Pines

By Warren Uxley

I recently saw a photograph taken on a mountaintop in California that was not only beautiful but inspirational as well. At ten thousand feet in the mist of a hard scrabble landscape vaulted by a brilliant sapphire-blue sky, sat a lone Bristlecone Pine tree. Twisted, contorted, tortured, more dead than alive, this ancient tree is a monument to the ability of life to endure.

At 4700 years old, the Bristlecone Pine is almost certainly the oldest living thing on earth. Many living Bristlecones were already over one hundred years old when construction began on the Great Pyramid in Egypt. I started researching Bristlecones and one thing leading to another, as it often does, I began to realize that pines are not only ecologically important but they are under appreciated as study subjects.

What separates pines from other needle bearing conifers is the fact that the needles on pines come in bundles of two, three and five. (There is only one exception to this in the entire world.) On spruces, hemlocks and firs the individual needles stand alone on the twigs.

Pines are divided into two fundamental groups: the white pines that have five needles in a bundle and the yellow pines that have two or three. The Bristlecone Pine is a five-needle pine and its closest relative in Ohio is the White Pine, which also has bundles of five needles. The white pines tend to have longer, cigar shaped cones where the cones of the yellow pines generally have a more rotund shape.

The previously mentioned White Pine (*Pinus strobus*) is the only member of the white pine group in Ohio. (There are many white pine species in western North America) The yellow pines are well represented in Ohio with three native species: the Yellow Pine, Virginia Pine and the Pitch Pine. Additionally, two yellow pine species native to Michigan – the Jack Pine and the Red Pine - have been widely planted on Ohio's public lands. The Scotch Pine and the Austrian Pine – both yellow pine species that are native to Europe – have also been extensively planted in the Buckeye State.

Despite the tremendous taxonomic diversity within the genus *Pinus*, all pines are adapted to dry nutrient poor soils. They flourish where broadleaf trees would perish. The low annual rainfall amounts in much of the western United States goes a long way towards explaining the great diversity of pines in that region.

Pines are also adapted to fire. The Jack Pines in Michigan and the very closely related Lodgepole Pines (they hybridize in areas where they both occur) have cones that will only open and disgorge their seeds after being touched by fire. After the fire, the seeds germinate and grow rapidly – in good years most pines can add 18 inches of new growth. This accelerated growth means that they can easily out compete the broadleaf trees in the challenging environments where they thrive.

The cones on many pines are frequently found on the upper branches of the tree. As the cone opens the seeds, which have wings like the seeds of maples, have the advantage of the greater height and will fall further from the tree. There are exceptions to this: the Pinyon Pines and the Whitebark Pine of the west have large seeds that lack the wings and rely on the Pinyon Jay and the Clark's Nutcracker, respectively, to disperse their seeds.

To learn more, come to Lowe-Volk Nature Center April 27th at 8 PM for a program about the pines of North America.