

# FOREST FACTS

Inspire students to learn about how forests can help us address sustainability challenges with these Forest Facts from PLT's *Explore Your Environment: K-8 Activity Guide*. Visit [plt.org/myk8guide](http://plt.org/myk8guide) for ideas on how to use these facts with your students and ground the learning in the real world.



A row of young trees may sprout from seed atop a rotting log on the forest floor known as a nurse log.



Attention Deficit Disorder (ADD) symptoms in children can be greatly reduced when children are exposed to forests and other places with high tree densities.



An important aspect of sustainable forestry is ensuring that there is appropriate habitat for a variety of animal species. Prairie warblers, for example, require a very young forest to survive, while red-cockaded woodpeckers require older and larger trees for nesting. Harvesting and replanting trees can create a diversity of conditions over time, enabling a richer mix of species to thrive across the landscape.



In preparation for winter, trees in temperate climates, such as the box elder (*Acer negundo*), form resting buds that are resistant to frost.



Knowing the history of a forest is essential to all forest managers, land-use planners, and urban foresters. These professionals need to know how the forest has grown over time and how land-use patterns have evolved, in order to make the best decisions for the future.



Prescribed burning, or planned fire, is an active forest management method that clears out fuel sources that would otherwise promote destructive wildfires, making the forest healthier. The heat of prescribed burns also promotes the regrowth and reproduction of some tree species.

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Papermaking begins with trees. About one-third of the paper used in the United States is made from trees that are thinned (harvested from a forest) to give other trees room to grow or from trees that were grown especially for papermaking. About one-third is made from the wood chips and sawdust created from milling lumber from logs. And one-third is made from recycled paper.



The tallest trees in the world are coast redwoods, which grow in natural forest stands along the Pacific coast of northern California and southern Oregon.



Forests are home to 80% of all land-based plant and animal species!



According to the U.S. Forest Service, forests and forest products in the United States offset nearly 16% of the country's carbon dioxide emissions by storing over 850 million metric tons of carbon per year.



In the United States, roughly two thirds of at-risk and endangered species rely on private forestlands. Foresters employ sustainable practices to maintain or increase forest biodiversity by reforesting areas, restoring threatened species and habitats, and controlling invasive species.

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Forests have the world's largest reservoir of plant and animal species and are home to 80% of the world's terrestrial biodiversity.



Trees and forests absorb rainfall, filtering water to refill aquifers. The U.S. Forest Service estimates that 80% of the nation's freshwater originates from forestland.



Did you know that the closer trees get to the equator, the faster they grow? In fact, growth rings in tropical areas are often associated with wet and dry seasons, instead of with the four annual seasons that we recognize. This means that some tropical trees show multiple growth rings in one year!



Being outdoors brings you many health benefits, and so does bringing the outdoors in! Wood is a natural material used in biophilic design, which has been shown to reduce stress in humans. Exposure to wood indoors—whether in products, furniture, or design—offers many of the same benefits as being outdoors.



Jobs in sustainable forestry help to maintain or restore ecosystems and ensure that forest products are sustainably produced. Worldwide, more than 54.2 million people work in jobs connected to forests.



Cellulose nanofiber, a sustainable alternative to plastic packaging, is made from wood chips. It can extend the shelf-life and quality of food, medicine, and cosmetics.

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Edward Thomas wrote the poem “Aspens” in July 1915 and sent it to his friend and mentor, the American poet Robert Frost. While the poem describes the way aspen trees sway day and night, whatever the weather, the trees’ continuous movement also represents a metaphor for human endeavors: like the aspens, we persevere.



Fallen leaves are an essential part of a forest’s ecosystem. The “leaf litter” shields the soil from hard rains, holding in moisture and preventing erosion. It also protects tree seeds that will germinate next spring, and nutrients that leach from the dead leaves nourish the seedlings.



80% of the total carbon stored in Canada’s boreal forest is in the soil. Microorganisms in the soil are essential for decomposing dead matter and storing carbon in soil humus.



You can see the growth rings of a tree without cutting it down! Foresters use a tool called an increment borer to see tree growth history and make management decisions. This tool drills a small hole into a tree and extracts a sample of the tree rings to analyze. The tree can heal this small hole, just as humans heal from small injuries.



Trees help support many other living organisms, including lichens, which appear most often on the tree trunk. Lichens function as bioindicators, as their presence often indicates good air quality.



Bark beetles are tiny insects that eat the living tissue just under a live tree’s bark. Sometimes they can hasten the death of a tree, and evidence of them may be easy to find on some dead logs. The tunnels that they make create intricate patterns in the wood underneath the bark.

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Forests of the Blue Ridge Mountains, part of the Appalachian Mountain region, span seven states in the mid-Atlantic and contain more than 158 tree species. This region features some of the greatest floral diversity of any North American forest. Two of the dominant forest types are deciduous upland oak and coniferous spruce-fir, found at higher elevations.



In well-managed forests, harvested areas are reforested or planted with seedlings to keep the forest healthy. Forest certification is a process in which a professional certifier confirms that the forest is being managed sustainably. Products that come from these forests are labeled to indicate that they are certified, so consumers can find them easily.



Clusters of mushrooms at the base of a tree can indicate infection, decay, and root rot.



Urban forests and neighborhood trees help to prevent runoff and erosion, thus maintaining water quality. For example, 1 inch of rainfall on a 10,000-square-foot area with no trees will generate 639 cubic feet of runoff, but if 30% of the area is covered by tree canopy, it will generate just 3.9 cubic feet of runoff.



Forests are home to 80% of the world's terrestrial biodiversity, so it's important to conserve them and practice sustainable forestry. A healthy forest ecosystem includes a variety of plants and animals. One way to assess this diversity is to determine whether there is a mix of plant species of different sizes, ages, and functions, thus creating diverse conditions that provide habitat for many species.

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Urban Forest Master Plans are developed by city governments and nonprofit organizations to establish long-term management goals and strategies that improve the health and longevity of urban forests.



Forests provide a source of renewable energy from woody biomass, which consists of forest residues (such as fallen limbs and leaves) and sawdust and wood scraps from sawmills. Using forest residues as fuel supports sustainable forest management by reducing the risk of insect infestations, disease, or fire and by enhancing wildlife habitat.



The leaf shape of any tree species can vary with elevation and temperature. At cooler temperatures and higher elevation, red maple leaves tend to have more teeth and dissected lobes, which allow for more photosynthesis to occur along the leaf margins.



While many major U.S. cities are planning for a future tree canopy cover of 30-40%, most hold averages between 27-33%. By some estimates, Tampa, Florida and New York City exhibit the most tree canopy cover.



A product life cycle that involves a continuous loop is part of a circular economy, which aims to reuse, repair, and recycle products at the end of their life—as opposed to disposing of them.



Partnerships between landowners and local organizations can render positive outcomes for local communities, including recreational opportunities and sustainable multiple-use forest management.

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Closely spaced small trees and branches in the understory can act as ladders that allow fire to spread more easily into the upper canopy. The resulting “crown” fire can become extreme in certain forest types and weather conditions.



Forest inventories play a key role in sustainable forest management, as they provide information for site management, forest thinning, timber harvests, and site quality assessment.



Foresters use various techniques to minimize weather-related damage to their forests. For example, they may clear dead trees and debris to help reduce the spread of wildfire, or plant “windfirm” (deep-rooting) species in windy areas so they won't topple.



The “Right Tree Right Place” (RTRP) concept was developed by Dr. Richard Harris in 1982 to ensure the appropriate selection and planting of trees.



U.S. and Canadian forests capture more carbon than they release. In one year, for example, carbon storage in U.S. forests can offset approximately 9% of the nation's greenhouse gas emissions.



Forests are certified on public lands, private lands, Indigenous and Tribal Lands, university lands, conservation lands, and community lands.