10/18

* Continuing chapter 15
  + Energy flows from producers to consumers
    - Energy flows
      * Losses at every “step” in a food chain
      * Inefficiency of energy transfers
        + Most available energy disappears
    - Biomass
      * 10% rule
        + That’s how much it takes to make a mass
        + The other 90% get lost as fuel to run
      * More efficient to be a vegetarian as a human?
        + Technically speaking, yes
        + Less loss of energy via plants
    - Essential chemicals cycle through ecosystems
      * Most important chemical cycles
        + C, N & P
      * Carbon cycle
        + Plants use the carbon in the air for photosynthesis
        + Primary, secondary and tertiary consumers eat the plants and each other and produce carbon
        + Everything that dies en mass and not exposed to oxygen eventually turn to coal, oil and natural gasses
        + Those get burned by humans, producing a majority of the atmospheric carbon
      * Nitrogen Cycle
        + Atmospheric nitrogen (N2) is “fixed” by soil-dwelling bacteria and electricity (lightning)
        + Fixed N converted to plain N
        + Taken in by plants and animals
        + Dead animals and plants, and waste decompose, recycling nitrogen back into the atmosphere.