Outline

1. Ecology
   1. Definition
2. Ecosystem
   1. Definition
   2. Types of nutrition
      1. Autotrophs
      2. heterotrophs
   3. Components
      1. Organism
      2. Population
      3. Community
      4. Ecosystem
      5. Biosphere
   4. Habitat
   5. Niche
   6. Interactions
      1. Symbiosis
         1. Commensalism
         2. Mutualism
         3. predation
   7. Factors
      1. Biotic
      2. abiotic
3. Energy flow (biogeochemical cycles)
   1. Nutrient cycle
      1. Hydrologic cycle
      2. Carbon cycle
      3. Nitrogen cycle
         1. Nitrogen fixation
         2. Ammonification and nitrification
         3. Nitrogen loss
   2. Food chains and food webs
   3. Pyramids
      1. Energy
      2. Biomass
      3. numbers
   4. Trophic levels
      1. Types of consumers
         1. Primary
         2. Secondary
         3. Tertiary
4. Biological magnification
5. Population density and distribution
   1. Definitions
   2. Changes in size
   3. Graphs
      1. Exponential growth
         1. Limiting factors
      2. Logistic growth
         1. Carrying capacity
      3. Controls
         1. Density dependent
            1. Logistic growth

Limiting factors

Disease

Competition

Parasites

* + - 1. Density independent
         1. Limiting factors

Natural disasters

Climate changes

1. Human effects on ecosystem
   1. Management
      1. Nonrenewable resources
      2. Renewable resources