

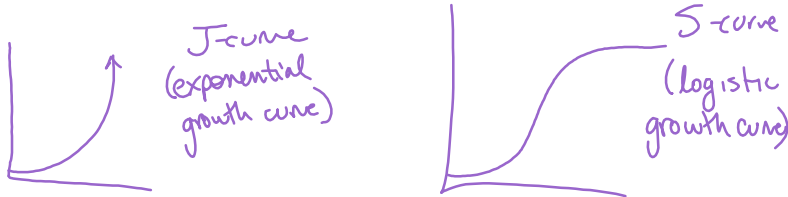
# Ecology Exam Review

Friday, June 15, 2018 12:10 PM

## Ecology

- Keywords
  - Know all the keywords from the entire note package
  - If you know the words...you should be able to explain things with the words!
- Energy Flow
  - Know how to read food chains and food webs
  - Know the trophic levels of organisms in a food web
  - Know how energy flows through a food web
  - Producer → primary consumer → secondary consumer → tertiary consumer → top carnivore
    - \*\*Producers are trophic level #1, they increase from there
    - 10% of energy is moved up to the next trophic level
    - Energy in ecosystems comes from the sun
- Biogeochemical Cycles
  - Know the connections between the carbon cycle and oxygen cycle
    - Opposites of each other
  - Know the importance of the carbon and nitrogen cycles in ecosystems
    - They cycle nutrients that are important for organism growth
  - Know how the carbon and nitrogen cycles can be affected by human activities or natural causes
    - Carbon:
      - Fossil fuels
      - Deforestation
      - Industry (combustion)
    - Nitrogen:
      - Agriculture/fertilizers
      - Sewage treatment
      - Cleaning products
- Bioaccumulation vs biomagnification
  - Know the difference between the two terms, and how they effect organisms in a food chain
  - **Bioaccumulation:** the build up of toxins/non-biodegradable substances in an ecosystem
    - How the toxins/non-biodegradable substances do no get cycled through an ecosystem
  - **Biomagnification:** the increase in concentrations of toxin/non-biodegradable substances as you go higher in a food chain
    - How the top carnivore will land up with the highest concentrations

- Population Dynamics
  - Know what increases populations
    - Births and immigration (organisms coming into area)
  - Know what decreases populations
    - Deaths and emigration (organisms leaving)
  - Know the difference between open and closed populations
    - Open means animals can come and go, while closed means animals cannot come and go (island)
  - Create, interpret, and identify carrying capacity on population growth curves



- Know the fluctuations of populations in a predator-prey relationship
  - More prey = more predators
  - More predators = less prey
  - Less prey = less predators
  - Less predators = more prey
- Limiting factors
  - Know the difference between density independent and density dependent limiting factors
    - DD: limiting factors that only affect populations once they are more dense (more animals per unit of area)
    - DI: limiting factors that will affect a population of animals no matter how large/dense it is
  - Identify and give examples of both density independent and density dependent limiting factors
    - DD: stress, competition, predation, disease
    - DI: natural events (weather, nat. disasters), human activities
- Biodiversity
  - Know why biodiversity is important to ecosystems
    - Biodiversity is the variety of different organisms in one ecosystem
      - This makes an ecosystem more sustainable because the food web becomes more complex. If one organism is removed, another can usually fill the role and cause less of an effect to the rest of the ecosystem
      - Think: removing an organism from a food chain vs food web
  - Describe the difference between vulnerable,

threatened, endangered, extirpated, and extinct species

- Vulnerable: populations on the low side of the normal fluctuations
- Threatened: population at risk of becoming extinct
- Endangered: there is a greater chance of the population becoming extinct
- Extirpated: the population is already extinct from a specific area
- Extinct: there is no more animals of that population
- Pollution and Sustainability
  - Describe different ways humans pollute the earth
  - Polluting the atmosphere, land, and water
  - Describe different way humans can create a more sustainable planet
  - Be able to describe how humans can make less of an impact in polluting atmosphere, land, and water
  - Know what an ecological footprint is, and how one could reduce theirs: WE DID NOT GO OVER ECOLOGICAL FOOT PRINT....DO NOT WORRY ABOUT THIS!