**AP Biology Pre-Discussion Questions: Interactions 4- Population Dynamics**

# Questions to answer:

1. What factors contribute to the increase/decrease of a population?
2. Compare the exponential and logarithmic models of population growth. Why are they useful models for studying real world populations? What are some of their limitations?
3. How does the mark-recapture method of estimating the size of a population work?
4. Compare the three major ways that members of a population are distributed in the environment.
5. What is demographics? Why is it useful for population biologists?
6. Compare the three major survivorship curves that populations demonstrate.
7. Discuss how reproductive strategy affects the structure of a population. Provide examples related to number of offspring, amount of parental care, and r-selection vs. K-selection.
8. Discuss the effects of density-dependent factors on the structure of a population and provide examples.
9. List relevant observations about the growth of the human population from a historical, and modern perspective.

# Things you should make sure you understand:

**(feel free to ask questions about them in class)**

* How to use the exponential and logarithmic models of population growth.
* How to estimate population size using mark-recapture and quadrat sampling methods.
* Examples of organisms that demonstrate the modes of distribution, survivorship, and reproductive strategies discussed in this presentation.
* Examples of each of the density-dependent factors discussed in this presentation.
* How the historical growth of the human population has contributed to all anthropogenic ecological crises currently manifested in the functioning of the global ecological system.
* How the current dynamics of the human population may affect the continuing function of the global ecological, economic, and human-social systems.