



Curriculum Units by Fellows of the National Initiative

2020 Volume V: Caretakers versus Exploiters: Impacting Biodiversity in the Age of Humans

Biodiversity in Pocahontas State Park: Being Caretakers with Wildlife Corridors

Guide for Curriculum Unit 20.05.03, published September 2020

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This unit focuses on Pocahontas State park in Richmond Virginia, and how it's changed over time. I will look at how humans have affected it by building around it since its origin in 1946 to the present. Pocahontas State Park also features three lakes; fishing and boating are also possible, depending on the season. Within the park, there are 64 miles of walkways. It is the largest state park in Virginia with nearly 8,000 acres. With our field trips to the park, students will be able to get a hands-on, real life engaging view on our unit topics.

My students will focus on the forest habitat and all the living and non-living organisms in it. We will explore food chains, populations and communities within this habitat. From this, we will identify animals threatened with extinction. Students will research causes of extinction in the park and what changes occurred that affected it (especially humans taking over more land, therefore disrupting the natural habitats of species). We will also explore the possibility of invading species entering the park due to effects of building in the surrounding areas, and how the invading species may displace species that were originally present. Students will list ideas of how humans can keep animals from being threatened from extinction and being displaced from their homes.

I will encourage students to make connections, identify cause and effect relationships, and also identify fact and opinion features; these are all language arts standards we practice in 3rd grade as well. The main activity of my unit is for students to design a wildlife corridor for a species of their choice. They may make 3D models or drawings on large posters. They will present their ideas to the class and possibly Pocahontas State Park rangers during one of our field trips.

My goal is for students to understand how we have to be “caretakers” of Earth’s habitats, and even as children they can make a difference.

Science Virginia Standard of Learning:

- Science 3.10 The student will investigate and understand that natural events and human influences can affect the survival of species. Key concepts include a) the interdependency of plants and animals; b) the effects of human activity on the quality of air, water, and habitat; c) the effects of fire, flood, disease, and erosion on organisms; and d) conservation and resource renewal.
- Science 3.6 The student will investigate and understand that ecosystems support a diversity of plants and animals that share limited resources. Key concepts include a) aquatic ecosystems; b) terrestrial

ecosystems; c) populations and communities; and d) the human role in conserving limited resources.

Next Generation Science Standards:

Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. [Clarification

3-LS4-3. Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]

Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.* [Clarification

3-LS4-4. Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.] [*Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.*]

(Developed for Science, grade 3; recommended for Science, grade 4)

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