



Mother Nature's Moment • May | June 2017

Lesley Bruce Smith, ISA Certified Arborist

Trees and Air Pollution

Gilbert has discussed the phenomenon of Witches Brooming on trees. It is essentially one of the trees' reactions to pollution. But he did not mention the fact that one of the amazing and now proven facts about trees and air pollution is that most deciduous trees have an amazing capacity for absorbing our pollution. In a study, first released in 2010 by the National Center for Atmospheric Research (NCAR), it shows that trees are able to absorb our most dangerous and destructive pollutants. Volatile Organic Compounds (VOC) are what we emit from all our carbon fuel engines, like lawn mowers, vehicles, airplanes, coal powered energy facilities, and the like. These are abundant pollutants that, when mixed with sunlight and nitrogen oxide, form the ozone in smog.



Aspen Grove, hanging out and absorbing pollution
photo by Lesley Bruce Smith

The team of scientists at NCAR have shown that some trees are even more efficient than others in pollution absorption. Aspens, Poplars, Hackberries, Apples, Hawthornes, Birch, Maple, Pears, Peach and Ash trees are all really good at absorbing toxins. It makes the recent catastrophic loss of so many of our Ash trees, to Emerald Ash Borer, all the more sad. The NCAR's Boulder, CO laboratory's scientists used computer modeling, field observations, and genetic studies to research the absorption of pollution through the stomata pores (tiny holes) in tree leaves. They know that Pine trees absorb pollution too but this study was focused on deciduous trees. They used mass spectrometers to isolate and measure the presence of methyl vinyl ketones in the trees' leaves. In response Denver, who struggles with terrible pollution, has committed to planting a million trees by 2025.

Since all of us generate pollutants, we each have a responsibility to help counteract the deleterious effects they have. And although it won't solve all our pollution problems, one wonderful way of doing this is to plant and care for trees. The truth is that all oxygen producing plants have the ability to absorb pollutants, so we can all do our part to help the pollution problem, even if it is only with potted plants on our balcony, because every little bit helps. The bigger the tree, the more pollution it can absorb so taking care of our tree senior citizens is another way of taking care of ourselves.