

## Tree of the Month, September 2013: Trembling aspen (*Populus tremuloides*)

There is something captivating about a stand of *Populus tremuloides*- a crowd of slender trees with pale bark standing stark against the landscape. Their heart-shaped leaves are green in summer, gold in the autumn, and the slightest breath of wind sets them twisting so that the whole stand appears to be trembling. The air then fills with the whispering sound of thousands of fluttering leaves. This flutter is caused by the long, flattened, and very bendy petiole (leaf stem), that allows the leaf to twist back and forth in the wind. This is how the tree acquired common names such as 'trembling aspen,' 'quivering aspen,' and 'quakies.' Because of its white bark, trembling aspens can resemble birch trees from a distance, but instead of peeling, their bark is smooth and alive. Just beneath the pale surface of the bark is a layer of green photosynthetic tissue that continues to make sugars in winter - even after the tree has dropped its leaves. Aspen bark and leaf buds are important food sources for black bear, deer, elk, moose, porcupine and beaver.

Trembling aspen is the most wide-spread tree species in North America, ranging from the Northwest Territories to Mexico, from Alaska to Newfoundland. It is an early successional species, colonizing recently disturbed areas; eventually being replaced by conifers such as spruce and fir. Trembling aspen regenerates very quickly after wildfires, sending up many new shoots from its protected underground root system. Aspens often reproduce asexually by sending out lateral roots and growing new, genetically identical trees, eventually forming huge clonal colonies. In dry areas prone to wildfires, where conifers can't gain a foothold, these aspen colonies can live a very long time. One famous old colony in Fishlake National Forest, Utah, covers more than 100 acres. Because these trees all share one root system and are genetically identical, this grove is considered one giant colonial organism. Named Pando, which is Latin for 'I spread,' this colony has been growing and regenerating for thousands of years. The highest estimates for Pando's age are between 80,000 and one million years, which would make this colony one of the oldest organisms known to science. At an estimated 6,000 tonnes, it may also be one of the heaviest.

In the last decade, scientists have been noticing a mysterious dieback in some aspen colonies. This phenomenon has been named Sudden Aspen Decline, or SAD, and the cause is still unknown. Possible culprits are wildfire suppression and the long periods of drought that have been occurring in the United States. Aspen researchers are working hard to find a solution.

The trembling aspen stand at VanDusen was planted in the mid 1990's, and can be found near the First Nations' Medicine Wheel in the Canadian Heritage Garden (map on the back of this sheet).