



BULLETIN

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Saving the Earth
America's Hardwood Forests
Cloning Ancient Trees
NAL Conference
P4P's 25th Anniversary

Native Ash Trees: A Tale of Many Cities



Who among us hasn't occasionally taken trees in our gardens and parks for granted? It's sometimes easy to

believe that trees can take care of themselves, and to forget how well they take care of us. When they are healthy, they absorb harmful carbon from the air, provide habitat for wildlife, and, in cities, reduce the "heat-island effect" caused by concrete and impervious asphalt. Trees soothe us, improving mental health. When they suffer, we suffer, as cities nationwide are learning much too fast and furiously. The most virulent assault on urban trees by an invasive pest in US history, already present in 30 states, is that of the emerald ash borer (EAB), which was first identified in Detroit in 2002—yes, tracking disease can resemble FBI work—after

arriving years before in untreated shipping crates from China.

Ash trees make up less than ten percent of US forests, though that figure rises in places like the damp lowlands of southern New England. In our cities, however, ash has become a tree of choice due to its fast growth and adaptability as well as its classic beauty. Of the 45 to 65 species of ash in the *Fraxinus* genus, 22 are native to the US, and of those the green ash, a survivor of drought, flood, and cold, is the most commonly planted street tree. All ashes are at risk—eight billion trees in North America alone—but the EAB's impact is most visible today in such Midwestern cities as Toledo and Cincinnati, as documented in Andrea Torrice's 2015 documentary *Trees in Trouble*. Early on we see a Cincinnati street shaded by the lush canopies of 40-foot ash trees, then that same street lined with stumps. At the time of filming, the Cincinnati area was expected to lose up to 20 percent of its total tree cover.

This past winter I spoke with Dave Gamstetter, natural resources manager for the

City of Cincinnati. To ensure public safety it was vital to get ahead of the epidemic through prophylactic takedowns. That has meant 5,000 trees removed (first from high-use playgrounds, picnic areas, and dog parks) and replaced, with another 300 to be cut down before spring. About 200 of what appear to be healthy trees along major thoroughfares are being treated. With a staff of seven, plus local and US Forest Service help, it's been a grueling process—and a lesson in urban preparedness.

"We knew the EAB was coming before it arrived, so we began with a measured take-down of the biggest trees, the ones whose canopies would be the most expensive to replace. And we knew the wood had to be managed." And here's where Cincinnati's story takes an upward turn. "Logs were milled and, in partnership with public schools, turned into panels (schools paid \$1 a board foot). Montessori schools bought movable cabinets made of the ash. Later our Urban Timber Plan moved into flooring, which has been sold to Northern Kentucky



Ash-lined street in Toledo, OH, before (2006) and after (2008) EAB infestation. Photos by Dr. Dan Herms

A Beetle Strikes Again



The polyphagous shot hole borer beetle

A beetle with an odd name, the polyphagous shot hole borer (PSHB), belongs to a family—Ambrosia—that sounds anything but threatening. Unfortunately the PSHB is a fearsome foe, devastating over 200 tree species in Southern California. Some of its victims include the protected California sycamore (*Platanus racemosa*) and California live oak (*Quercus agrifolia*) as well as box elder (*Acer negundo*), avocado (*Persea americana*), and English oak (*Quercus robur*). About the size of a sesame seed, the PSHB does not eat wood or foliage but instead drills into the bark, and at its most destructive injects a deadly fungus. Telltale signs of trouble are dark oily stains and small crusty eruptions on the trunks.

As with most infestations, stopping the spread is key. The PSHB can travel up to 12 miles a year in search of new hosts, and so it's essential that people not move infected wood or purchase mulch from affected counties. To date, chemical control is not an option. The best preventive measure is chipping or grinding infected wood. Burning, fumigating, and covering contaminated wood with tarps may also prove effective. Any PSHB outbreak should be reported to agricultural officials for tracking purposes.

—**Pamela Hirsch, Garden Club of Morristown, Zone IV**

University [seven miles south of downtown Cincinnati] and private residences.”

America's urban ash trees have no defense, *yet*. Experiments with stingless wasps that prey on EAB larvae have so far yielded little. Jennifer Koch, a biologist at the US Forest Service Research & Development station in Ohio, has been working since 2007 to develop hybrid ash and beech trees resistant, respectively, to EAB and the beech scale insect. Her work and Cincinnati's Urban Timber Program were featured in an hour-long special on BBC Canada. It's a global problem accelerated by global trade and exciting global teamwork among researchers. Forest Service researchers are part of an international team that was recently awarded over \$1.2 million by the United Kingdom's Tree Health and Biosecurity Initiative to pioneer a new method for finding genes connected to pest and pathogen resistance in trees.

What can we do at home, especially in our cities? (Combating pests in the wild, that is, at the level of entire forests, is all but impossible. “We're never going to treat, or inspect, our way out of this problem,” says forest ecologist Gary Lovett.) While science

continues the search for a safe solution, Cincinnati provides a model. And cities as far west as Bozeman, Montana, where EAB has yet to arrive, are engaged in exactly what Dave Gamstetter advises: preparation, preparation, preparation.

Bozeman's “Street Tree Guide” for selecting and planting the city's urban “infrastructure” goes out of its way to recount the many reasons trees make residents' lives better—ending in \$2.3 million of benefits from its 20,000 publicly owned trees. It also gives a complete species guide, from alder (*Alnus*) to serviceberry (*Amelanchier spp.*), with planting and care instructions. Most impressively, the online booklet details two working partnerships between Bozeman's Forestry Division and homeowners: a cost-sharing program (for boulevard planting) and a voucher program (for replacement trees).

Right now ashes comprise 75 percent of Bozeman's mature street trees, and the guide makes clear that planting them is no longer permitted. Will science or the EAB win the race down Bozeman's tree-lined streets?

—*Lorraine Alexander, Millbrook Garden Club, Zone III*



A “gallery” carved into ash wood by larvae of the emerald ash borer. Photo by John Hritz

Dig Deeper: Resources

Native Ash Trees

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The documentary *Trees in Trouble* can be ordered from bullfrogfilms.com. Using the discount code GCA75, clubs receive a \$75 special price to show the film publicly as long as no admission is charged.

Talking Trees

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In addition to books such as *The Secret Life of Trees: How They Live and Why They Matter* by Colin Trudge (2006), or *What a Plant Knows: A Field Guide to the Senses*, by Daniel Chamovitz (2013), there are interesting TED Talks by Suzanne Simard (July 2016) and Stefano Mancuso (July 2010).

David Milarch

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The Man Who Planted Trees: A Story of Lost Groves, the Science of Trees, and a Plan to Save the Planet by Jim Robbins (2015) tells the story of David Milarch's champion tree project. Watch Milarch's TED Talk and visit these websites for more information: ancienttreearchive.org and movingthegiants.com.

Camellias

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Barbara Tuffi, author of *Camellia Portraits* (2015), recommends Nuccio's Nurseries in Altadena, CA, and Camellia Forest Nursery in Chapel Hill, NC for mail-order. Also visit her website camelliasbydesign.com and check Dr. William Ackerman's book, *Beyond the Camellia Belt: Breeding, Propagating, and Growing Cold-Hardy Camellias* (2007).

NAL Conference

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Louie Schwartzberg's Moving Art connects people with nature. Visit his website movingart.com. It provides additional information on his many films, links, and blogs. His TED Talks are "Hidden Beauty of Pollination," "Hidden Miracles of the Natural World," and "Nature. Beauty. Gratitude."

GCA Scholar Nick Henshue

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For gardeners curious about earthworms this is the hot-mustard-solution recipe that Nick Henshue uses: Mix 1/3 cup of mustard powder (such as Coleman's) in a gallon of warm water and allow the solution to steep for an hour, then gently pour it on a cleared patch of ground. This quantity covers about 2.5 square feet. For best results, try under your leaf piles or other moist, shady areas. The irritant chemicals in the mustard neutralize in the soil in a little over an hour, with no adverse effects on plants. You may also view Nick's earthworm extraction on YouTube: <http://bit.ly/2kPaJPG>.

Doug Tallamy

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For more information about native plants, visit Tallamy's website bringingnaturehome.net and read his book *Bringing Nature Home: How Native Plants Sustain Wildlife & Our Gardens* (2007). To learn about plants native in your area, Tallamy suggests the National Wildlife Federation's website, nwf.org, which includes a native plant finder by zip code.

Tallamy notes an uptick over the last ten years in native plant material available at local nurseries; he is encouraged that his message may be one that gardeners are ready to hear and he urges us to request native plants at local garden centers if they are not currently available.

By identifying and planting the top dozen native plants for your particular area and intermixing them with less desirable imported plants, landscapes can provide up to 75 percent of the food needed in an ecosystem.

Below is Tallamy's Top Ten list of woody and herbaceous plants to attract the most species of moths and butterflies:

Plants and Supported Species

WOODY PLANTS	
Oak (<i>Quercus</i>)	557
Black Cherry (<i>Prunus</i>)	456
Willow (<i>Salix</i>)	455
Birch (<i>Betula</i>)	413
Poplar (<i>Populus</i>)	368
Crabapple (<i>Malus</i>)	311
Blueberry (<i>Vaccinium</i>)	288
Maple (<i>Acer</i>)	285
Elm (<i>Ulmus</i>)	213
Pine (<i>Pinus</i>)	203
HERBACEOUS PLANTS	
Goldenrod (<i>Solidago</i>)	115
Aster (<i>Aster</i>)	112
Sunflower (<i>Helianthus</i>)	73
Joe Pye (<i>Eupatorium</i>)	42
Morning glory (<i>Ipomoea</i>)	39
Sedges (<i>Carex</i>)	36
Honeysuckle (<i>Lonicera</i>)	36
Lupine (<i>Lupinus</i>)	33
Violets (<i>Viola</i>)	29
Geraniums (<i>Geranium</i>)	23

In Memoriam

Ann Boocock Coburn (Mrs. Arthur L. Coburn III) *Village Garden Club of Sewickley, Zone V*

On December 6, 2016 the GCA and the Village Garden Club of Sewickley lost one of their most respected members and staunch supporters, Ann Boocock Coburn. Ann grew up in Buffalo, New York, where her father was headmaster of the Nichols School. Ann always considered herself an educator both in her personal and public lives. Her great passion was promoting conservation in all its facets. For over two decades Ann served on the Conservation and NAL committees in many capacities, including as chairman of both committees. She was a member of the Executive Board for four years, serving on the Finance Committee and as the GCA's treasurer. Ann once observed that the single most important role of the GCA at the national level was to mentor committee members, enabling them to return to their clubs and communities as effective local advocates. Ann was an active supporter of the Center for Plant Conservation, Pennsylvania Environmental Council, Allegheny Land Trust, Little Sewickley Creek Watershed Association, and other environmental and land conservation organizations. Her charm, energy, intellect, and varied interests in nature, watercolor, boating, and birds led to a wide circle of admiring friends. She will be sorely missed.