**Ecology Unit Review 2019**

Use your notes, PowerPoint presentations found on Mr. Tuss’ teacher page, worksheets, and your Biology textbook to answer the following questions to prepare for the Ecology Unit Exam.

Note that questions are broken down into chapter sections where more information can be found.

3.1

1. Describe the study of Ecology
2. Differentiate between **biotic** and **abiotic** factors in an ecosystem and provide several examples of each.

3.2

1. Compare/contrast autotrophs and heterotrophs. Give several examples of each.
2. Define Primary producers and explain how these organisms get their food.

3.3

1. Draw an energy pyramid and explain what happens to the amount of energy as you climb from the lowest trophic level to the highest. Where is most of the biomass in an ecological energy pyramid. Explain.
2. Create a food web using the following organisms:

Vulture, Mountain Lion, Deer, Rabbits, Grass, Shrubs

* 1. Label the producers
	2. Label the consumers and tell what kind they are: herbivore, carnivore, scavanger etc.
	3. Separate the organisms on your food web into different trophic levels and make an energy pyramid

3.4

1. Draw a diagram explaining the carbon cycle and how carbon cycles from an abiotic gas to into and through biotic systems and ultimately recycling itself.
2. What role do plants play in the water cycle? Explain.
3. Explain the two ways plants can get nitrogen from the environment.

4.2

1. Define ecological niche.
2. Describe the role competition (competitive exclusion principle) plays in shaping communities.
3. Define the three types of Symbiosis (Parasitism, Mutualism, and Commensalism) and provide examples of each.

**Chapter 5 Population Ecology**

1. Identify factors that determine carrying capacity. Explain.
2. Identify the limiting factors that depend on population density (density dependent). Explain each.
3. Identify the limiting factors that do not depend on population density (density independent). Explain each.
4. List the characteristics used to describe a population.
5. Identify the factors that affect population growth.
6. Describe exponential growth
7. Describe logistic growth

From 1985 to 1995 White-tailed deer populations on an island experienced the following growth patterns.

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1. What kind of growth did deer populations experience from 1985 to 1987 (Exponential or Logistic)?
2. From 1985 to 1995 what kind of growth pattern did the population experience (Exponential or Logistic)?
3. Describe three density dependent factors that might cause the deer population to decrease from one year to the next.
4. Describe three density independent factors that would result in a decrease in deer population.