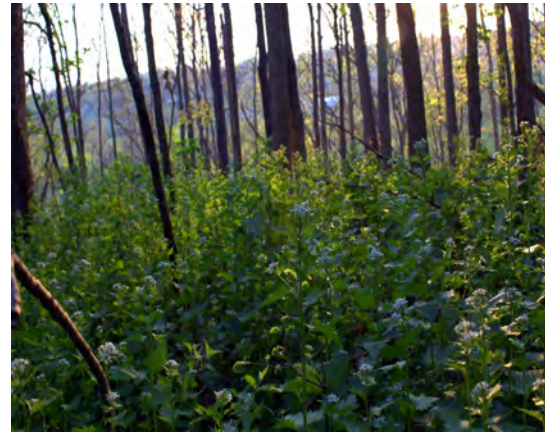


Reflect

Look at the image of a Tennessee woods ecosystem to the right. What makes up an ecosystem? Is it just the living things or do the nonliving things count as well?

An **ecosystem** consists of all the living and nonliving things in a particular area. Let's look back at the picture of the woods. You can see lots of biotic (living) things, but you can also see abiotic (nonliving) things. Some biotic organisms could be the trees, ferns, and vines while some abiotic examples could be the soil and stones. What other organisms would you expect to find in this ecosystem that you cannot see in this picture?



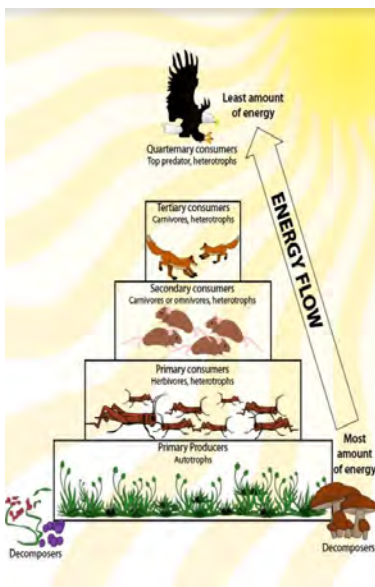
ecosystem- the living and nonliving things in an area

Do ecosystems always stay the same?

Since ecosystems consist of living things that can change, it makes sense that the ecosystem itself can change and vary over time. For example, if a certain population has a significant change, that change will be felt throughout the entire ecosystem.

One event that can cause change in an ecosystem is the introduction of a non-native or **invasive species** into the ecosystem. Species that are not normally found in an ecosystem typically do not have predators within the ecosystem. This allows the non-native species to invade and take over the habitat of competing native species.

population- individual groups of living things



Look at the deciduous forest ecosystem depicted in an energy pyramid to your left. What do you think would happen to the ecosystem if an invasive species of plant was introduced into the ecosystem and the native plants started to die? Would the herbivore and heterotroph **population** increase or decrease? What about the bald eagles? Would that population increase or decrease? Without the abundance of native plants feeding the herbivores, the beaver population would decrease. Alternatively, without the foxes as prey, the eagle population would begin to decline.

invasive species- A species that enters an area from somewhere else and disrupts or causes harm to the native ecosystem

Invasive Species

There are several ways invasive species can be introduced into an ecosystem. In most instances human activities supply the pathway for invasion. Pets that escape or are released into the wild can survive in the new environment. Pet pythons and boa constrictors that became too large for their owners to handle have been released into the Florida Everglades. The snakes have flourished at the expense of the native species. Aquatic organisms can hitch a ride in the ballast water of ships to move from one body of water to another. Wooden shipping crates and pallets can serve as first-class passage for insects. Beautiful ornamental plants placed in lawns and gardens can spread to natural areas. Sometimes the species is placed in the ecosystem by humans in an effort to solve a problem or control another organism.

Look Out!

Disruptions to any physical component of an ecosystem can lead to population shifts as well. What do you think happened to the ecosystem in the pictures below? How do you think these changes impacted the populations in each ecosystem?



What Do You Think?

Once an ecosystem is disturbed, do you think it can ever recover and return to its original balance? Absolutely, because ecosystems are amazingly resilient. Consider the pictures above. After the kudzu and weeds grow to cover the native plants and block the sunlight, many organisms will begin to die. But with time and control of the overgrowth, the plants and animals will begin to come back to the ecosystem.

Try Now

Below you will find a food web for a deciduous forest food chain. Dingo pups have become a popular pet in the surrounding towns. Unfortunately, when the pups grow up and become unruly adults, pet owners tend to release the dingos into the forest. Dingos are known for eating small rodents. Draw an "X" through the mouse and then in the space below describe all the changes that would occur to the ecosystem as a result of the introduction of an invasive species.

Temperate Deciduous Forest Food Chain

