

Bellie  
FRQ

Living organisms are vital in the cycling of elements in an ecosystem. Plants help to assimilate nitrogen, that is released in the atmosphere through human actions such as fertilization and industrialization, in the form of ammonia and nitrate. Certain bacteria are also able to fix nitrogen and others are able to perform denitrification, the reduction of nitrate to nitrogen. Certain bacteria, as well as all plants, also help recycle carbon dioxide by taking it in during the process of photosynthesis to create oxygen. Detritivores also help release carbon and nitrogen into the atmosphere when they breaking down nonliving organic material and returning the chemicals to the ecosystem. Living organisms play an important role in the recycling of many elements within an ecosystem. Discuss how various types of organisms and their biochemical reactions contribute to the recycling of either carbon or nitrogen in an ecosystem. Include in your answer one way in which human activity has an impact on the nutrient cycle you have chosen.

Population density is naturally regulated in a number of ways. Competition for resources increases along with density. This results in greater competition as well as reduction in birth rates. Territoriality has these same effects. The accumulation of toxic wastes can act as a regulator as well as intrinsic factors, such as the urge to eat offspring. Predation can also regulate population density. If a predator captures more food a population becomes more dense, it could result in a increase death rate of prey. Also, if prey becomes more densely populated, it will be more easily targeted by a predator. Finally, disease, particularly those that spread easily are another density dependent regulator, one that affects humans.

The extreme temperatures of deserts, their harsh soil and little precipitation, prevent the growth of most plants, that act as primary producers and are the initial source of energy in a food chain, resulting in the low productivity of most deserts. The plants that are able to survive are often low to the ground and offer shelter and food for bugs and small reptiles. The plant acts as the primary producer, the bug would act as a primary consumer, the small reptile, a lizard, would act as a secondary consumer. Then! A giant hawk would swoop down, eat the lizard, and fill the role of a tertiary consumer.