

Briefing Note

Why Do Leaves Change Colour In The Autumn?

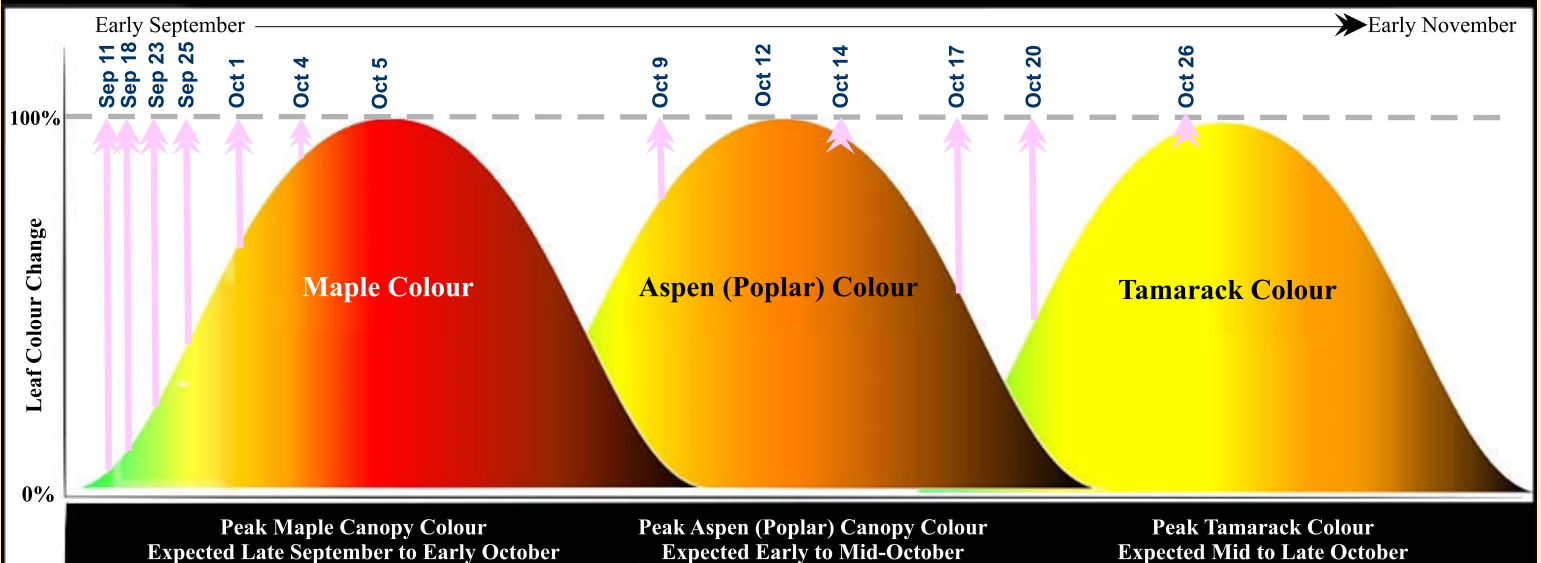
Autumn is a time for leaves to turn dramatic bright colours. Most of those spectacular colours of autumn have actually been in the leaves all summer, however they were “covered up” by the dominant green of the chlorophyll. As weather cools, and shorter days settle in, the leaves are no longer able to produce food for the tree. The chlorophyll begins to break down, revealing new and varied colour pigments. The brightest colours are seen when late summer is dry,

and autumn has bright sunny days and cool nights.

Graphics: The graphical chart below is a timeline and guide of leaf colour change for the upper Madawaska Basin where SLBM Trails are located. Next page is description of the science behind the leaf colour change for various tree species.

17 September 2023
MT Group / SLBM Trails

Leaf Colour Change Timeline ~ SLBM Trails (Upper Madawaska Basin) ~ (2018 - 2020)



© Madawaska Trails Group
SLBM Trails
Web: www.slbmtrails.org
E-mail: slbmtrails@gmail.com
Facebook: MT Group / SLBM Trails



* Based on actual observations at SLBM Trails autumn 2018, 2019 & 2020

Notes:

- 1) The significant tamarack tree stand at SLBM Trails is located on northern edge of Burnetts Mountain Sector.
- 2) There are major stands of oak trees throughout the SLBM Trails. The autumn colour of their leaves range from copper shade hues, variety of reds, and burnt red shade hues. The leaves of oak trees are usually the last to fall off (sometimes well into winter).



Madawaska Trails Group
SLBM Trails
Web: www.slbmtrails.org
E-mail: slbmtrails@gmail.com
Facebook: MT Group / SLBM Trails

50~kilometre Trail Network
Panoramic Views to Rave About





Why do leaves change color in the Autumn?

Most of the spectacular colours of autumn have actually been in the leaves all summer, however they were "covered up" by the dominant green of the chlorophyll. As weather cools, and shorter days settle in, the chlorophyll begins to break down, revealing new and varied colour pigments. The brightest colours are seen when late summer is dry, and autumn has bright sunny days and cool nights.



White Birch



GREEN - Chlorophyll

Chlorophyll is responsible for helping trees and plants turn sunlight into food. For most months, it is the dominant colour seen in most leaves until it fades away. As many trees shut down their food production, they turn to stored sugars to survive the winter.



Swamp Chestnut Oak



RED - Anthocyanin

Unlike other leaf colours that always exist in the leaf, anthocyanins are produced as the chlorophyll is broken down. The anthocyanins are often seen in leaves named for their autumn splash of red including Red Maples, Scarlet Oaks, and Red Sumacs.



Sugar Maple



ORANGE - Carotene

Sugar Maples may be one of the best examples of carotene in action. Their bright signature orange fills many hills and country roads throughout eastern Canada. Sassafras leaves also turn a slightly more muted orange. As its name implies, Carotenes are also the chemical responsible for giving carrots their unique colouring.



Aspen



YELLOW - Xanthophyll

Xanthophyll can be seen throughout the fall in trees including beeches, ashes, birches, aspens, and some oaks. It also contributes its bright yellow colour to autumn squash and corn.