



## Tree-mendous Trembling Aspens

By: Rachel Irwin



If you've ever been on one of my Wednesday Noon Walks you probably know by now that my favourite tree is the Trembling Aspen (*Populus tremuloides*). It is a tree of many names - Quaking Aspen, Quivering Aspen, and in several native languages the name translates as "talking tree," "noisy leaf" and even "woman's tongue." And that's because, just like me, this tree doesn't stop talking! This tree rustles and trembles in even the lightest breeze due to its long and flattened leaf stems. Next time you stumble across a Trembling Aspen, try and roll the stem of the leaf between your fingers. So what makes one of North America's most widely distributed species so special? Well, I have narrowed it down to 5 amazing reasons:

### 1. Brilliant Foliage - For starters,

this tree is aesthetically pleasing, especially in the fall as the leaves turn a brilliant golden-yellow.

### 2. Photosynthesizing Bark -

Yes, you heard me right. Cells in the bark of Trembling Aspens contain chlorophyll which enables stems and branches to take on photosynthesis in the absence of leaves! A study by Pearson & Lawrence (1958) found that chlorophyll pigments are more

abundant in the bark early in the growing season before the leaves have fully emerged. Take a close look at the bark of a Trembling Aspen, does it look green? Can you spot the diamond shaped marks in the bark? These marks contain small



pores called lenticels which assist with gas exchange between the plant tissues and atmosphere.

**3. Giant Superorganisms** – If you come across a Trembling Aspen it is likely to be surrounded by several other Trembling Aspens. That's because Trembling Aspens reproduce from their roots! All of the trees in an Aspen stand likely originated from a single Aspen seedling. Making them one genetically identical superorganism that is connected underground! Individual Aspen trees live to be about 100-150 years old, however, due to their ability to continuously reproduce clones a colony of Aspens can live for thousands of years. In fact, there is a Trembling Aspen grove in Utah named Pando which stretches across 100 acres, consists of approximately 47, 000 stems and is estimated to be 80, 000 years old! Pando is considered to be one of the largest and oldest living organisms in the world! The mother tree is likely long gone, however, her genetic makeup continues for thousands of years through her clones.

**4. Fire Resistant** – Trembling Aspens are considered to be a fire resistant species even though the actual trees can be severely burned and killed in crown fires. That is because the extensive root system remains intact and regenerates prolifically after fires. Heat from the fire actually helps aid in sprout production, allowing Trembling Aspens to develop more quickly than they would on cold sites. Trembling Aspens are one of the first tree's to colonize after large disturbances to an ecosystem, making them a pioneer species. They are a part of the first stages of succession and they help to restore an ecosystem back to its diverse and steady-state.

**5. Nurse Tree** – As mentioned above, Trembling Aspens help to heal ecosystems after large disturbances. Trembling Aspens are considered a “nurse tree” because they are fast-growing trees that are able to provide shade, protection and support to slower-growing plants. Additionally, these trees support large populations of animals as they produce an abundance of foliage and their buds are an important food source during the winter. Aspens also have the ability to help nurse us back to health! The bark is rich in salicin, an aspirin-like substance that has been used to treat burns, fevers, back-pain and eczema.



**Figure 1** Trembling Aspen bark. The dark, vertical squiggly marks on the left are made by feeding snails.

Now just like a snail foraging on Trembling Aspen bark, I have barely scratched the surface! It is no wonder that these are North America's most widespread tree. How wonderfully tree-mendous are Trembling Aspens?!

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