

**October 5, 2004**

### **Why the fall colours?**

Early October brings us the best colour the fall leaves can deliver. Red and Sugar Maples, which provide the most dramatic display, usually reach their colour peak by the first week of October in the northern Kawarthas and at Thanksgiving further south. What a wonderful coincidence that this special holiday falls precisely when the leaves are adorned in their autumn best.

A basic understanding of how and why leaves change colour adds a great deal to our enjoyment of this annual spectacle. Colour change and the shedding of leaves are manifestations of a plant's preparation for winter. It is a coordinated undertaking on the part of the entire organism. Since winter is a time of drought in which water is locked up in the form of ice, trees are no longer able to take up water through their roots. Because leaves are continually releasing water vapour (think of the high humidity of a greenhouse), trees must therefore get rid of their leaves in order to minimize water loss and desiccation.

However, leaves are full of important but scarce minerals, and it is to the tree's advantage to salvage these nutrients first. The minerals are used to produce chlorophyll, the green pigment that captures the sun's energy and uses it in combination with water and carbon dioxide to produce the sugar-based substances that make up the tree's tissues. As the amount of daylight decreases at this time of year, trees stop producing chlorophyll and actually begin to remove the minerals from the leaves and store them in the woody tissues until next spring.

As the green chlorophyll disappears, colour change becomes apparent. Without chlorophyll there to mask them, other pigments in the leaves - which have been there all along - gradually become visible. A common example of this phenomenon is how the grass on your lawn yellows within a few days of being covered with a board or tent. The yellows and oranges come from carotene pigments, while anthocyanins give us the beautiful reds. The red pigments are created from excess sugars and seem to be brightest when there is lots of fall sunshine accompanied by cool nights.

The actual shedding of the leaves is achieved by the formation of a corky layer of cells at the base of each leaf stalk. Eventually, the leaf's connection with the twig is broken and it falls off in the wind, rain or simply from the warming effect of the morning sun. You have probably noticed how squirrel nests, made up largely of leaf-bearing twigs nipped off the tree during spring and summer, will hold the leaves for years at a time. This is because the cork layer never had the time to form.

In addition to the intense reds of the Red Maple and the blazing yellows and oranges of Sugar Maples, some of the finest colour is provided by the White Ash. Its colour palette ranges from bronze-yellows to wine-purples. More so than any species I know, the leaves positively scintillate in the dreamy fall sunshine. As we move into the second half of October, the reds and burgundies of White and Red Oaks will join the colour parade, accompanied by the bright yellows of aspens and, at month's end, the smoky gold of Tamaracks.

Be sure not to miss the colour changes happening in the vines and shrubs as well. Virginia Creeper, which loves to spiral over fences, glows with some of the deepest reds. Dogwoods and blackberries provide a stunning display of burgundies and purples. Staghorn Sumac covers nearly all of the colour bases from yellows and oranges to luminous scarlets.

Although there is spectacular colour to be seen just about everywhere, the Glen Alda area around Chandos Lake is often especially good. Another beautiful colour drive is Highway 35 to Dorset where you can climb the fire tower and enjoy a wonderful view of the surrounding maple forests. To get twice-weekly updates on the progress of the fall colours throughout Ontario, visit [www.ontariotravel.net](http://www.ontariotravel.net), click weather and follow the link to the Fall Colour Report.

#### **WHAT TO WATCH FOR THIS WEEK**

Turkey Vultures are migrating south towards Florida and Central and South America. Watch for them soaring on warm, sunny days.

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