Ecosystem ecology:

- Describe the nitrogen, carbon and phosphorus cycles (examples of them). What are three major pools where elements are accumulated (eg. living, non-living exchange pools and storage reservoirs). Know that decomposition rates have an important role in determining rates of nutrient cycling. Also, most biogeochemical cycles have a gaseous and a non-gaseous (eg. solid) component of the cycle. Describe how one of these cycles (and an alteration of it) might affect an ecosystem
- Nitrogen cycle: nitrogen fixation, ammonification, nitrification
- Atmospheric and soil components to each cycle
- Be able to describe the hubbard brooks experiment, and what it showed

What formula best describes actual population growth rate in a population? Add some numbers here:

\[ N = B = b = \]
\[ D (M) = d (m) = \]
\[ r = K = \]

What is the formula for the fraction of carrying capacity left (K)?

- Work some simple problems for \( \Delta N/\Delta T \) through, taking into account K, N, b and d (m)
- If K were not taken into account, \( \Delta N/\Delta T \) would be: know what \( r_{max} \) is
- Know that \( r \) is a rate (b-d). \( r \) is multiplied by \( N \) (population) to get to a number of individuals added to a population in a given time. \( rN \) is also multiplied by the formula for fraction of carrying capacity (know that) to get a realistic number taking into account how close to carrying capacity the population is.
- Know the graphs and curves for logistic and geometric (exponential) growth. What are the major differences between these types of population growth (focus mostly on logistic and geometric)
- What is the lag, log and saturation phases of the logistic curve
- Know age structure diagrams, and be able to look at one and predict a future trend in population growth
- Know survivorship curves (eg. For K and r selected species)
- Know what fertility means and what fecundity means
- Know the information on the powerpoint slides I posted (eg. Density dependent and density independent factors, factors affecting populations etc.) intrinsic vrs. extrinsic factors
- What is conservation biology?
- What is a population approach to conservation biology. A species approach? An ecosystem approach? Be able to give some examples
- What is habitat fragmentation?
- What implications (effects) can habitat fragmentation have?
- What is a metapopulation? Subpopulation?
- What is a migration corridor? Why are they important to the management of some organisms?
- What is the real meaning of life anyway? (Answer: Plants. Because they make it all happen)
- Why am I dong all this, staying up late and stressing out? Answer: you are on your way to achieving greatness, and you get to make up what that means to you!