chippewa naturecenter

inSTALLations

April 2011

Plant Parade
Watch out for leaf out!

Leaves of deciduous trees and shrubs spend the winter inside protective coverings called buds. In spring, the bud scales fall away revealing the tiny leaves inside. This annual event can be easily overlooked, but is a fascinating process in which many factors come together. Leaf out is defined differently by different scientists; some say it is when 50% of the leaves have emerged from the buds and others say leaf out occurs when the immature leaves reach the size of a quarter.

Regardless of the exact moment leaf out occurs, it is a critical step in the life of a tree or shrub. For sub-canopy individuals (those living beneath the forest canopy) the timing of leaf out can have a significant effect on the plant's growth and development. They put their leaves out a bit before the canopy trees do, and in this brief amount of time are able to secure a critical supply of energy for their growth. In one Illinois study, young sugar maples that were able to gather sun during this critical time had a 73% survival rate after three years, while only 20% of those that were covered with shade cloth during leaf out survived. Many invasive species such as buckthorn and honeysuckle have early leaf out and hang on to their leaves later in the season allowing them to grow more vigorously than their native competitors.

Different species have different triggers for leaf out, and these are determined by genetics. Some of the factors that can influence the timing of leaf out include soil and air temperatures, winter chilling, cloudy weather, conditions during the previous autumn, and soil moisture. Studying phenology, or the relationship between biological events and climactic conditions, can give us important clues about our environment. Because of the relationship between leaf out and climactic conditions, many scientists have begun documenting the date of leaf out as an indicator of climate change.

Nature Notes

When young leaves emerge from buds, they have lobes, dentations, and other recognizable characteristics. In ohter words, they are miniature versions of mature leaves.

Many immature leaves are quite colorful. They may be red or purple along the edges or throughout the entire leaf. It usually only takes a few days for enough chlorophyll to be produced to make the leaves green.

If you'd like to help track leaf out or other seasonal events this spring, check out the Journey North website at www.learner.org/jnorth. There you can enter data and track patterns of leaf out, tulip bloom, monarch butterflies, American Robins, hummingbirds and more!

Visit the Visitor Center Office for program information.

This inSTALLation is available online at www.chippewanaturecenter.org under the Naturalist Section.