



THE 500-YEAR FOREST FOUNDATION

Newsletter

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New Director, Steve Nash



Steve Nash teaches in the journalism and environmental studies programs at UR, where he has been a faculty member since 1980. His reporting on science, archaeology and the environment appears regularly in magazines and newspapers. He has written about Southeastern old-growth forests in his book *Blue Ridge 2020 — An Owner’s Manual*, published by the University of North Carolina Press; for the *Washington Post Sunday Magazine*, and in his latest book, *Millipedes and Moon Tigers: Science and Policy in an Age of Extinction*, published by the University of Virginia Press. He received UR’s Distinguished Educator Award in 2002, and he’s a member of the Virginia Invasive Species Council’s advisory committee.

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Ailanthus, aka Tree of Heaven or Paradise



Ailanthus

Ailanthus emigrated from China, came to Philadelphia via England in 1784, and was spread throughout the eastern U.S. by the nursery trade. In the 1800s Chinese immigrants brought it to the western states. Now, it is everywhere from southern Canada to Argentina.

In China Ailanthus is used for ornamental purposes as well as in traditional medicine. The walnut-like leaves of Ailanthus are used to cultivate a silkworm that produces a hardy, rough silk. The tree is also used in some furniture and charcoal manufacture.

In this hemisphere its name is very definitely a misnomer. It grows up to 80' tall anywhere (except in shade) in any kind of soil, tolerates pollution well,

spreads aggressively, has an offensive odor, and is difficult to subdue. It grows rapidly, creates new sprouts through rhizomes at the ends of roots, forms dense thickets, and overruns native populations. It produces chemicals that may inhibit growth of native plants. For these reasons it is considered an invasive species. Trees are either male or female and a single female tree can produce up to 350,000 seeds per year.

Ailanthus left all its natural enemies behind in China. Its leaves are unpalatable to many insects. Thus in the Americas there are few controls, although two fungal species from China are under study as potential control agents. Manual and chemical controls are used



Ailanthus leaves and blossoms

most often to prevent the spread of Ailanthus. Young seedlings are dug or pulled up. Girdling or cutting trunks followed by painting Garlon or Roundup on the cuts, kills larger trees.

Chestnut Ridge Natural Area Preserve

Bob Gilvary reported that plans have been delayed to put the remaining 2,236 acres of the Gilginea Tree Farm under a conservation easement until it is determined whether it is possible to do this and still have a wind farm on the property.

Bob reports further that he has signed up for a carbon sequestration program on the entire 2,550 acres. At present forest growth rates about 94,000 tons of CO₂ could be sequestered per year. The present plan is not to cut any timber on the property for at least ten years to let the large oaks mature more and thus sequester more carbon. In the meantime timber stand improvement will continue to increase growth rates.

According to Chris Ludwig, Chief Biologist, Virginia Natural Heritage Division, the state will do a one day inventory this fall looking for a rare forest types located outside but nearby the existing 233-acre preserve.

Kolb Forest

Non-native invasive plants coming into the forest from adjacent properties present an ongoing problem. Birds and animals disseminate seeds of invasive as well as other plants over the areas of their territory which of course do not correspond to human property lines.

Thus, the battle to control invasive plants takes continual effort. Over the years Jean Kolb has worked diligently to control garlic mustard. Her efforts have been successful in removing it from many areas and greatly limiting its spread in others.

With serious help from the Mehrings, Peter and sons, Adam and Ryan, oriental bittersweet is beginning to be reigned in. Although Japanese stilt grass has been cleared from several small areas and reduced in some others, it remains a major problem. Areas infested with mile-a-minute vines are relatively small and will be attacked in the coming weeks.

Of the many flowering plants in the Kolb forest, some have been so heavily browsed by deer that the Kolbs have fenced in an area 65 by 85 feet to protect the deer-favored species such as the ones pictured here.



In flower: white trillium, pink wild geranium, yellow lady's slipper.
In leaf: wild hydrangea, bloodroot, yellow impatiens, goat's-beard, heart-leaved aster

Kenny/Brooks Forest CLINCH MOUNTAIN PRESERVE



Dale Fields with armful of Garlic Mustard

It remains dry here on the Clinch Mountain in far Southwest Virginia! Though the year started out with adequate rain fall, most of the rain passes to the west and north of Scott County. We are now over 3 inches below the normal level for this date! Last year we only received half our normal rain fall and a late freeze was disastrous.

Some tree species,

spring flowers, and much of our fruit was damaged. (We lost 90% of our blueberries in 2007.)

The huge box elder trees that flourish in the lower sections of our property (not in the 500-year forest) seem to have been hurt the most. Many branches lost their leaves last year, thus producing dead limbs which make for precarious situations near our house and farm buildings.

Damage to trees at higher elevations is not as noticeable, especially the old trees which are well rooted. However this may change if the drought continues as we understand it usually takes 2 or 3 years for it to affect most trees.

The invasive plants, such as the garlic mustard, seem to thrive under this climatic stress and its growth may even have been stimulated. It is back in full force this spring. It appears to be most prevalent in the valleys where it is less dry and has spread both up and down the hollers from the trails that run through them. With the help of Dale Fields we have been able to remove a large number of these plants in the Old Growth section of the property. Dale has spent three days pulling and piling the plants in areas where they were most abundant. Though the plants have finished blooming they will not go to seed for some time yet, so Dale will continue to pull them as time allows.

Our mountain springs continue to flow! For that we are thankful. All the water coming to our house is gravity fed and the springs are high enough above us to provide the necessary 40 lbs of pressure. We have the sweetest, purist drinking water available anywhere. Because trees have not been cut on our part of the Clinch Mountain for many years we believe the springs will continue to flow much longer than on other properties where major cutting has taken place. If the drought does continue we may soon be providing water to our neighbors and friends. Last summer many shallow wells and non-forested springs in our region went dry.



Owning Land

A statement by Hal Kolb



Hal Kolb

Jean and I believe that many people think too much about their ownership of land, and too little about their stewardship. A piece of land has its own history, its own life (which includes many other lives), its own integrity. Thus we have put a conservation easement on our property, not because of the tax break or our wish to control it beyond our lives, but for the land itself, for its protection and preservation. We humans are transients. So-called owners come and go; the land abides. Our duty, our moral duty, to the rich space that nourishes us for a time, is to understand it as

well as we can, to disturb it as little as possible, and to create a plan that will sustain it for future centuries.

Here is a poem on ownership I wrote for Jean's birthday, while sitting under a large yellow-poplar tree, just after we bought an adjacent piece of land on which the poplar grows. The tree is the speaker.

Who Owns Me?

A monologue overheard at Big Bend, Boaz Mountain, Virginia

I hear, through the grapevine,
that I have a new owner.
I do not remember seeing the previous one,
though I have heard
the mutter of his motors.

This new one seems OK.
He carries a chain saw in his truck,
but he doesn't seem to use it on anyone
who has roots firmly planted in the ground
and head high in the sky.
At eighty, I—*Liriodendron tulipifera*—
am both older and younger than he.

"Who owns me?" It is an old question,
heard along the banks of the Nile five millennia ago,
then in Greek fields, medieval fiefdoms, Mississippi
plantations,
and from burqa-shrouded women in Afghan villages.

People now say that their kind should not own others of
their kind.

Then why should these pygmy people,
thin-barked, twin-trunked, nervously hopping and
skipping about,
think that they own me?

They can call me names, cut me down, cut me up;
but they can never own me.

I own myself.

Another Old-Growth Forest Value: Carbon Sequestration



This photo is from Wikipedia encyclopedia. The eddy covariance system displayed here consists of an ultrasonic anemometer and infrared gas analyzer.

At present on earth there are over 500 tower sites operating on a long-term continuous basis.

The towers use the eddy covariance methods to measure the exchanges of CO₂, water vapor, and energy between terrestrial ecosystems and the atmosphere.

Deforestation throughout the world accounts for over 20 percent of annual global greenhouse gas emissions primarily through the release of carbon dioxide (CO₂). The emission of greenhouse gases is a major causative factor in climate change also known as global warming. Clearly, forests play a major role in climate change. They store carbon in an inert form and thereby reduce the release of carbon dioxide (CO₂). How do the age and economics of the forest come into play?

Trees put on wood rapidly through their first 50 to 60 years of growth. Consequently, many foresters also believe that young forests are more efficient than mature forests at carbon capture by taking in carbon dioxide (CO₂) more rapidly to support photosynthesis. The rapid carbon uptake of younger forests fits in with forestry models that see older trees as less valuable due to their slowing growth. New studies have turned this thinking on its head.

Through advanced CO₂ measurement techniques, researchers from Oregon State University and Harvard found that mature forests are much better at capturing and holding carbon. In one Harvard Forest study alone, the carbon

uptake of a 50 year old section of forest nearly doubled over the next 15 years.

The carbon exists in great reservoirs in the soil and in the living wood. When younger forests are cut, decomposer microbes in the soil go to work. They break down dead branches and roots and release CO₂ in the process. The release continues for many years even if the forest is replanted. In contrast, carbon continues to accumulate in older forests for decades.

While growing older trees is often not considered profitable, the market value of older forests may change as carbon “cap and trade” markets recognize and pay for their superior carbon retention ability. Through a cap and trade system, industries that do not meet carbon emission standards would offset their excess pollution by buying carbon credits from sources that more than exceed standards. By allowing forests to grow older and increase their ability to retain carbon, old-growth should become a source of carbon credits and of potentially greater economic value.

Information for this article was taken from published writings found at www.500yearforest.org/growth/links.htm under “Old Growth/Forests and Carbon Sequestration.” For more information on carbon sequestration and old-growth forests, please visit the above noted website.

Locating Prospective 500-Year Forests

Megan Maloney, a Sweet Briar College Environmental Studies student, interned this spring with our Foundation to identify 500-year forest prospects. She identified 122 prospective partnerships with private forest owners with forested property of over 100 acres within Amherst County, VA. The project used tax maps and records in combination with information from interviews and previous easements to select landowners whose property had potential for old growth forest. Information on prospective properties was compiled in an Excel database so that data could be easily sorted and used. Megan and the Foundation staff hope this will lead to the successful establishment of additional 500-year forests and the preservation of Amherst County’s rich biodiversity.



Megan Maloney

Donors ~ Thank You

What we do is only possible with the support of people you see on this list.
The following gifts were received from November 1, 2007 to May 31, 2008:

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500-YEAR FOREST
FOUNDATION

President's Letter



Ted Harris

We are greatly pleased to have Steve Nash, such a fine new addition to our Board. His environmental record is outstanding and his interest is abundant.

As you read from our forest reports, this is the time of year in which the serious work of controlling invasive plants becomes demanding. The owners of our forests have become adept in locating knowledgeable people to help control these invasive plants.

Featured is *Another Value of Old-Growth Forests* and a very big value it is – Carbon Sequestration. In this newsletter several other values stand out: old-growth forests as an ideal location for wild flowers and streams that continue to flow even in drought times.

We were very lucky to have a capable person, Megan Maloney, a Sweet Briar senior intern with us do a detailed county study for us. The really good news is that there are several 500-year forest prospects uncovered so far. I visited two of them in the last week of May.

We rely on your help and are most thankful for your support. If you know of someone you think would be interested in our work, please call them to be in touch with me.

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