

Biotic components paper essay



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Biotic Components Paper Marisella Marengo University of Phoenix SCI/256

Susan Jensen June 28, 2010 Biotic Components Paper An ecosystem is simply the collection of biotic and abiotic components and processes that consist of and governs the behavior of some defined subset of the biosphere.

Therefore, a biotic component is something that is or has lived. Although sometimes considered only as transitions zones between aquatic and terrestrial environments wetlands actually are true ecosystems, holding very peculiar attributes.

Florida is surrounded by many different types of ecosystems which makes this particular State a very unique place to live. Rivers, springs, ponds, lakes and oceans create Florida's ecosystem.

The paper discusses the structural and functional dynamics of an ecosystem and how humans may have affected biogeochemical cycles. In addition, a brief summary will be provided on how knowledge can play an important part in the development of plans for its management and restoration of such ecosystem.

Major Structural and Functional Dynamics Springs are some of the most unique freshwater ecosystem on earth. Florida's springs provide natural, recreational, and economical benefits for both the human life and the many different species that occupy such beautiful nature.

In Florida, there are an estimated amount of 700 springs, which represents the largest concentration of freshwater springs on Earth. (My Florida, 2009) Florida springs are formed because of the porous limestone topography.

Springs are areas where water flows directly from the aquifer to the surface, supplying flow to a river or other water body. Springs are classified by their flow rates, with a first-magnitude spring producing the greatest amount of water, averaging a flow of at least 100 cubic feet per second (64.

6 million gallons daily). Florida boasts 33 first-magnitude springs. (Southwest Florida Water Management District, 2005) Three different aquifer systems can be found in the parts of Florida where springs are common.

They are the shallow Surficial Aquifer, the Intermediate Aquifer, and the limestone Floridian Aquifer. In some areas, all three aquifers may exist in sequence separated by impermeable layers.

In other places, only the Floridian Aquifer may be present, and it may be exposed to the surface by sinkholes and other karst features. (Florida Springs. Com, 2006) This particular ecosystem also has many different species that depend on its sources. Springs, streams, lakes and ponds are home to many types of fish, reptiles, amphibians, birds, mammals, insects, invertebrates, and plants.

Clean, clear water flowing from the aquifer at a constant temperature are the essential ingredients that support the variety of life found in and around a spring.

(Florida Department of Environmental Protection, 2007) How Humans Affected Biogeochemical Cycles in the Ecosystem Biogeochemical cycles are nutrient circuits involving both biotic and abiotic components of ecosystems. Elements such as carbon, oxygen, sulphur, and nitrogen have gaseous

forms, thus, their cycles are global in character and the atmosphere serves as a reservoir.

Humans have altered the nitrogen and phosphorus cycles by adding these elements to croplands as fertilizers, which has contributed to over-fertilization of aquatic ecosystems when excess amounts are carried by runoff into local waterways. The biogeochemical cycles of Florida's springs are affected more and more everyday by the growth of human population, human activities, and our technological capabilities has disrupted the trophic structure, energy flow, and chemical cycling of ecosystems in most areas of the world.

Some effects are local, some regional, and a few are global. Threats to the quality and quantity of water in Florida's aquifer and springs are being impacted due to springs being opened to the public.

Springs recreation are a multi-million dollar industry in north Florida. Due to the immense population that these ecosystem experience by providing camping grounds, swimming areas, tubing, diving, and canoeing, for humans, they have increased harm to health of the aquatic ecosystem.

Tubers and swimmers unknowingly tread on native vegetation, and increase cloudiness of water. Trash thrown by humans in the springs and around the environment introduces pollutants into the water and harm native wildlife such as turtles and manatees which might mistake plastic bags and wrappers for food. (Florida Department of Environmental Protection, 2007)
Knowledge about the Aquatic Ecosystem Helps Helping people understand

the connection that we as humans have with the world empowers us to protect and sustain an ecosystem.

Every place is an ecosystem.

People affect an aquatic ecosystem services by altering the structure and function of the ecosystem. Goods and services generated by aquatic ecosystems have sustained human society since earliest history. By providing knowledge it ensures safe drinking water; healthy aquatic ecosystem; and reliable, quality water supplies for sustainable economy. In addition, understanding management actions can enhance the conservation and sustainable use of natural resources within an aquatic ecosystem as well as overall ecosystem health.

Florida Department of Environmental Protection, 2007) Conclusion

Ecosystems are a major part of humans' existence. Without these ecosystems humans would not be able to survive. Ecological system is sustaining everything in this world including human beings, animals and plants. Human beings, however, are trying to destroy the ecological balance. Many of the human activities that modify or destroy natural ecosystems may cause deterioration of ecological services whose value, in the long term, dwarfs the short-term economic benefits society gains from those activities.

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