AP Biology Summer Assignment 2023

This summer you will prepare an ecology topics based project that is due on the first day of class in September. It will be worth 1 test grade. Your grade will be based on *paraphrased and thorough explanations, clarity, appropriateness of pictures/diagrams, and your reference list.* Information that you get from your text or any other source must be paraphrased and not copied. Do not include direct quotations. Photos taken from the internet must be cited as well.

-Please submit a visually interesting yet factual **poster** that shows your labeled food web, a photo of an invasive species in your ecosystem, a photo of a keystone species in your ecosystem, and a photo of an environmental issue in that ecosystem. You can provide additional photos but these are the minimum that must be presented.

-Please provide a **small handout** that covers other aspects of the project where you describe and explain what is given in the following assignment.

Part A

Pick one ecosystem on earth- biome, national park, state forest, etc that you would like to visit or have visited where there is an abundance of wildlife. Research this location and document the following:

- **Construct a food web** that includes individual photos of these organisms. You should have at least 10 organisms (representing a variety of different classes of plants and animals as appropriate) with their interrelationships clearly identified. These will most likely include some combination of producers as well as primary, secondary, and tertiary consumers. After preparing your food web you should answer the following: -

1. Briefly **describe** the community to which members of your food web belong.
2. **Explain** how net productivity changes with each level in the food web. You may include a diagram if you wish.
3. Briefly **describe** the biome in which this community is found. Include both biotic and abiotic features.
4. Pick one plant from your food web and **describe** its ecological niche in 5 different ways.
5. Pick one animal from your food web and **describe** its ecological niche in 5 different ways.
6. **Define** a population. Using the organism you chose in #5, **define** and **describe** density-dependent and density-independent factors that can affect population size.
7. **Define** an invasive species. **Identify** one invasive species in the community you chose.

Describe how it interferes with the natural community structure.

8. **Define** a keystone species. **Identify** a keystone species in your community and **describe** its role.
9. **Describe** one environmental issue that affects your biome in some significant way. Describe the source of this problem, how it affects the structure or stability of the biome, and how the issue can be resolved or avoided.

Part B

Organisms need a variety of adaptations in order to survive and thrive in their environments. Adaptations may be structures, physiological processes, or behaviors.

Following are issues organisms must face:

-**Desiccation**
-Thermoregulation
-Protection from predators
-Nutrient procurement
-Reproduction

Go back to the organisms in your food web. Pick **one animal and one plant** and **describe** how each is adapted to solve each of the issues listed above.

General notes and information: Please include a **reference list with appropriate documentation.** This includes any source you used, whether it was a book or a website. Do not use Wikipedia as a source. If you have any questions please email me at: amorrissey@achs.net

While you can find information online for this project you can also access your text for information. If this course ID does not work please email me.

Text:

Urry, L (2018). *Campbell Biology AP Edition, 12th ed.* Boston: Pearson.

Pearson course ID: morrissey02161