

Biotic component paper assignment



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Biotic Component Paper In this paper I writer will conduct research on a natural ecosystem, such as preserves or parks within specific living area. This writer decided to research Angeles National Forest in Los Angeles California.

The paper will include the following elements, such as the major structural and functional dynamics (process) of the ecosystem including any changes overtime, how humans may have affected the biogeochemical cycles in the ecosystem, and if and how information about the Angeles National Forest structural and functional can help or has helped develop some type of plans for its management and restoration. University of Phoenix. (2006). Week Two individual assignments. Retrieved from University of Phoenix, SCI/256 Version 3 website.

The major structural and functional dynamics (processes) of that ecosystem including change over time An ecosystem is all the biotic and abiotic components of an environment. The Angeles National Forest is in Los Angeles. The forest was established in December 1892. The forest covers approximately 650, 000 acres and is in between the metropolitan area of Los Angeles. The Angeles National Forest has watersheds within the forest to provide water to southern California and most important to protect the surrounding communities from devastating floods.

The elevation of the Angeles National Forest ranges from 1, 200 to about 10, 000 feet. The Angeles National Forest is covered with dense chaparral

biome, which often changes between seasons, from pine and fir-covered slopes, which increase in elevation. The Angeles National Forest provides habitat. The Angeles National Forest has what they call sensitive species and they include 22 sensitive plants, sensitive wildlife ranging around 23 and 16 threaten and endangered species.

Some of the tree species of the Angeles National Forest include Bigcone Douglas-fir, is known for possessing the largest cones by far of any tree that grows pinecones. The Bigcone Douglas is approximately 50-100 feet – tall and the tree trunk diameter is two-three feet- tall. Coulter pine or Big-cone Pine is another tree species within the Angeles National Forest. Also known for its large spiny cones. The tree is named after Thomas Coulter an Irish botanist and physician. The pine tree ranges from 30-80 feet-tall.

The next common species within the Angeles National Forest is California Walnut, which is a large shrub that reaches approximately 30 feet-tall. The California Walnut tree is being threatened by development and overgrazing. The structural dynamics of Angeles National Forest provides habitat for more than 180 species classified as sensitive. The areas within the Angeles National Forest have at least four endemic plant species, such as, the Nelson bighorn, which can be found on the slopes of the mountains. The Angeles National Forest also home to the largest known population of the yellow-legged frog.

The plant life of the Angeles National Forest adapt to the biome of the environment. The plant species tend to be less than meter tall, and very shrubby in appearance. The plant species within the Angeles National Forest

have similar characteristics of desert plants because of their ability to adapt and survive extremely hot dry summer conditions. Most of the plant species are annual because they bloom after a winter rains and then surviving the hot summer season. The perennial forms plant species of the forest tend to have evergreen leaves, but are often small in size.

The plants species are cured with stomata, which is a pair of specialized epidermal cells called guard cells, which act as a turgor-driven valve that open and close the pores in response to given environmental conditions. Another common chemical found in many of the plant species of the Angeles National Forest contain chemical called turpentine designed to fend off any herbivores. Some of the plant species contain chemicals that burn fiercely called pyrogenic, but most of the plant species are fire resistant do to their underground roots or thick heavy bark.

The animals of the Angeles National Forest are small and nocturnal creatures. Many of the animals within the forest cannot withstand the extreme heat conditions of the Angeles National Forest, which is why they come out at night. The Angeles National Forest has seen its share of devastating fires. The recent fires were the station fires of 2009 burned more than 300, 000 acres from the beginning of July to November. This fire not only burned hundreds acres of land but also killed two fire fighters. What lead to the fires according to research is of drought, which caused the vegetation to die off and provide fuel for the fires.

It's quite normal for southern California to experience wildfires but not of this magnitude the station fires were later caused by arsonist. The fires

destroyed hundreds of acres of wildlife habitat and hundreds of animals, mainly the small and defenseless animals that could not out run the flames. Studies indicate that most of the bigger birds and other animals were large enough to escape the burning fires. One of the major concerns of the station fires within the Angeles National Forest was the spread of non- native plants and animals into rare species and general wildlife.

A strong concern because high levels of water flows were washing non- native aquatic species into downstream, which went beyond their original location. It often takes three to five years for vegetation to recovery effectively for massive fire damage. Floods, debris flows and sediment deposits may cause a temporary loss or reduction of suitable stream habitat for special status aquatic species. It is the smaller animals that suffer because of the high risk of extirpation do to fires. The bigger animals are more likely to recovery because of their widespread distribution.

How humans may have affected biogeochemical cycles in the Angeles National Forest Humans have somewhat affected biogeochemical cycles of the Angeles National Forest in the following ways construction, burning fossil fuels, fishing, deforestation, and irrigation. All of these examples are very common within the Angeles National Forest. Another concern is that the humans are hunting endangered species in the forest that lessen the balance or equilibrium. It is no surprise that ecosystems have been significantly changed do to human actions.

This ecosystem like other ecosystems depends upon continuingly flow of water, carbon, and other needed nutrients to survive. Human interactions

have modified these cycles increasing freshwater use, carbon emission use, and fertilizer use. This has resulted in has affected the ability of the ecosystems: to provide benefits to humans. Multiple animals and plants populations have declined in numbers because some rare species are lost and the common species are found at other locations. How knowledge about that ecosystem's structure and function can help or has helped to develop plans for its management and restoration.

Global issues such as climate change, the damage to the ozone layer and the extinction of wildlife species, are now well-known and are increasingly seen as threats to our survival. A number of these issues are a result of human activities. It is important that people develop a plan in a way that it does not over burden natural systems or natural resources. By achieving these goals, we as a society must bring together social, economic, and environmental concerns and address them with some seriousness and taking action. Just discussing is not going to solve the issues. The ecological restoration of the Angeles National Forest is very important.

Forests are complex ecosystems that also include “ soils and decaying organic matter, fungi and bacteria, herbs and shrubs, vines and lichens, ferns and mosses, insects and spiders, reptiles and amphibians, birds and mammals, and many other organisms” (Audesirk, 2003) 3. Management and restoration of Angeles National Forest is nothing new. Creating a sustainable development plan is the ultimate goal. Some three basic steps that Angeles National Forest thinks that will help preserve the forest and the steps include; (1) Environmental education is required to improve understanding among the public about the environment. 2) The knowledge that must be <https://assignbuster.com/biotic-component-paper-assignment/>

given to understand the basic ecological concept and current environmental issues will help in solving the environmental issues. (3) Making people aware and understand environmental protection and resource conservation will help and benefit the earth and the people. References (n. d). Angeles National Forest. Retrieved from [http://www. fs. fed. us/r5/angeles/](http://www.fs.fed.us/r5/angeles/) Ellis, E. (2008). Environmental_education. Ecosystem, (), 1. Retrieved from [http://www. eoearth. org/article/Ecosystem](http://www.eoearth.org/article/Ecosystem)