Biology

**National Parks Ecology Project**

**Due: Tuesday, March 10th**

Throughout our ecology unit, we will be learning many different ecological principles—matter cycling in ecosystems, communities and their biomes, population dynamics, biodiversity, and conservation—Chapters 2, 3, 4, & 5.

Your mission will be to pick a National Park and apply the principles of ecology that we learn to that specific park. You will be creating a presentation that will be given to the class about that park. National Parks are considered by many to be the gems of this country—the preserved places that are kept for generations to come to explore.

There are National Parks in almost every state! Did you know there are 407 National Parks that help support over 400 endangered species? Each student will be choose a park that is in a separate state—this will make the presentations more interesting and we will learn more diverse information.

Structure of the presentation:

 **Your presentation must:**

* Be presented in either Powerpoint or Prezi (ask about other options)
* Have at least 8 slides of information (\*see specific details in bullets below\*)
* Each slide must have at least two pictures/graphics
* Text on the slide must be brief and abbreviated
* Include a brief history of the park as an introduction (when it was established, by who?, how big it is, what it features, where it is, a few maps, etc.)
* You will be presenting this to our class using the SMARTBoard on Monday, March 9th

The 8 + slides must contain the following ecological concepts, specific to your park:

**From Chapter 2**

* Examples of abiotic and biotic factors that exist in the park
* Have a graphic/slide that depicts the levels of organization (organism, population, community, biome, biosphere) that exists at your park.
* Ecosystem Interactions: Within the boundaries of your national park, explain the ideas of competition, predation, and symbiotic relationships among organisms. \*Going above and beyond—find examples of mutualism, commensalism, and parasitism within the park.
* Explain how energy is flowing between trophic levels. For example—which organisms are the primary producers (bottom of the pyramid) versus predators at the top? Include a graphic of a food chain or a food web in your presentation.
* Point out a few examples of producers, herbivores, carnivores, omnivores, and detrivores (decomposers).

**From Chapter 3**

* Explain what a few limiting factors might be in your park
* Let us know what biome your park is in—are we talking about Saltwater Marshes in Florida or the permafrost-filled tundra of Denali National Park in Alaska? Explain some characteristics of this biome.
* Aquatic Ecosystems: Does your park contain freshwater ecosystems, transitional aquatic ecosystems, or marine ecosystems? Include at least one in your presentation.

**From Chapter 4**

* Present about the population dynamics that exist at the park either in the past, present, or predicted to occur in the future.
* Give examples of organisms that have uniform distribution, clumped distribution, AND random distribution.
* Include population-independent factors and population-dependent factors that are present at the park.
* Explain and present one population of organisms in the park that must have a logistic population growth (“S curve” growth that fluctuates around carrying capacity).

**From Chapter 5**

* How have humans positively or negatively impacted the park?
* What are some recreational opportunities for humans—hiking? Ice fishing? Etc.
* What are some threats to biodiversity that are happening or have happened (habitat loss, fragmentation of habitat, pollution, introduction of non-native/invasive species) Give examples.
* How is the park being protected?

***How to get started:***

1. Go to [www.nps.gov](http://www.nps.gov)

2. “Find a park” tab. Browse by map/genre/region. Spend some time exploring the different national parks.

3. Pick one that you would like to officially have for your project. First come first serve basis with teacher.

4. Start your research! The Park’s website will be the best source of information. You will probably need to use other, trusted websites to help your research.

5. I recommend using this word document or a google document as a place to organize the research that you find. Answer each bullet point, or leave space under each bullet point for answers and examples/ideas.

**Parks I’m interested in**  **Final** **Park I’m Signed up for**

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