

WHAT IS AGROFORESTRY?

This monograph is the second in the Forests & Agriculture Series and focuses on agroforestry. You may be wondering what the word agroforestry means. “Agro” comes from the Greek word “agros,” which means field. Forestry refers to the science or practice of planting, managing, and caring for forests.

Agroforestry is the practice of mixing trees, shrubs, crops, or animal production systems together. The purpose of mixing trees and shrubs with crops or animal production is to create environmental, economic, and social benefits. Five practices are used in agroforestry. The five practices are: windbreaks, **riparian** forest buffers, **silvopasture** systems, alley cropping, and forest farming.

Windbreaks are plantings of single or multiple rows of trees, shrubs, or grass that protect crops, livestock, people, and wildlife from wind (figure 4). Some of the benefits of windbreaks include creating healthier crops and livestock, storing carbon, and creating a better aesthetic. Storing carbon by planting trees or managing overgrown forests is important because it helps rebalance the global carbon cycle (figure 5). Too much carbon in the atmosphere can contribute to climate change.

Riparian forest buffers are trees, shrubs, grass, and other plants growing close to rivers, streams, lakes, and other bodies of water (figure 6).



Figure 4. A windbreak protects these vegetables, enabling them to grow more successfully.

Photo courtesy of USDA Natural Resources Conservation Service.

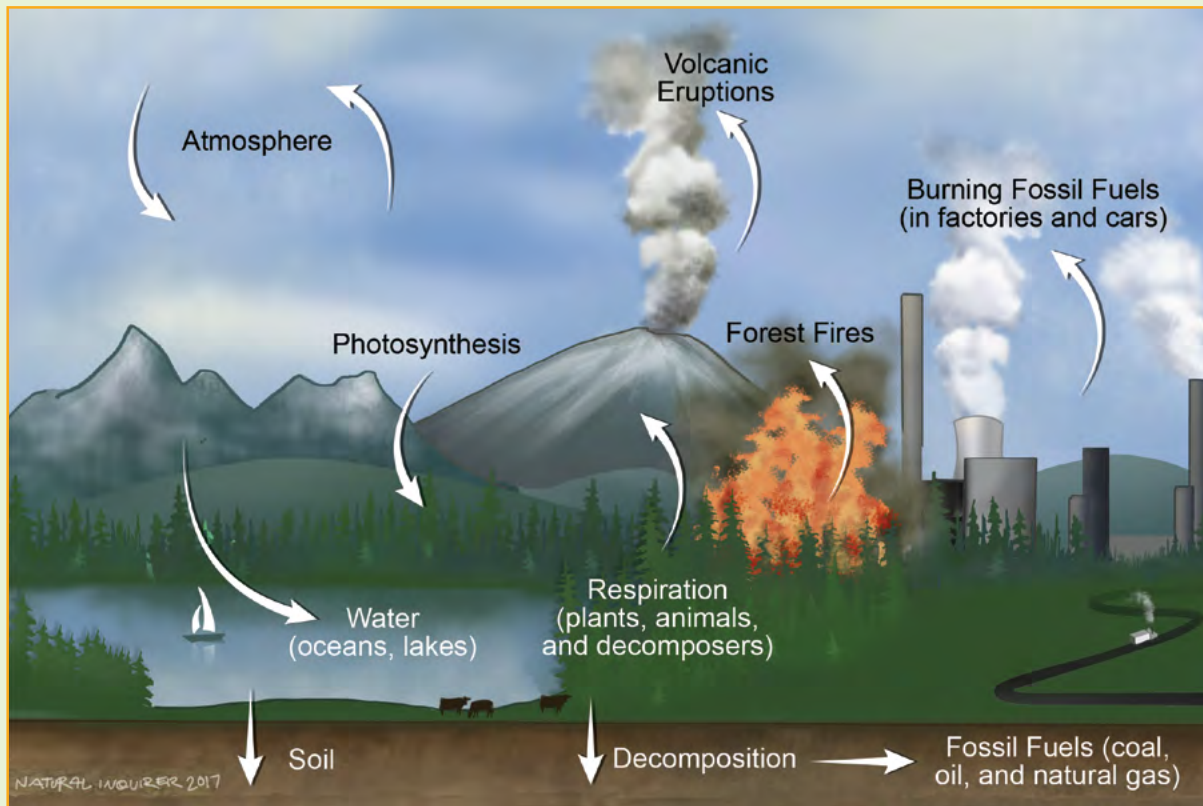


Figure 5. Carbon moves through Earth and its atmosphere in a cycle.

Illustration by Stephanie Pfeiffer.

These buffers protect water from potential harmful byproducts that may be caught in aboveground and belowground surface runoff. Other benefits of riparian forest buffers include stream bank stability, reduced flood damage, increased wildlife habitat, and improved aesthetic appeal.



Figure 6. Riparian forest buffers are maintained near bodies of water to protect water quality. They also provide food and habitat for plants and animals.

Photo courtesy of USDA Natural Resources Conservation Service.

Silvopasture is a practice where trees, livestock, and feeding areas for animals are managed as one system (figure 7). The trees provide shade and improved habitat for the livestock as they grow. The plant and habitat diversity in silvopasture systems attracts many wildlife species such as wild turkey, quail, deer, and songbirds. Silvopasture systems have other benefits, including increased biological diversity, water quality protection, and reduced soil erosion.



Figure 7. Livestock, such as cows, enjoy the shade provided by trees in a silvopasture system.

Photo courtesy of USDA Natural Resources Conservation Service.

Alley cropping is when agricultural crops like corn are grown in widely spaced rows of woody plants like trees and shrubs (figure 8). Alley cropping has several benefits, including improved soil and crop health and providing another type of income-producing plants. For example, if fruit-bearing trees are planted, then the farmer has both the agriculture crop and fruit from the trees to sell, rather than just the crops alone.

Forest farming is managing the forested land so that there can be small-scale gardening or farming as well. A variety of fruit, herbs, nuts, and other items can be grown and harvested (figure 9). Sometimes people use this method as an extra source of income. However, many people engage in forest farming because they enjoy growing or collecting nontimber forest products, like mushrooms or herbs, as a recreational



Figure 8. Alley cropping helps improve soil and crop health.

Photo courtesy of National Agroforestry Lab Center by Shibu Jose.

activity or as part of a family or cultural tradition. For more information on forest farming, see “What is a Food Forest?” on page 14.

These agroforestry practices provide many benefits to plants, animals, and the surrounding environment. In this monograph, we highlight one particular case of agroforestry involving black cohosh and forest farming. Learn more about agroforestry at the USDA National Agroforestry Center <https://www.fs.usda.gov/nac/> or <https://www.usda.gov/topics/forestry/agroforestry>.



Figure 9. Some people like to grow and harvest forest medicinal herbs such as black cohosh, pictured here in the center of the photo.

Photo by Jessica Nickelsen, FIND Outdoors.