

Natural Community

Oak-Hickory Forest



A forest is an area with a high density of trees, but birds, mammals, insects, reptiles, amphibians, other plants, fungi and microbes all interact to create the forest community. Surprisingly, trees make up less than 5% of a forest's species. A typical forest will have six dominant tree species, 10 to 20 understory species and about 100 herbaceous (non-woody) plants.

A forest has four levels: the canopy, the understory, the ground layer and the forest floor. The dominant trees, which are 50 to 100 feet tall, form the canopy. Small trees and shrubs, like dogwood, that tolerate shade live in the understory. Younger specimens of the dominant trees, which may someday reach the canopy, also grow in the understory. The ground layer supports small shrubs (blueberries for example), ferns, wildflowers and tree seedlings. The forest floor is made up of mosses, lichens, dead leaves, rocks and humus.

The wooded areas in Kansas City, like most of the forests in Missouri, are defined as 'upland forests'; these communities occur on hilly, rolling terrain and are dominated by oaks and hickories. Red Oak, White Oak and Shagbark Hickory are common in the Swope Park forest.

Shagbark Hickory (*Carya ovata*), the most common hickory found in northern Missouri, gets its name from its characteristic light gray bark that separates into thin plates that curl away from the tree at both ends. (The tree on the left in the picture above is a shagbark hickory). Early settlers

used hickory for the hubs, rims and spokes of wagon wheels and the wood is used today for tool handles. Hickory nuts are delicious; squirrels, wild turkeys and deer prefer them to acorns.

Like all communities, forests are always changing. The annual cycle from winter dormancy through green-up to leaf fall is the most obvious change. Climate change causes forest change; 18,000 years ago, Missouri was much colder and its forests resembled the spruce-fir forests of northern Canada. Man also causes forest change; in 1800, forests covered 2/3 of Missouri; by 1900, nearly all the forests were cut. Half the forests in Missouri are less than 50 years old; most are fragmented into smaller tracts than they were 200 years ago.

Plants power the forest community by converting sunlight into energy. In addition, they clean air by filtering out pollutants and producing oxygen via photosynthesis. Plant roots stabilize soil and prevent erosion by allowing water to seep slowly into the ground. Their fruits and nuts (called mast) provide food for birds and mammals.

Bacteria, insects and other arthropods are the forest recyclers. They break down dead wood and leaf litter, build soil and become food for larger animals. Up to 16,000 microscopic arthropods can live in one square yard of the forest floor. Large invertebrates like millipedes also consume decaying plants.



Nearly 300 different species of birds, mammals, reptiles and amphibians rely on the oak-hickory forest for their food or shelter. In return, they



pollinate plants, disperse seeds and recycle nutrients. Gray squirrels, chipmunks, deer, skunks, little brown bats, bobcats, mice and raccoons all live in oak-hickory forests. Forest birds include barred owls, pileated woodpeckers, wood thrushes and screech owls. Three-toed box turtles, black rat snakes, salamanders and American toads are some of the reptiles and

amphibians found in the forest.