Chapter 8 – Review Questions

Read Chapter 8 and answer the following questions on a separate sheet of paper.

<u>ANSWERS MUST BE HANDWRITTEN!</u> **Typed responses will not be accepted.**

1. Explain how the populations of southern sea otters and kelp interact and why the southern sea otter is considered a keystone species.

2. What is *population dynamics*? Why are the populations of most species found in clumps or groups?

3. What four factors affect population change? Write an equation showing how population

change is related to births, deaths, immigration, and emigration.

4. What is the *age structure* of a population? What can be said about a population made up mostly of people in the *reproductive ages*?

5. What is the *biotic potential* of a population? What are four characteristics of a population with a high *intrinsic rate of increase* (r)?

6. What are *environmental resistance* and *carrying capacity*? How do biotic potential and environmental resistance interact to determine carrying capacity?

7. Distinguish between *exponential* and *logistical growth* of a population, and give an example of each type.

8. How can a population overshoot its carrying capacity, and what are the consequences of doing this?

9. Distinguish between *density-dependent* and *density independent* factors that affect a population's size, and give an example of each.

10. Distinguish among *stable*, *irruptive*, *irregular*, and *cyclic* forms of population change.

11. Distinguish between *top-down control* and *bottom-up control* of a population's size. Use these concepts to describe the effects of the predator-prey interactions between the snowshoe hare and the Canadian lynx on the population of each species.

12. Distinguish between *asexual reproduction* and *sexual production*. What are the disadvantages and advantages of sexual reproduction?

13. List the characteristics of (a) *r-selected* or *opportunist species* and (b*) K-selected* of *competitor species*, and give two examples of each type. Under what environmental conditions are you most likely to find each type of species?

14. What is a *survivorship* curve and how is it used? List three general types of survivorship curves and given an example of a species with each type.