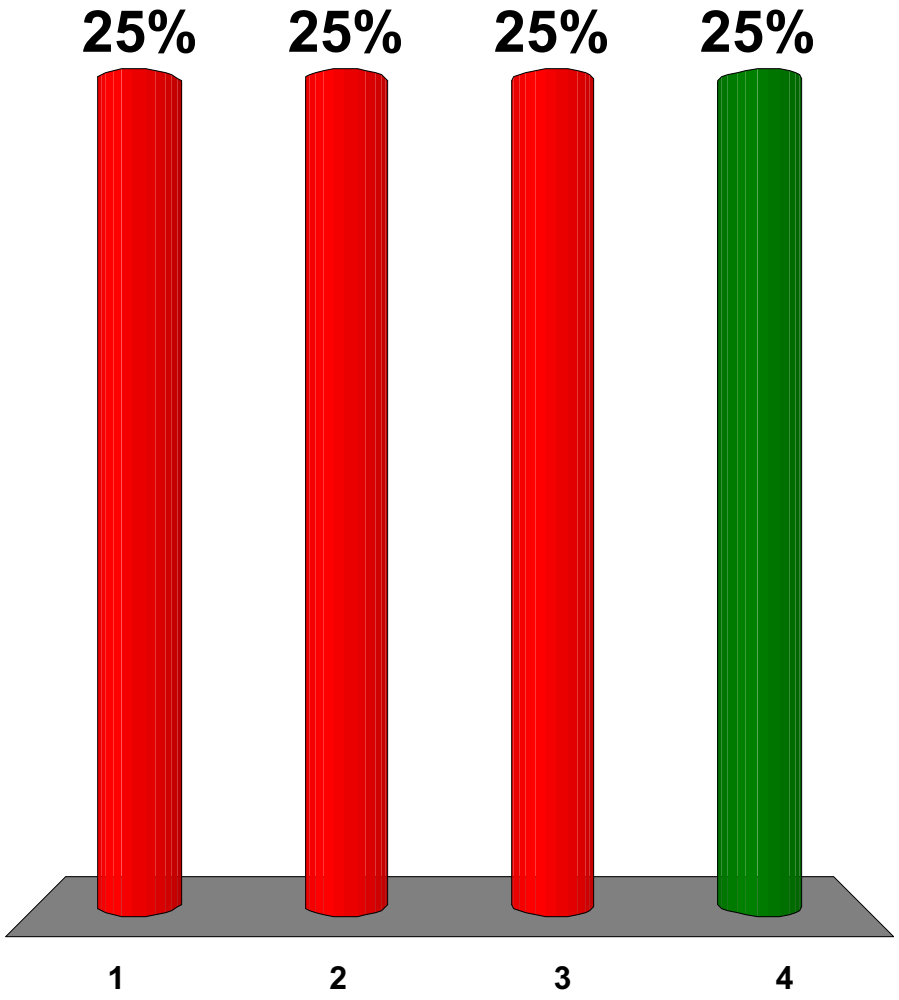
What element is converted to usable form by lightning and certain types of bacteria?

1. Carbon
2. Nitrogen
3. Oxygen
4. Phosphorus



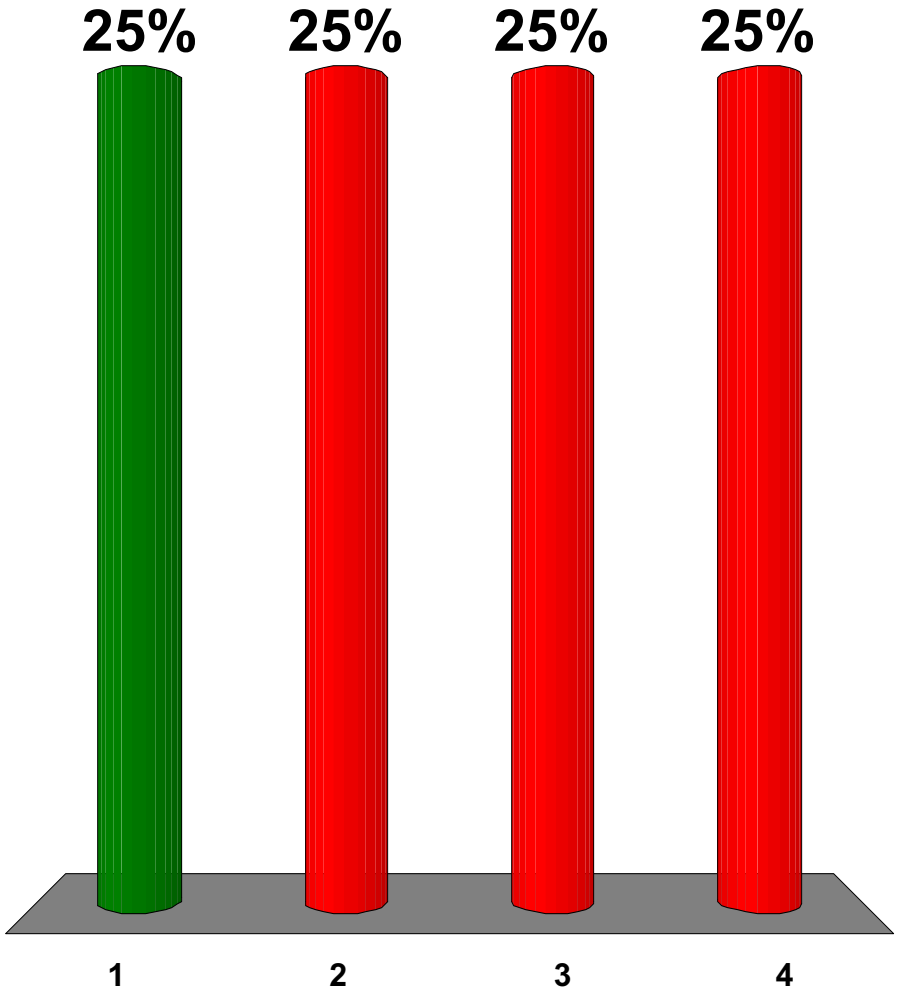
Humans have disrupted the _____ cycle by releasing large amounts of animal wastes and sewage into aquatic systems.

1. ammonia
2. carbon
3. nitrogen
4. phosphorus



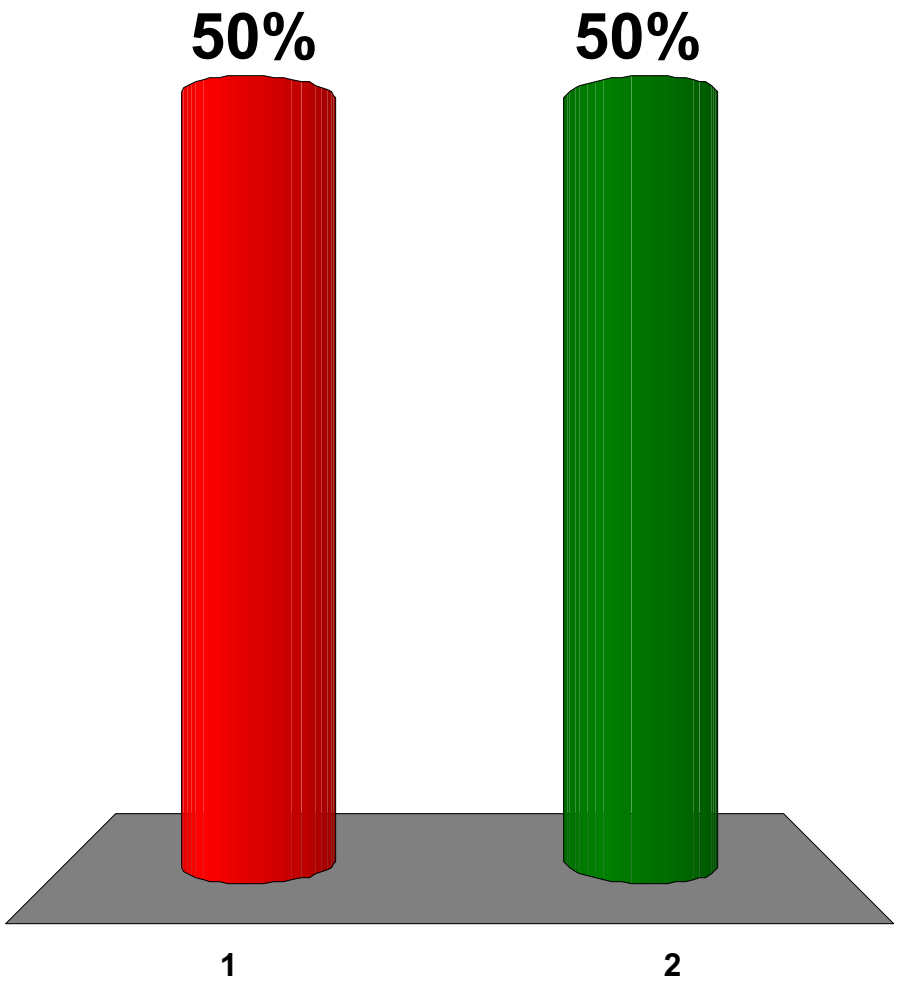
Which two elements contribute to acid deposition, or acid rain?

1. Nitrogen and sulfur
2. Nitrogen and phosphorus
3. Phosphorus and sulfur
4. Phosphorus and carbon



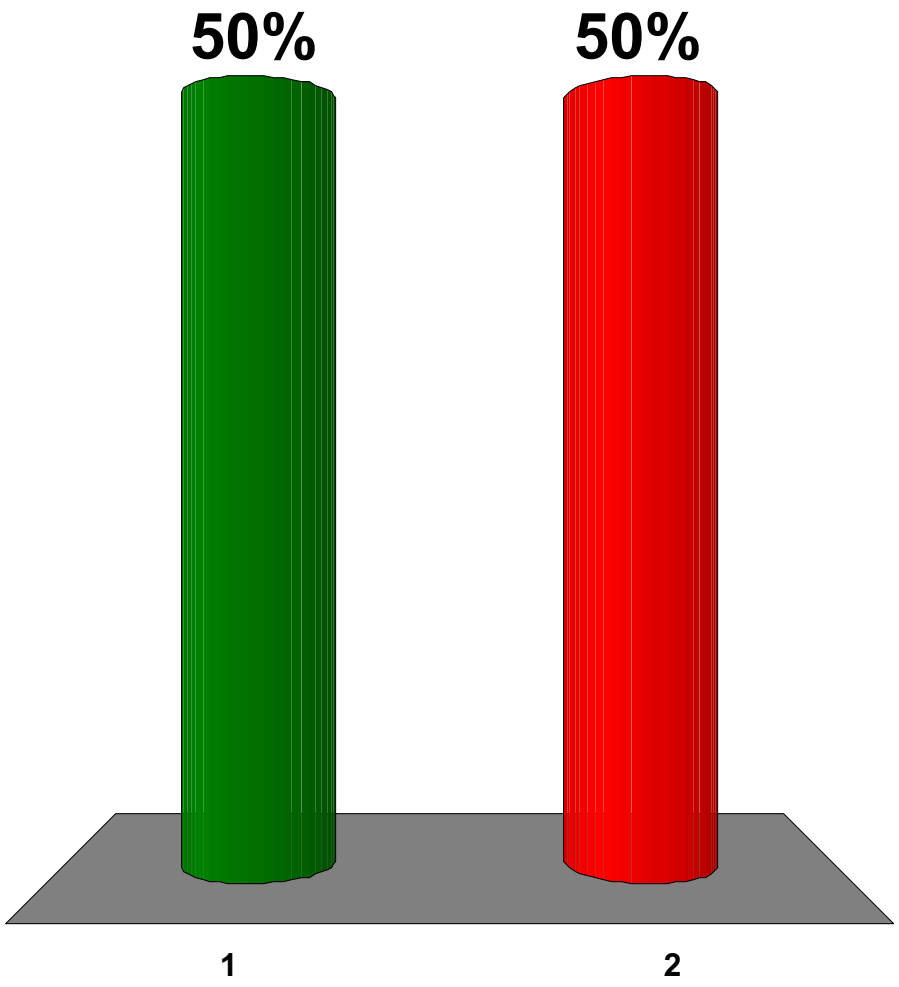
True or false? Field research in ecology can only be done by going out into the field for observation.

1. True
2. False



True or false? Scientists have less than half of the baseline data they need to evaluate the status of ecosystems.

1. True
2. False



The four components of biodiversity include:

1. Functional, genetic, geological, and species
2. Functional, industrial, ecological, and species
3. Functional, genetic, ecological, and natural
4. Functional, genetic, ecological, and species