

# FACT SHEET

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## Timber & Timber Harvesting in West Virginia

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### Logging Diversifies Fall Color

The hardwood forest of the eastern United States is said to be the best place in the world to see colorful autumn leaves. West Virginia is among the best of the best due to the many different kinds of trees that grow here.

Fall leaf color is initiated when the gradually shortening day length triggers the formation of a hormone in the leaves. This chemical migrates to the base of the leaf stalk (petiole) where it causes the cells to thicken into an abscission layer. As this layer grows inwardly towards the center of the leaf stalk, it slowly cuts off the water supply and strangles the leaf. Since chlorophyll, the green coloring matter in the leaf, has to have constant water, it slowly disappears as the leaf is choked. This allows other pigments, most of which have been present, but which have been masked by the green, to show through. The yellow and browns are from chemicals called carotenoids and xanthophylls. The reds are from anthocyanin, a chemical that forms from the sugars that are unable to move out of the leaf after the abscission layer forms. Frost, although important, does not play a big role in autumnal coloration.

Leaf color peaks sometime in October, beginning first on the higher mountains and in the northern counties. The annual pageant is said to draw hundreds of tourists who drive the highways for visual impact and to take color photographs. Only a relative few know the origin of the color and how timber harvesting or logging plays a great behind the scenes role in their annual pilgrimage.

If a hardwood forest is left to its own devices, the individual trees grow, reproduce and ultimately uproot. The opening created in the forest canopy may be partially filled by adjacent trees growing limbs into it but it is primarily filled by seedlings which begin to grow up from the ground. The opening may not, however, be filled by a tree of the same species. There can be several reasons for this, but in most instances it's because of shade tolerance. Some species tolerate shade more than others. A sugar maple, for example, may live for decades in shaded conditions. Yet, when the overlying shade is removed it resumes its height growth. A black cherry is just the opposite. When it's over-topped by its neighbors, it dies. Consequently, an aging hardwood forest contains more and more shade tolerant species such as maple and American beech and less and less shade intolerant such as cherry, yellow poplar and red oak.

Professionally guided timber harvesting is part of a management program that strives for sustainability. In doing so, it removes mature, damaged and unsound trees in a way that allows a diversity of species to be reestablished for the future. This also provides for a healthy, diverse residual stand that will produce the maximum number of healthy leaves. At this point, Mother Nature takes over for the forester with autumnal fireworks the end result.

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