Keuka's Old Growth—Does it Exist?

Gordon Lightfoot sang a paean to old growth forest in his Canadian Railroad Trilogy song - "*There was a time in this fair land when the railroad did not run, when the wild majestic mountains stood alone against the sun, long before the white man and long before the wheel, when the deep green forest was too silent to be real*." The KWIC Chairman, Steve Butchko invited me along to look at a patch of "old growth forest" in a ravine above the lake awhile back. We went and looked. Was it?

Well, what is old growth forest? What does it look like? What does it do?

Northeastern old growth forest is characterized by: 1) large, tall trees at least 180-200 years old and 18 inches or more in diameter; 2) a stratified forest structure of multiple growth layers throughout the canopy; 3) gaps in the tree canopy caused by natural disturbances (ice storms, tornados, wind shear) that produce an uneven-aged mix of big old trees, medium-sized and shorter, young trees; 4) dominance by trees that are shade tolerant (don't require much sunlight to grow, such as hemlock, sugar maple, and beech); 5) many big and tall dead trees (snags); 6) many large, medium and small logs; and a dense understory of mosses, lichens, shrubs, and wildflowers.

Generally old growth areas are larger than 5 acres: if the area is smaller, excess sunlight coming in from lower tree height on the borders favors fast-growing, shade-intolerant trees like black cherry, red maple, birches, aspen, and yellow poplar and plants like blackberries and poison ivy.

Because old growth forest has high diversity of tree species, heights, food sources (fruits, seeds, lichens, mushrooms, and berries) forbs on the ground, litter and much down wood as logs, the huge diversity of associated habitats is home to a great diversity of wildlife: mammals, birds, snakes, amphibians, turtles, insects. None are old-growth obligates (must have old growth as requisite habitat), nor were the larger animals (wolves, mountain lions, caribou, bison, elk) that were extirpated prior to the 1900s because they ate the settlers' crops, livestock, and the occasional settler or were themselves eaten by the settlers. But where there is old growth, wildlife diversity maxes out.

Because of the tremendous amounts of standing and down woody material, old growth areas are carbon sinks, capturing carbon, and lowering the potential for global warming as well as optimizing recycling of nutrients through decay of fallen trees and other plants. Extensive and well-established root systems hold the soil and absorb moisture, acting like a giant sponge by retaining water throughout summer. That way, water doesn't run off over the ground after rains but rather is stored and slowly released all summer. Old growth forests moderate temperature because of their multi-layered tree canopy: their understories are warmer in winter and cooler in summer.

In the 1700s and 1800s most old growth forests in the East were chopped down to make pastures for livestock, and arable land for crops. Early 1900s pictures of the hillsides above Keuka Lake show row upon row of vineyards with nary a tree in sight. Many of those early vineyards are gone now, replaced by a resurging 80-100 year-old forest that greens the hillsides around Keuka Lake. It's mostly an oak forest, with a smattering of other less shade tolerant trees, such as red maple and birch, but given another 100-200 years it will slowly revert to old growth, if not harvested, as the shade tolerant hemlocks and sugar maples replace the sun-loving trees.

So, did our ravine adventure turn up an old growth forest? Mostly, no. Situated on a narrow finger of land between two deep ravines, its trees likely had been cut about 100 years ago. Yes, there were a few really big remnant live and dead hemlocks, and one or two massive logs on the ground. But some of the big trees on the boarder of the narrow strip were spreading oaks the generations-ago farmer left as a source of shade and food (acorns) for his cattle. And most of the other trees were shade intolerant species such as black cherry and red maple. The narrowness of the strip of woods meant that sunlight would always come in from the sides, favoring the shade intolerants rather than the old growth species of hemlock, sugar maple and beech. But many of the

Keuka Lake hillside forests could regain old growth status, with all the positive aspects for forest and lake ecology. Just give them another 100-200 years.

The Tionesta Scenic and Natural Research Area (http://www.dcnr.state.pa.us/forestry/oldgrowth/**tionesta**.aspx) in the Allegheny National Forest between Sheffield and Kane in northwestern Pennsylvania is a 4,000 acre true old growth forest, and the Zoar Valley (http://www.zoarvalley.org) 30 miles south of Buffalo is another. Both are a short drive, and worth a day's exploration. The southern wall of the Keuka Outlet between Keuka and Seneca lakes is steep and covered with old hemlocks: it certainly looks like old growth. Take a look come spring and judge for yourselves.