

CONNECTICUT Woodlands



FORESTS AS LIFE

TREE HISTORY, BUILDING LOCAL, AND BLUEBERRY TRADITIONS

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DIANE FRIEND EDWARDS

The Mattatuck Trail crosses a small dam at the outflow end of Beaver Pond. See "Try This Hike" on page 20.

Connecting People to the Land

Our mission: The Connecticut Forest & Park Association protects forests, parks, walking trails and open spaces for future generations by connecting people to the land. CFPA directly involves individuals and families, educators, community leaders and volunteers to enhance and defend Connecticut's rich natural heritage. CFPA is a private, non-profit organization that relies on members and supporters to carry out its mission.

Our vision: We envision Connecticut as a place of scenic beauty whose cities, suburbs, and villages are linked by a network of parks, forests, and trails easily accessible for all people to challenge the body and refresh the spirit. We picture a state where clean water, timber, farm fresh foods, and other products of the land make a significant contribution to our economic and cultural well-being.

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Correction: The article "Exploring the Old Connecticut Path" (spring) said that David Raczkowski, aka "NipMuck Dave," coordinates the annual Nipmuck Marathon on the Nipmuck Trail. Although Mr. Raczkowski started the marathon, it's now directed by the Shenipset Striders running club, which, Mr. Raczkowski writes, does an outstanding job. "I continue to help out that race by maintaining that trail for CFPA to race running standards," he said.



On the Cover:

The artist Frederic Church's romantic rendering of what Thomas Hooker saw when he traveled from Cambridge, Massachusetts, to Hartford in 1636.

PUBLIC DOMAIN/HANGS IN WADSWORTH ATHANEUM

Worst enemy of the future? Irresponsible development



BY ERIC LUKINGBEAL

What will Connecticut look like in 50 years?

Climate change, development, energy, agriculture, and forest policy will all play a part. It's hard to say what will happen. As the Danish physicist Niels Bohr said, "Prediction is always difficult, especially about the future."

But scientists in Massachusetts have taken a stab at coming up with some educated guesses. Earlier this year, eight natural resource professionals, in collaboration with Harvard Forest, published *Changes to the Land: Four Scenarios for the Future of the Massachusetts Landscape* (Harvard Forest, Harvard University, 2014). The four scenarios used different numbers for land development, timber harvesting, farmland expansion, and forest conservation. For climate change, the scientists assumed temperatures in 50 years would increase 4 degrees F, and average annual precipitation would increase between 5 and 7 percent.

Connecticut and Massachusetts both have high population density. Connecticut is the fourth most densely populated state; Massachusetts is the third. Both states have seen a return of the forest during the past century. Both still have significant forest cover, but forest cover is beginning to decline. Both have decentralized land-use policy, with many important decisions now made at the municipal level. It's reasonable to think that the Harvard Forest project's analysis and conclusions would apply here.

The four scenarios chosen were recent trends, opportunistic growth, regional self-reliance, and forest as infrastructure. The recent trends scenario assumes that development, agriculture, land conservation, and timber harvesting would resemble the patterns from 1999 to 2005. The opportunistic growth scenario assumes that the economy grows rapidly, environmental regulations are sharply curtailed, and land-use planning is shelved. The regional self-reliance scenario

FOR CLIMATE CHANGE, THE SCIENTISTS ASSUMED TEMPERATURES IN 50 YEARS WOULD INCREASE 4 DEGREES F, AND AVERAGE ANNUAL PRECIPITATION WOULD INCREASE BETWEEN 5 AND 7 PERCENT.

assumes that high food prices and reliance on oil drive up interest in biomass for energy. It lays out the related need to clear land for agriculture so that food and energy needs can be met locally. Finally, forests as infrastructure assumes that forests are actively managed and conserved, with an emphasis on conserving forests as a source of low-cost carbon storage, renewable energy, local wood products, clean water, and habitat.

The scenarios were scored for how well they achieved specific benefits: total forest area, conserved forest area, developed area, timber harvest, farmland, harvested wood, high-value tree species, carbon in live trees, impervious cover, annual water runoff, nutrient export, priority forest habitat conserved, and small forest patches. One could argue about this list, but keep in mind Gaylord Nelson's observation, "The global

economy is a wholly owned subsidiary of the environment."

The Key Findings section ranks the forest and infrastructure scenario first in benefits to people and nature. It protects more than half a million acres of priority forest habitat and limits fragmentation. (Priority habitat is defined as extending more than one kilometer from any nonhabitat edge). It supports increased local wood production. It allows nearly the same amount of development as the recent trends scenario, but two-thirds is clustered development.

The most striking finding is that over 50 years, development has a greater impact on carbon storage and water quality than climate change does. Climate change will affect forest composition and growth because of higher temperatures and increased rainfall.

The report concludes that Massachusetts needs to do three things to get the full benefits of its forests. First, recommit to land conservation (increase funding, offer tax incentives to land owners). Second, redouble land-use planning and policy (higher residential densities; clustered, mixed-use, and reuse near cities and town centers; town adoption of natural resource zoning; state-level land-use zoning reform). Third, promote credits for forest stewardship plans, and fund landowner outreach and marketing of local, sustainably harvested wood.

If Connecticut did these things, it should be able to get the same benefits. The prospects are daunting. Local officials in 169 towns make the land-use decisions. Home rule is not going away anytime soon. There are many claims on the state's budget. Federal environmental policy seems stuck. But, as the African proverb has it, "The best way to eat an elephant is one bite at a time."

Eric Lukingbeal is a retired environmental lawyer from Granby, where he lives with his wife, Sally King. He serves on the town's land trust and planning and zoning commission.

THE KEY FINDINGS SECTION RANKS THE FOREST AND INFRASTRUCTURE SCENARIO FIRST IN BENEFITS TO PEOPLE AND NATURE. IT PROTECTS MORE THAN HALF A MILLION ACRES OF PRIORITY FOREST HABITAT AND LIMITS FRAGMENTATION. IT SUPPORTS INCREASED LOCAL WOOD PRODUCTION. IT ALLOWS NEARLY THE SAME AMOUNT OF DEVELOPMENT AS THE RECENT TRENDS SCENARIO, BUT TWO-THIRDS IS CLUSTERED DEVELOPMENT.

CFPA is great for your health



BY ERIC HAMMERLING

At one of the Connecticut Forest & Park Association's recent trails workshops, Julia Anderson, a student at the Yale School of Forestry & Environmental Studies, told me about an exciting report, "Improving Human Health by Increasing Access to Natural Areas: Opportunities and Risks" (Yale School of Forestry & Environmental Studies, 2014).

Several of the report's prominent findings demonstrated that the CFPA's ongoing work to implement its mission—"connect people to the land in order to protect forests, parks, and walking trails for future generations"—is also great for your health.

Some key findings from the proceedings are excerpted here:

- Reducing obesity and related diseases through outdoor exercise is a huge driver of investments in trails and park areas.

- A growing body of research demonstrates the benefits to mental health/development from time spent in nature.

- At the level of our brains, we need to recharge our mental energy by offsetting the time we spend devoting "direct attention" to our work by spending time on activities with a high degree of "indirect attention." The fascination that comes from relaxing in nature has been shown to be a good source of indirect attention and, hence, a source of replenishment for "direct attention."

- At the cellular level, chronic stress, obesity, and inactivity all cause damage to our mitochondria by increasing the production of free radicals that eventually result in cellular damage and increased inflammation, which is a trigger to many Western diseases of concern—such as diabetes, cardiovascular disease, and Alzheimer's. Being active in a natural environment (so called "green exercise") reduces stress and increases activity in a manner that can reduce this damage.

- Children's academic performance improved with more access to green space

in the Chicago public schools, with the most powerful beneficial effects on children at risk.

- In the Netherlands, proximity to parks was connected to improvements in test scores.

- For children with ADHD, walks in green areas have been found to have similar effects as a dose of Ritalin—and parents are reporting that they notice the difference.

- Patients recovering from surgery or traumatic events heal faster when exposed to nature. Adults focus better after simply looking at pictures of green space. And children develop more creativity and better self-control through unstructured play in green spaces.

- Threats from a changing climate, the continuing fragmentation of open lands, spreading invasive species, and growing health care access inequalities are a few of the major issues that require attention and which would benefit from partnerships between the health care and land conservation sectors.

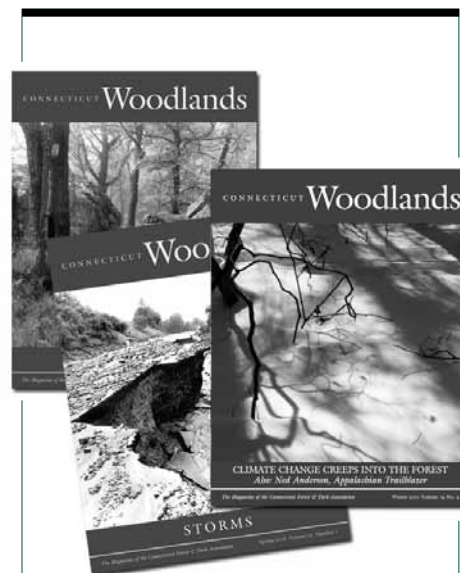
- Land conservation or restoration initiatives have the potential to help reduce fragmentation and some of its associated health risks. These include diseases that jump from urban or suburban areas to natural areas when land is fragmented.

- The prevention of health problems is considerably cheaper than treating acute ailments or managing chronic conditions. As such, land conservation has the potential to help reduce health care costs through the numerous services and benefits that natural systems provide—particularly in preventing acute conditions, such as those resulting from chronic stress and inactivity.

- Researchers have documented notable mental health changes in adults who have spent time in natural space, such as improved mood, attention, and self-discipline; reduced stress, anxiety, and aggression; and improved recovery times from illness and management of symptoms for patients with dementia or Alzheimer's Disease.

View the full report at environment.research.yale.edu/publication-series/6131.

Eric Hammerling has directed CFPA since 2008. He lives in West Hartford.



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Connecticut Woodlands is a quarterly magazine published since 1936 by CFPA, the private, non-profit organization dedicated to conserving the land, trails, and natural resources of Connecticut.

Members of CFPA receive the magazine in the mail four times a year. CFPA also publishes a newsletter several times a year.

For more information about CFPA, to join or donate online, visit our website, www.ctwoodlands.org, or call 860-346-TREE.

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White oak.

KARREN WCISEL

WITNESS TREES, FOSSIL POLLEN, AND OTHER INSIGHTS

*How Connecticut's forests
have changed from
colonial to modern times*

BY EDWARD K. FAISON

In 1636, the Reverend Thomas Hooker left Newtown (Cambridge), Massachusetts, with 100 followers to settle in a large, fertile river valley some 90 miles to the southwest. Following Native American trails that entered the future state of Connecticut through Woodstock, Mr. Hooker's two-week journey culminated in the founding of Hartford. This journey is fittingly celebrated as a defining moment in Connecticut history, but it also marked one of the earliest overland expeditions by European settlers into the interior of southern New England. What type of forest and landscape did Mr. Hooker and his followers encounter on their trip? If we were to retrace their steps today, how would the forest look different from its "original" counterpart? With more than 375 years elapsed and no existing firsthand natural history accounts from Mr. Hooker's expedition, these questions would seem hopelessly relegated to the realm of speculation. Remarkably, this isn't the case.

Colonial Witness Trees

Although largely ignored or unknown to foresters, ecologists, and conservationists, most Connecticut towns possess a colonial-era forest inventory in their town archives. Upon settlement, colonial towns commenced with delineation of property ownership. "Metes and bounds" surveys were the most common method. A property was typically described from a given point around its perimeter and back to the starting point with the use of physical features, distances, and directions. The most common, often the only, physical features used to mark corners in these surveys were trees.

After a town's bounds were surveyed—a process that took anywhere from a handful of years to several decades—several hundred "witness" trees had been recorded. Compiled across counties, states, and regions, witness trees offer a formidable inventory of the forest composition that greeted the first European settlers. Actually, witness tree data are arguably more comprehensive than any forest inventory we have today. Armed with these data, we can reconstruct Connecticut's original forest composition, and with reasonable accuracy assess the relative abundance of different trees that Mr. Hooker and company would have encountered on their journey from Cambridge to Hartford.

Reliability of Witness Tree Data

But are the witness tree data reliable? Can the tree identifications of the early land surveyors be trusted, and were the surveyors biased in their selection of certain tree species? These are important questions, given the large number of early land surveyors employed across Connecticut, the lack of formal botanical training of the surveyors, and the absence of a standard method for selecting trees. Despite these potential pitfalls, it is unlikely that errors or bias had an important effect on the data. Here's why. Basic natural history skills were far more common among laypeople in the colonial era than they are today; therefore, early land surveyors would probably have been familiar with the common tree types. Charles Cogbill, an ecologist and forest historian who has collected more witness tree data across the northeastern US than any other researcher, described these surveyors as "discerning naturalists." Comparisons of witness trees recorded in the midwestern United States in

the 19th century with the same witness trees still standing have confirmed Dr. Cogbill's assessment that the surveyors were accurate in their identification. With respect to surveyors potentially favoring certain tree species over others, one must remember that there was an inherent guard against such bias in the surveys: Tree selection was ultimately limited to the few stems that happened to be present at a property corner.

Chestnut: The King That Never Was

Among the more fascinating aspects of studying the witness tree data is discovering that some of the conventional wisdom regarding tree abundance is not supported by the data. American chestnut (*Castanea dentata*) is often purported to have been the king of the Connecticut forest, constituting as many as half of all trees in the forest, before it succumbed to the chestnut blight in the early 1900s. But the witness trees tell a different story. Chestnut was certainly a common tree, but it was by no means the most abundant tree in the original forest, accounting for less than 10 percent of Connecticut's trees. Where does the discrepancy arise? Inferences on chestnut's "original" abundance come from early forest surveys at the beginning of the 20th century, which estimated that chestnut composed 25 to 50 percent of Connecticut's standing timber. These estimates, just before chestnut's demise to the blight, happened to coincide with the tree's historic peak in abundance—an abundance greatly inflated by 19th-century land-use practices. Intensive fuelwood cutting in Connecticut's woodlands in the late 19th and early 20th centuries created a 20- to 40-year-old forest of "sprout hardwoods," which favored the prolific stump-sprouting chestnut over less prolifically sprouting trees. It is assumed that because chestnut was so abundant at the beginning of the century, it must always have been that abundant.

One of the reasons that chestnut was not the king of the original southern New England forest is that the tree's abundance varied tremendously with topography and soil. It grew well in sloping, elevated terrain such as the western uplands of Connecticut, where it constituted as much as 14 to 16 percent of trees in the towns of Redding and Kent in the 1700s. Chestnut was less common in flat areas such as the northern Connecticut Valley towns of Enfield and Suffield (where

it made up only 1 to 4 percent of all trees), and it was rare on the sandy coastal plain of eastern and southeastern Massachusetts. Chestnut is completely absent from the witness tree data in the original eastern Massachusetts towns of Cambridge, Sudbury, Framingham, Hopkinton, and Grafton. In other words, for the first one-third of Mr. Hooker's journey from Cambridge to Hartford, there is a good chance that his company saw few if any American chestnut trees. Not until Sutton, Massachusetts, would Mr. Hooker have begun to encounter chestnuts regularly. From Woodstock to Hartford, chestnut would have been a common tree in the forest.

The Dominant White Oak

If American chestnut was not the king of Connecticut's original forest, then which tree was? The answer, interestingly enough, is Connecticut's state tree: white oak (*Quercus alba*). Connecticut's choice of white oak as the state tree in 1947 came about because a majestic white oak happened to be the tree in which Connecticut's charter was hidden from the British in 1687. Little did Connecticut's legislators know just how appropriate their choice was, for white oak composed approximately one-third of all trees in Connecticut's pre-colonial forests. From Woodstock to Hartford, Mr. Hooker's company would have traversed forests in which almost 40 percent of the standing trees were white oak, more than white oak's eight closest non-oak competitors—chestnut, hickory (*Carya spp.*), pine (*Pinus spp.*), ash (*Fraxinus spp.*), maple (*Acer spp.*), birch (*Betula spp.*), hemlock (*Tsuga spp.*), and beech (*Fagus spp.*)—combined. What made white oak so successful? It appears that white oak was not the best-adapted tree with respect to any single trait in the Connecticut environment of 1600, but white oak succeeded because it did several things really well.

Longevity. The first thing white oak did well was to live a long time—up to 600 years, which is considerably longer than most trees. Before European settlement, southern New England was a landscape in which natural disturbances such as hurricanes and tornadoes were infrequent, and forest cutting, clearance, and burning by Native Americans were generally limited to areas near settlements—and in the case of fire generally burned only the understory and not the overstory trees. In such a setting, old forests

would have been the norm, and long-lived trees would have been selected for. Observations by Henry Thoreau on perhaps the last uncut forest in eastern Massachusetts support the notion of original forests being dominated by old white oaks.

[in this uncut forest] there may be a thousand acres of old oak wood. The large wood is chiefly oak, and that white oak, though black, red, and scarlet oak are also common . . .

Seeing this I can realize how this country appeared when it was discovered . . . We have but a faint conception of a full grown oak forest stretching uninterrupted for miles, consisting of sturdy trees from one to three and even four feet in diameter, whose interlacing branches form a complete and uninterrupted canopy —*Journal entries November 9–10, 1860*

Despite white oak's longevity, hemlock (*Tsuga canadensis*) and black gum (*Nyssa sylvatica*) are even longer-lived, reaching more than 900 and almost 700 years respectively. Hemlock, however, was only a minor tree (2 percent) and black gum was rare (less than 1 percent) in the pre-colonial forests of Connecticut. Not surprisingly, these trees had other serious limitations. Black gum is close to its northern range limit in southern New England. Trees at their range limits are typically less competitive than are trees within the heart of their range. The former are therefore often limited to extreme sites, and black gum is no exception: It is mostly a swamp tree in Connecticut. Hemlock was limited by other factors. First, the tree is particular about where it grows, preferring cool, moist microclimates. Hemlock is also susceptible to several natural disturbances including fire, drought, and insect attack and has experienced severe declines over the millennia from the latter two disturbances.

Ecological versatility. In addition to being long-lived, white oak is among the most drought- and fire-tolerant trees and is not particularly susceptible to insect attacks. Drought tolerance would have been particularly important in the early colonial period, as the climate was notably drier than today and included three severe and lengthy droughts, one of which centered around the year 1635. White oak is also adapted to a range of soil and topographic conditions. Unlike chestnut's relatively specific topographical and substrate requirements, white oak was far more versatile in where it could grow. It

dominated the low-lying, sandy outwash soils of outer Cape Cod buffeted by wind and salt spray, the fine-grained and fertile glacial lake deposits of the Connecticut Valley, and the moist, cool slopes of the western uplands of Connecticut. Only in the coldest parts of Connecticut—the towns of Norfolk, Colebrook, and Hartland—and northward into the Berkshires did white oak relinquish its dominance to the more cold-tolerant beech.

Still, white oak is not the most ecologically versatile tree in this region. That distinction belongs to red maple (*Acer rubrum*). Red maple grows well in most of the conditions that white oak does, but red maple also thrives in swamps and floodplains where white oak does not venture, and red maple tolerates colder temperatures than does white oak. Yet, red maple accounted for less than 4 percent of the trees in Connecticut's original forest. Its limitations: a relatively short lifespan—only half as long as white oak—and a greater susceptibility to repeated fire and drought than white oak.

Fall germination and the passenger pigeon. A third thing white oak did well was to produce an acorn that germinated in the fall instead of the spring. Each spring, as red and black oak acorns and chestnuts were coming out of winter dormancy and preparing to germinate, 3 to 5 billion passenger pigeons (*Ectopistes migratorius*)—migrating north from their wintering grounds—would descend into their core northeastern nesting area (which included Connecticut) and feast on beechnuts, acorns, and chestnuts. Although some seed dispersal undoubtedly occurred, the pigeon's gizzard generally destroyed the seeds without dispersing them. Alexander Wilson in 1832 calculated that one large flock of pigeons could consume more than 17 million bushels of nuts per day. Because white oak germinated in the fall, the acorns became small seedlings by the time the pigeons arrived in the spring and were useless to the mast-eating birds. Indeed, it was no coincidence that Connecticut's charter oak was a white oak.

So as Mr. Hooker's company passed through the Woodstock Drumlin field, over the Tolland Range, across the Bolton ridge, and into the Connecticut Valley, they were undoubtedly passing through primarily white-oak dominated forests of large, old trees across much of the uplands. Oaks, in total, would have composed almost 7 of

every 10 trees. Hickory and chestnut would have been the most common associate trees, constituting about 9 percent and 8 percent of the standing timber respectively. During the day, large flocks of passenger pigeons were undoubtedly seen overhead or nesting in the canopies. White-tailed deer (*Odocoileus virginianus*) would have been the most common large mammal, an occasional cougar (*Puma concolor*) may have prowled near the company's herd of domestic cattle, and at twilight, the howls of wolves (*Canis lupus*) were undoubtedly heard. In wetter areas along streams and rivers and in swamps, white oak and its associates would have been replaced by red maple, white pine (*Pinus strobus*), yellow birch (*Betula alleghaniensis*), and hemlock.

Semi-Open or Forested?

The Newtown Pilgrims struck out into the almost pathless woods . . . Only a few miles from their place of brief habitation, and they were in a wilderness marked only by signs of Indian trails.

George Leon Walker, 1891, in *Thomas Hooker: Preacher, Founder, Democrat*

A lingering question about the original southern New England landscape is how much of it was actually forested. In other words, could much of Mr. Hooker and company's 1636 journey through the "wilderness" actually have been through open fields and savannahs? A number of accounts from early settlers and explorers mention the presence of sizable open areas in southern New England, particularly near the coast and along major river valleys, either cleared and planted or burned by American Indians. Did early explorers and settlers highlight, or even exaggerate, anomalous large openings in an otherwise wooded landscape (to paint an optimistic picture for potential European colonization), or did their observations of large openings actually reflect a predominant landscape condition of openness? Opinions regarding this question vary greatly among ecologists and environmental historians. Many believe the southern New England landscape was predominantly forested, but others believe it was semi-open—perhaps half woodland and half grassland—or even predominantly open. Which position is closer to the truth? A quantitative,



COMMONS.WIKIMEDIA.ORG/WIKI/FILE:PASSANGER_PIGEON_SHOOT
Passenger pigeon.

independent assessment using pollen analysis provides an answer.

Reconstructing Regional Landscapes with Pollen Analysis

Palynology involves identifying and quantifying fossil pollen from wetland sediments to reconstruct changes in plant communities over centuries and millennia. Here's how it works. When pollen is released from plants and lands on a pond or lake, the grains sink to the bottom and are incorporated year after year into the accumulating sediments. These layers of sediment remain largely undisturbed and therefore act as a natural archive of the surrounding landscape's vegetation. By extracting a sediment "core" and identifying and counting different pollen grains in these sediments, researchers can calculate the relative abundance of each pollen type and display these data alongside the corresponding age of the sediment (determined by radiocarbon and other dating methods).

Tom Webb, a paleoecologist from Brown University, examined the fossil pollen from a large number of ponds in the midwestern United States and determined the percentage of open field pollen types that corresponded to certain vegetation types (i.e., prairie, forest, or a mix of both). For example, ponds within a prairie landscape collected at least 20 percent "prairie forb" pollen (a combination of four types of weedy, open field plants) in its sediments, ponds within a mosaic of woodland, and prairie vegetation collected 5 percent to 20 percent forb pollen, and ponds surrounded by

predominantly forest vegetation collected less than 5 percent forb pollen. What do Connecticut and inland Massachusetts ponds show? Forb percentages that occur in sediments just before European arrival are less than 4 percent and in most cases less than 2 percent. After widespread European settlement, forb levels reach 5 percent to 20 percent, revealing the mosaic of open and forested land that characterized the 18th- and 19th-century agricultural landscape when 30 percent to 70 percent of Connecticut was open field. In 1636, Mr. Hooker almost certainly encountered a landscape more diverse than just a “pathless woods”—likely passing agricultural fields, clearings, and burns near Nipmuc settlements in what became Grafton and Dudley, Massachusetts, and in Woodstock, Connecticut; beaver (*Castor canadensis*) meadows and other open wetlands near streams; and perhaps recent blowdowns from the great colonial hurricane of 1635 that tracked through Rhode Island and southeastern Massachusetts. Even the intact oak forests were probably relatively open with widely dispersed trees, given their advanced age and the droughty climate of the time period. But the paleoecological evidence is unequivocal: The original landscape of interior southern New England was predominantly a forested landscape.

Landscape Change After Three Centuries

Were a traveler to retrace Mr. Hooker’s steps in 2014, without a doubt the most dramatic change she would see are the extensive paved roads and residential and industrial development dissecting the landscape. Accompanying this development is the fragmentation and overall diminishment of the forest, relative to that which occurred in the early 17th century. Although forest cover has rebounded dramatically since approximately 70 percent of Connecticut was cleared during the agricultural peak in the mid-19th century, recent deforestation has left only about 55 percent of the state in forest today, far lower than the estimated 90 percent in 1630.

Loss of Important Species

Although chestnut was considerably less abundant in the pre-colonial forests of Connecticut than is generally believed, the demise of chestnut to the Asian chestnut blight (*Cryphonectria parasitica*) in the early 20th century is certainly the most dramatic

change in Connecticut’s forest composition from 1636 to 2014. The chestnut fungus attacks the stem of larger trees but not the root systems, causing the tree to resprout, only to be killed again by the blight before reaching reproductive age. In contrast to the towering chestnuts that Mr. Hooker and company would have passed in 1636, a traveler today would see chestnut trees in miniature.

The region’s largest wild canid has also shrunk. Instead of the deep howls of wolves likely heard by Mr. Hooker and company, our 2014 traveler would hear higher-pitched, more yappy howls from the eastern coyote (*Canis latrans* “var”), half the size of its larger cousin. With bounty hunting eliminating the gray wolf from southern New England by the 19th century, the smaller coyote moved into the region from the Great Plains in the 20th century, acquired some wolf DNA along the way, and partially filled the ecological niche left by the wolf.

But perhaps the most dramatic (and tragic) change experienced by the modern-day traveler with respect to changes in flora or fauna would be the skies and tree canopies devoid of passenger pigeons—hunted to extinction by the late 19th century. Whereas Mr. Hooker and company would have potentially passed beneath roosting or nesting pigeon flocks that were hundreds or even thousands of acres in size, a traveler today wouldn’t see anything even remotely comparable in the avian world.

Alien Forest Pathogens

Unlike the chestnut blight that eliminated chestnut from the canopy in a few decades, other introduced forest pathogens arriving in the late 19th and early 20th centuries such as beech bark disease, Dutch elm disease, and white pine blister rust have had far less serious effects on their hosts in the intervening years. Neither beech, white pine, nor elm has changed significantly in abundance in Connecticut when one compares the witness tree data to the U.S. Forests Service’s Forest Inventory and Analysis data (covering trees with stems greater than 5 inches in diameter). Hemlock may be the most surprising story of all. Despite over a quarter century of exposure to the hemlock woolly adelgid (*Adelges tsugae*), approximately 1 in every 15 trees in Connecticut today is a hemlock compared with about 1 in every 60 during the colonial period. Hemlock has suffered



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WIKIFILE:AMERICANA_1920_FOREST_TREES_SHAGBARK_HICKORY

Hickory 1920.

significant declines in the past 25 years from the woolly adelgid, but other factors—perhaps increased precipitation, the loss of chestnut (which once occupied an ecological niche similar to the hemlock’s today), and fewer fires—have greatly increased this tree in Connecticut since colonial times.

Alien Trees

Although alien shrubs and herbs have proliferated in Connecticut’s forest understories, the same cannot be said for alien trees. Less than 0.3 percent of Connecticut’s standing timber is alien to the United States. These species include Norway maple (*Acer platanoides*), Norway spruce (*Picea abies*), tree of heaven (*Ailanthus altissima*), and apple (*Malus spp.*). In general, a traveler in the 2014 forest would encounter very much the same tree species that Mr. Hooker observed in 1636. The size (for example, chestnut) and the frequency at which these trees occur today relative to 1636, however, is another matter.

The Decline of Oak and the Rise of Maple

Although overshadowed by the loss of American chestnut, white oak—the true original king of the forest—has declined sixfold in modern times—reduced from 1 of every 3 trees to 1 of every 20 today. Although still locally abundant in some areas, white oak has generally faded into the background in our hardwood forests. Oaks, in general, are no longer the most abundant

trees. Whereas almost 70 percent of the trees that Mr. Hooker and his followers passed from Woodstock to Hartford would have been oaks, today oaks would number closer to 25 percent. Replacing the oaks have been red maple and to a lesser extent black birch (*Betula lenta*). Maples in total have increased from less than 4 percent of all trees in Connecticut's original forest to about 32 percent of all trees today, and most of those are red maple. Red maple *alone* is more abundant than all oaks combined. The larger oaks do, however, maintain a greater cross sectional (basal) area than maples do across the state.

Why the proliferation of red maple? Recall that red maple is the most ecologically versatile tree in our forest. In contrast to Connecticut's original old-growth forests, today's southern New England forests are on average only 80 to 100 years old, well within the 150–300-year lifespan of red maple. These forests owe much of their origin to the intensive logging that occurred in the early 20th century, but before they were logged, many of these forests grew up on abandoned agricultural fields. Again, the observations of Henry Thoreau provide insights into the increase in maple and birch:

The new woodlands, i.e. forests that spring up where there were no trees before, are pine, birch, or maple . . . But oaks, are not seen springing up thus . . . They form a sprout-land, or stand amid the stumps of a recent pine lot. (October 19, 1860)

Thoreau recognized that old fields in eastern Massachusetts generally reverted to pine, birch, or maple. In Connecticut, red cedar (*Juniperus virginiana*) often colonized old fields instead of pine, but birch and maple were still the predominant hardwood colonizers rather than oaks. Light birch and maple seeds blow readily into a forest clearing, whereas heavier oak seeds are dispersed by forest animals such as blue jays (*Cyanocitta cristata*) and squirrels, which tend to avoid pastures and old fields. Oaks are prolific stump sprouters, as Thoreau alluded to, which enabled them to fare well during the late 19th–early 20th-century period of heavy cutting. But the less-heralded red maple may be at least as prolific a stump sprouter as oak. One advantage that red maple has—as chestnut once did—over oaks is that it continues to produce viable stump sprouts at relatively large stump diameters. Data from permanent forest plots at Highstead, a 150-acre preserve

in Redding, Connecticut, seem to confirm this trend: Red maple exceeds all oaks combined in multiple-stem trees that originated as stump sprouts.

In addition to the effects of logging and land clearance, fires are actively suppressed today. Burning by Native Americans, even if concentrated near their settlements, almost certainly exceeded the extent of burning that occurs in our modern landscape since strict fire suppression was enacted in the early 1900s. Red maple has undoubtedly benefited from the elimination of this disturbance, as well as from a wetter climate that is generally more conducive to maples than to oaks. With its weaknesses (longevity and enduring fire and drought) mitigated in the modern forest and its strengths (colonizing cleared land and stump sprouting) promoted, it is no surprise that the most ecologically versatile tree has become the new dominant tree in Connecticut.

Where Is Hickory?

If chestnut was the king that never was in the original forests of Connecticut, then hickory may hold a similar place in the modern forest. “Oak-hickory” forest is considered the dominant forest type across Connecticut, suggesting that hickory is the most important species next to oak. But once again, the FIA data tell a different story. Hickory is ranked sixth in abundance behind pine, hemlock, birch, maple, and oak. Again, the root of this discrepancy may be traced to the early foresters. George Nichols in 1914 reported that oak-hickory forest in Connecticut “in many sites . . . may represent the ultimate formation.” This notion of oak-hickory as a “climax” forest type has survived to the present day so that now a forest with oak and even a small component of hickory is labeled oak-hickory. Ironically, the pre-colonial forests of Connecticut were oak-hickory, as Mr. Nichols recognized, but are believed by many to have been dominated by chestnut. Today, Connecticut's forests are often *characterized* as oak-hickory when in reality they are maple-oak-birch forests.

Tomorrow's Forests

What will the next 375 years bring? Or even the next 100 years? Higher carbon dioxide emission scenarios project that Connecticut's climate will resemble today's South Carolina climate by the end of the 21st century; lower emission scenarios over

the same time period project a Connecticut climate that resembles today's northern Virginia climate. Red maple seedlings perform especially well in elevated soil temperatures, showing that this versatile tree may be especially well adapted to a warming climate, enabling it to continue to thrive in our forests. As our forests continue to age, the longer-lived oaks may slowly begin to replace red maple; however, gypsy moth outbreaks and selective logging may continue to take their toll on oaks. Black birch will undoubtedly continue to thrive into the foreseeable future, as it is relatively long-lived (as long as 360 years) and has proven to be a successful gap-replacing specialist of disease-stricken trees like hemlock and chestnut. American chestnut could rise again, as occasional flowering chestnuts have been found, and researchers continue to work to breed a blight resistant tree. Hemlock will undoubtedly continue to decline from the hemlock woolly adelgid, particularly with increasing temperatures, which favor the cold-intolerant woolly adelgid. Cougars are expanding their range eastward and could recolonize the region in the coming decades.

These forest changes depend on Connecticut's forest remaining that—a forest. In the past 25 years, the state has lost about 7 percent of its forest area to development. “Hard deforestation”—through development—is permanent, unlike the “soft” deforestation of the 18th and 19th centuries, when woodlands temporarily became fields. Slowing development is a daunting problem. We see promising indications that landowners, land trusts, communities, businesses, philanthropists, and state and federal agencies are working to preserve forests. In the past 10–15 years, partnerships of these groups have increased by a factor of six in New England. Much uncertainty remains about the dynamics of Connecticut's future forest, but we know with great certainty what we must do to keep these forests standing.

Ed Faison has been the ecologist at Highstead, a conservation and forest research site in Redding, since 2007. He holds master's degrees from Harvard University and the University of Vermont and is a Ph.D. candidate in the Massachusetts Cooperative Fish and Wildlife Research Unit at the University of Massachusetts.

For a list of Mr. Faison's references for this article, visit ctwoodlands.org.

PEOPLE ARE AMAZED WHEN THEY SEE THE WOOD CAME FROM CONNECTICUT.
THEY JUST DON'T SEE CONNECTICUT AS THAT TYPE OF PLACE.

—Ted DeMers, woodworker



EAT, BUILD, *AND* BUY LOCAL

*In the midst of a buy-local farming movement,
UConn researches Connecticut's relationship to local wood products*

BY NATHANIEL CYRUS

I am sitting in a small basement wood shop in Willington, interviewing Everlasting Woods' owner, Ted DeMers. Mr. DeMers has built a woodworking business that specializes in using wood sourced specifically from Connecticut forests. He is embracing the diversity of locally available material by turning wood, practically from his backyard, into beautiful and unique custom furniture pieces. "I like to use the term 'artistic furniture.' It's a combination of domestic, locally grown woods, which have a refined, rustic, earthy feel to them." He strays from the conventional by including interesting plants that you would be hard-pressed to find in the imported furniture available at IKEA. He uses mountain laurel, the Connecticut state flower, for its knotty and twisted stems as a quirky alternative to conventional table legs.

"Twenty years ago when I was building furniture, I would have to go through every piece of lumber and make sure there were no imperfections in it," he said. "Everything was clean and clear. Now if it doesn't have a knot or imperfection or knobby little thing on it, it doesn't work."

Mr. DeMers was the 38th woodworker I interviewed for research conducted in the fall of 2012. I was a graduate student at the University of Connecticut focusing on the connections between "buy local"

agricultural movements and the Connecticut wood products industry.

Most of us know that Connecticut is in the midst of a local food movement known here as Connecticut Grown. Hundreds of farmers' markets, farm stands, and supermarket items claim to be local. But what does local mean and why does it matter to us? Although there is no universal definition for the term *local*, most of the existing research agrees on three major benefits to buying goods produced close to home: increased community cohesion, regional economic stimulus, and environmental benefits. Common sense tells us that visiting farm stands and local craftspeople connects us to our neighborhoods by introducing us to the people who help provide for us. As consumers, we are investing money into our local economies while participating in an agricultural tradition Connecticut Yankees have enjoyed for hundreds of years.

But there are environmental benefits too. The most obvious is reducing greenhouse gas emissions by shortening the distance between the producer and the consumer. Another benefit can be seen within the pastoral landscape that makes Connecticut an amazing place to live. When we choose to support local agribusiness, we are essentially paying property owners to keep their land undeveloped in one of the most expensive real estate markets in the country.

Between 1985 and 2006, Connecticut lost nearly 40,000 acres of farmland to other land uses, approximately equivalent to the area of Hartford, New Haven, New Britain, and New London combined. During the same period, 111,872 acres of forest were lost, nearly triple that of the farmland. Although it might seem that buying local wood products works against saving our forests, lumber is an agricultural product just like your local apples. Through buying sustainably harvested local wood, we can help forest landowners to make enough money to keep their forests instead of selling the land for a new housing subdivision. According to a 2012 U.S. Forest Service report, 72 percent of Connecticut's forests are held privately and are therefore vulnerable to this kind of development pressure.

One way regular citizens can help maintain our forested landscape is to buy products made with sustainably harvested, Connecticut-grown wood. This is where the state government has provided some help. In 2011, the Connecticut Department of Agriculture and the Department of Energy and Environmental Protection expanded the popular Connecticut Grown label to include wood that has been harvested and milled within Connecticut from forests that are protected from development. Now consumers can ask for this certification and promote its use through increased demand. The Connecticut Grown label also applies to the woodworkers who can prove their materials are sourced from wood meeting this criterion. Unfortunately, there has never been any formal investigation into the wood product industry's attitudes and opinions regarding local wood. What is the definition of *local wood*? Do Connecticut woodworkers use local wood? Do they prefer it? Is there a market for it? My job was to ask a lot of questions and get a lot of answers.

Because little is known about the attitudes and opinions regarding local wood, I decided to conduct in-depth interviews with Connecticut woodworkers from across the state. This type of qualitative research is the most effective way to generate new theories, better understand specific social phenomena, and provide guidance for state buy-local efforts. Interviewees in the sample represented woodworking firms and sawmills of

various sizes and specialization. The businesses ranged from small wooden boat builders to large sawmills and even to Connecticut's only wooden coffin maker. These discussions addressed personal definitions of *locally grown*, and their attitudes and opinions regarding wood grown in Connecticut. After all was said and done, the 38 interviews produced some interesting and repetitive themes that may help explain why local wood has not enjoyed the success that local food has had in recent years.

Before any discussion took place, all study participants were asked to personally define the term *local*, with regard to wood products. This proved to be the hardest question for most interviewees. Although your neighbor-



hood farm stand is easily considered to be local, wood is a far more tricky business. It's relatively easy for farmers to grow several rows of sweet corn, process the ears, and sell them in front of their houses. Wood, however, requires specialized processing at a regionally located sawmill that prob-

ably does not track the origin of any logs coming in. For instance, white pine from Connecticut is often shipped to Canada to be milled and then might return to lumber yards in New Hampshire, Pennsylvania, or even Connecticut!

So what do woodworkers consider to be local wood? A majority of participants in my study consider the northeastern United States to be local because there are few methods of determining the exact origin of their material. Woodworkers use their knowledge of tree species distribution and consider woods that could be found in their backyard to be local.

The participants directly identified four major barriers to the inclusion of Connecticut-grown wood into their current manufacturing processes: expense, low visibility, limited demand, and limited availability. Many woodworkers believed that Connecticut wood was not only more expensive than imported wood but that it also took more time for them to make it into something of acceptable quality. One small-scale woodworker articulated the sample's sentiment: "You see this stuff is 'factory made' in the Philippines . . . The materials [there] are more expensive than the people, and the

materials are cheap. And you're in competition with that. It's painful."

It is obvious that local wood products are not a visible part of the Connecticut brand. Although some states such as Vermont and New Hampshire cultivate a rustic wooden image, Connecticut is not considered a destination for artisan furniture or other recognizable wood products. This is the point Mr. DeMers makes in the quote at the beginning of the article. Many customers are not well educated on the tree species of Connecticut and therefore do not share in the pride of local wood. Take Connecticut red oak, widely believed to be the superior choice in hardwood flooring. Why don't Connecticut people know about it?

The final concerns woodworkers had were about supply and demand. Because customers are not demanding local wood, the supply is low. Luckily, there are some notable exceptions. Sawmills such as E. R. Hinman and Sons in Burlington are providing certified Connecticut Grown wood to the general public through their own retail operation. They expressed optimism about the future of locally grown wood and boasted an increased demand since opening their shop only several years ago. Much of the demand for local wood comes from woodworkers, some of whom I interviewed in the course of my research. When sawmills like Hinman do well, competitors take notice and the supply of this Connecticut Grown material increases.

The modern globalized world is a complicated place. How can buying wood help to save trees? Sometimes the simplest answer is the best. When consumers buy the things they need closer to home, the whole community wins. Maybe if we purposefully seek our floors, firewood, cabinets, kitchen utensils, buildings, boats, toys, and tool handles like we do with our local apples, we can learn to appreciate the true character of Connecticut.

For more information on Connecticut Grown wood products or on the status of current University of Connecticut Buy Local research, please contact UConn Extension Professor Thomas Worthley at Thomas.Worthley@uconn.edu.

Nathaniel Cyrus is a recent graduate of the master's degree program in the University of Connecticut's Department of Natural Resources. This article is based on his master's thesis.

WESCFPA

Meet CFPA's Wesleyan student partners

At the Connecticut Forest & Park Association, we are always thinking about what we can do to help grow the future leaders of conservation in Connecticut. That is why CFPA invited the leaders of the Wesleyan University affinity group known as WesCFPA to both gain experience and contribute their creative energy to CFPA's Board of Directors during the past four years. During the past two years, we have been inspired by the board service of outgoing WesCFPA coordinator Miranda Linsky. Now we welcome the incoming co-coordinators for WesCFPA, Erin McGrath and Jed Siebert.

WesCFPA works with CFPA to maintain the trails of Highlawn Forest (located behind CFPA's headquarters). During the winter, WesCFPA also manages events such as film screenings, exhibitions, lectures, and festivals to promote environmental conservation. Through a partnership with the North End Action Team, a consistent group of WesCFPA members bond with children in the community by hiking trails together throughout the state. Visit the WesCFPA Facebook page at facebook.com/WesCFPA to learn about upcoming events and see their beautiful photos!

Erin McGrath is a rising junior at Wesleyan University studying earth and environmental science and biology and is interested in insects and ecology. At Wesleyan, she is a student DJ at WESU, the school-affiliated radio station, is an active member of the Outing Club, and beekeeps at the campus farm. She is from San Diego, California.

Jed Siebert is a rising junior at Wesleyan University. He is studying biology and environmental science, and he plans to go to forestry school after he graduates. He volunteers on the campus farm, his favorite color is fern green, and he loves to play banjo. He also is a member of the Wesleyan steel band ensemble, WesleyPan. Jed was born in Stamford, and he likes to note that he has never been to Iceland.



Miranda Linsky



Erin McGrath



Jed Siebert

FAREWELL LESLIE LEWIS

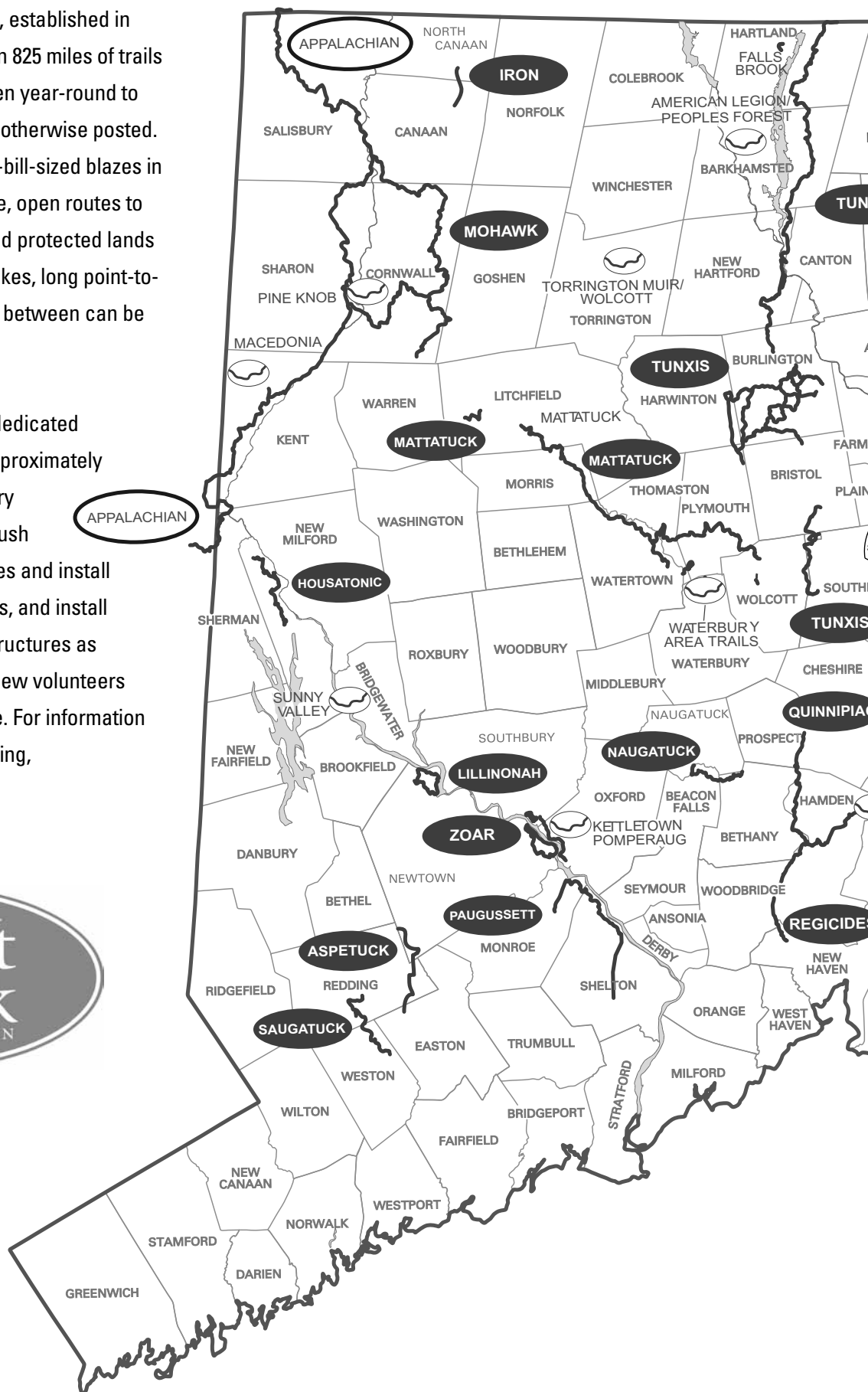
Leslie Lewis has retired after seven years as director of the Connecticut Forest & Park Association's WalkCT program. WalkCT promotes walking and other enrichment opportunities on Connecticut trails, pathways, and sidewalks.

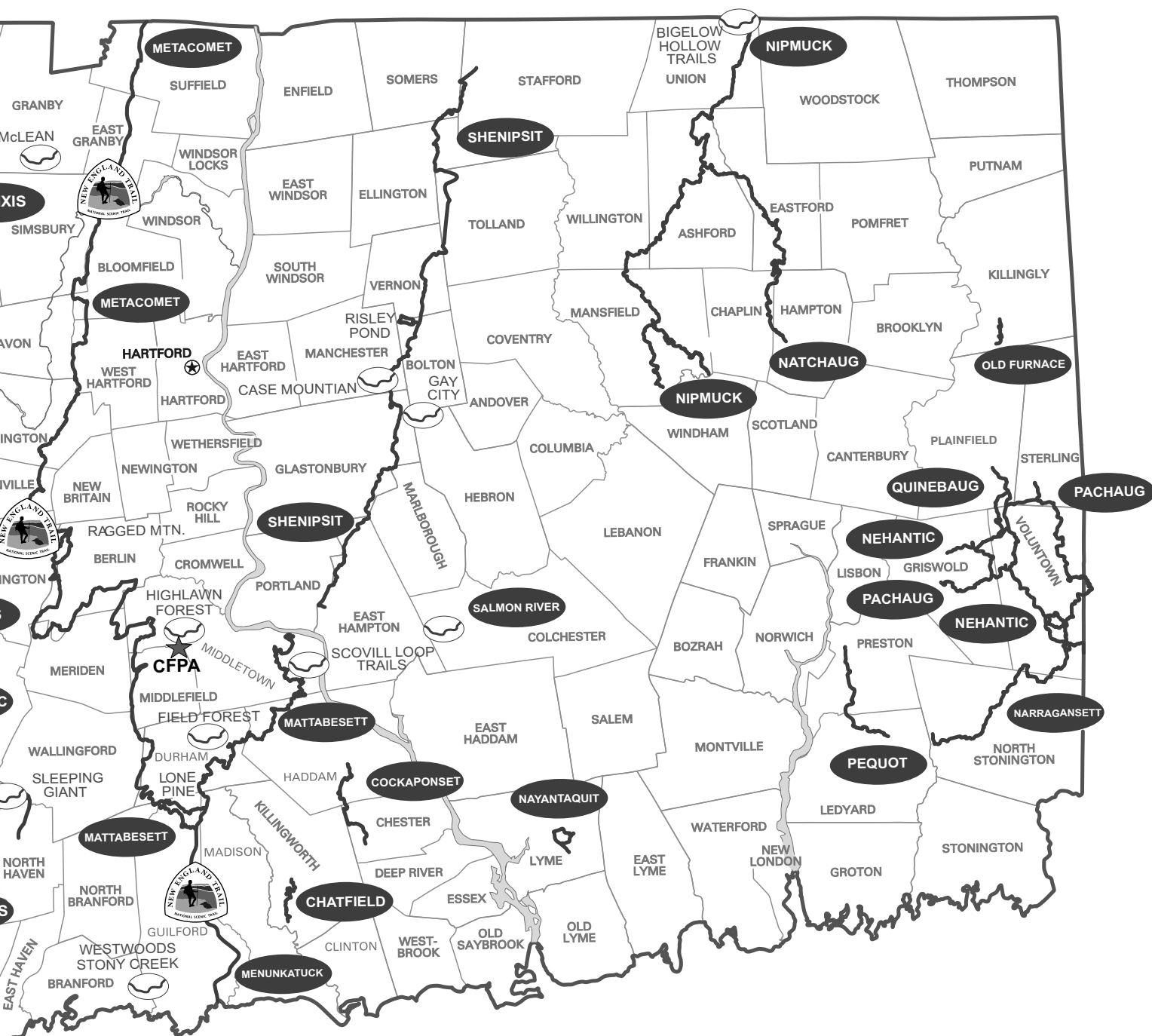
Prior to coming to CFPA, she was employed by the Connecticut Department of Environmental Protection (now DEEP) for 29 years, helping with the implementation of the Bottle Bill, preparation of municipal recycling and waste guidelines, and development of the DEP's 2000 environment plan.

From 1997 through April 2007, she served as DEP's trails and greenways coordinator, responsible for grants, state-wide trail planning, and technical assistance. CFPA thanks Mrs. Lewis for her dedication and good work throughout her career and at CFPA.

The Blue-Blazed Hiking Trails, established in 1929, currently total more than 825 miles of trails in 88 towns. The trails are open year-round to all forms of foot travel unless otherwise posted. The trails, marked with dollar-bill-sized blazes in a signature shade of light blue, open routes to exploring the open spaces and protected lands of Connecticut. Short loops hikes, long point-to-point hikes, and everything in between can be found on the Blue Trails.

The trails are maintained by dedicated volunteers who contribute approximately 20,000 hours of trail work every year. Trail volunteers clear brush and downed trees, paint blazes and install signs, coordinate work parties, and install bridges and additional trail structures as necessary. CFPA welcomes new volunteers to help with trail maintenance. For information about the trails and volunteering, see ctwoodlands.org.





CONNECTICUT'S BLUE-BLAZED HIKING TRAILS

INTERACTIVE BLUE TRAILS MAP ONLINE

<http://www.ctwoodlands.org/BlueTrailsMap>

Whether you're a devout hiker of the Blue-Blazed Hiking Trails or a walker looking for a local escape, the Connecticut Forest & Park Association's new online trails map will help you plan your outing before your boots hit the ground. As a companion tool to the *Connecticut Walk Book*, this map will allow you to zoom in and see the latest trail locations, learn trail names and distances, and fully discover all that Connecticut hiking has to offer.

THE UNINVITED BEETLE

Now that the emerald ash borer is here, the strategy is to hold it back

BY DANIEL CANDELLA

Two years ago, an alien species descended into the Connecticut forest. Its destination: the canopy of the ash tree. So far no one has found a defense to halt the invasion.

"All we can do is slow the spread; we cannot eliminate it," said Dr. David Wagner, a research professor for the Department of Ecology and Evolutionary Biology at the University of Connecticut.

The culprit is an invasive species from Asia, *Agrilus planipennis*, the emerald ash borer. It was first detected in Connecticut by staff members from the Connecticut Agricultural Experiment Station in the town of Prospect on July 16, 2012. By then, it had been in North America for a decade.

The EAB (as it is sometimes called) is a small, green beetle that belongs to a large family of beetles known as the *Buprestids*, or metallic wood boring beetles, and feeds strictly on ash trees. These beetles eventually kill the ash trees by destroying the water- and nutrient-conducting tissues under the bark.

Hitched Rides in Shipping Containers

These shiny green beetles first arrived in North America in 2002. Like nomadic travelers hitching a ride, the emerald ash borers clung to packing materials inside shipping containers that arrived in southeastern Michigan, near Detroit. Eventually the ash borers migrated outward south to Ohio, then east, eventually affecting Connecticut and our neighbor Massachusetts in the summer of 2012. The latest discovery in the fall of 2013 in Colorado indicates a progression westward. Altogether 21 states have been affected.

Ash trees, which make up 3 percent of the forest, probably will drop to well under 1 percent, according to Dr. Claire Rutledge, an assistant scientist and entomologist for the

Connecticut Agricultural Experiment Station.

The biggest threat to the future of the Connecticut forest is the loss of biodiversity. The less diverse a forest is, the less it tends to thrive. Ash trees are also an important part of the lumber industry in Connecticut for the use of firewood.



HOWARD RUSSELL, MICHIGAN STATE UNIVERSITY, BUGWOOD.ORG

Emerald ash borer (Agrilus planipennis) on a penny.

Ash trees are also home to 46 types of important arthropods such as spiders, worms, moths, and butterflies. These insects are host-specific to the ash—when the tree dies, so will they. This grim prediction almost certainly will come true. State officials, research professors, and scientists all agree that the eradication of the emerald ash borer is highly unlikely and that the attempt to keep the population under control is the only option.

"The only way to do that is to find a natural predator for the insect you want to manage," Dr. Wagner said.

State forest officials and scientists at the Connecticut Agricultural Experiment Station favor combating "fire with fire," said Dr. Wagner, by using another invasive species to manage the population of the emerald ash borer.



DEBBIE MILLER, USDA FOREST SERVICE, BUGWOOD.ORG

Emerald ash borer adult feeding on an ash leaf.

The Connecticut Agricultural Experiment Station released 13,000 stingless parasitoid wasps, native to China, *Tetrastichus planipennisi*, between May and November of 2013 in the towns of Prospect and Middlebury.

"These things are like aliens," Dr. Rutledge said. She compared the wasps' unique dining habits to the 1979 science fiction/horror film, *Alien*. One of these wasps stings its victim—the emerald ash borer—paralyzes the insect, and injects its eggs into it. Using the emerald ash borer as a surrogate, the eggs grow and eventually erupt with tiny wasps emerging.

"There were some stumbles early on in the practice of biological control," said Dr. Rutledge. Scientists debated whether to use another invasive species to attack the beetles. Would that cause more havoc? The key, they realized, to slowing the spread of emerald ash borer is finding a species that is host specific—that is, would attack only the emerald ash borer.

"You don't want an insect that's too smart and finds another beetle more tasty," Dr. Rutledge said.

Using Wasps as Spies

Another way the state detects and manages the spread of emerald ash borer is by using other insects to track the invader, a process also known as biosurveillance. A program called Wasp Watchers uses biosurveillance as the primary tactic for detecting emerald ash borer in a specific location. Dr. Rutledge and other trained observers, many of them volunteers from the UConn's master gardener program, participate.

Like a spy conducting reconnaissance, the

continued on page 27

WORKING WITH THE LAND

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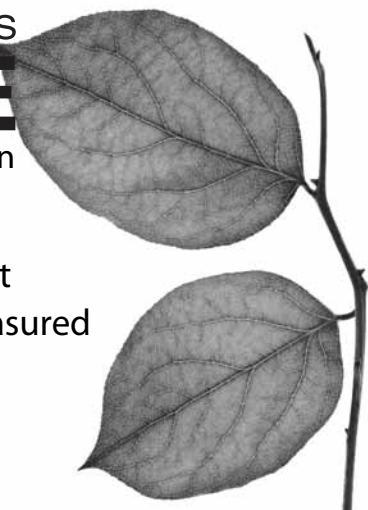
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BY MASCHAL MOHIUDDIN

Come one, come all to the auction of a beautiful two-mile shoreline beach with 660 campsites popular with tens of thousands of Connecticut residents at Hammonasset Beach State Park. This public gem will be sold to the highest bidder.

That may sound outlandish, but according to a recent report, the state might as well stick “for sale” signs on most state parks and forests in Connecticut. Despite the commonly held assumption that these lands are permanently protected, they are not.

“The typical person in Connecticut thinks that a state park is protected for all people for all time,” said Karl Wagener, executive director of the Council on Environmental Quality. “They are incorrect in that assumption.”

Eric Hammerling, executive director of Connecticut Forest and Park Association (publisher of this magazine), agreed. “Our organization assumed for a long time that if something was designated as a state forest, that it was protected. We are finding more and more that is not the case.”

The recent report by the CEQ details several proposals during the past three years to transfer or exchange state land. The report said that Connecticut residents are in danger of losing some of their most treasured public property, including state parks and wildlife areas. Currently in Connecticut, the process of submitting and reviewing these proposals is flawed, according to the report. There is a lack of accurate information about the lands at the beginning stages of the review process and a lack of permanent protections for Connecticut’s state lands that leaves them vulnerable, even though the public assumes such lands to be permanently protected. The report offers several solutions, including following the model in New York state, where state lands are permanently protected.

Haddam Riverfront Land Almost Sold in 2011

One example of a property exchange that came close to occurring was the Clark Creek Wildlife Management Area in Haddam that the state nearly sold in 2011. The state bought it in 2003 for what it described as “high priority recreation,” including as a fishery and for conservation.

The Clark Creek Wildlife Area is 17 acres, and it literally encompasses the Riverhouse at Goodspeed Station, a private upscale banquet facility. The Riverhouse owners hoped to create a destination for tourists by expanding and adding lodging facilities. The land rolls downhill until it reaches the banks of the Connecticut River. The owners described the state property as a former sandpit, full of shrubs.

Although the Riverhouse owners said that the surrounding state land looked ordinary, looks can be deceiving. The Connecticut

FOR SALE

YOUR PARKS AND FORESTS?

The Council on Environmental Quality details, in a surprising report, several proposals during the past three years to transfer or exchange state land, including state parks and wildlife areas. What’s going on?

Department of Energy and Environmental Protection did research and concluded that at least 40 birds relied on the shrubland for breeding. Both DEEP and the CEQ asked the Riverhouse to exchange about 90 acres of upland forest area for the 17 acres of riverfront land the state owned. They said the two parcels’ values must be equal. The deal eventually fell through when appraisers estimated that values of the two parcels of land were not comparable.

The market value of the state property was an estimated \$1,780,000, while the property being offered by the Riverhouse had a market value of \$490,000, a difference of almost \$1,300,000.

Mr. Hammerling pointed out that even though the Haddam deal fell through, the state had authorized the sale. This means that if someone else had stepped in to pay the difference between the two property values, the wildlife area could have been sold and relinquished as a state-protected land, he said.

Other Park Sale Proposals

This is not the only time recently that state land has been for sale. Proposals for developments have included eight acres of Hammonasset State Park for use in an adjacent park in Madison, land from Meshomasic State Forest for a firearms training facility, and 140 acres of Nipmuck State Forest for a wind energy facility. The proposals were rejected in two of those instances because of public and environmental concerns, but the Madison sale went through.

Dennis Schain, the communications director at DEEP, said that the state takes different approaches to how it protects public land. “As you peel away the onion, various pieces of state land are protected in various ways, and some more than others,” he said.

Mr. Hammerling focuses on the community’s role in this process. “A lot of it boils down to public trust in state lands and public trust in government,” he said.

The CEQ offered nine recommendations. One is the need for a clear and unified proposal review process that includes brief information about the property’s history, conservation purposes, general management plans, and natural resources. According to the report, the purpose of a cohesive procedure is to determine early whether the property is just unused land or if it has conservational purposes.

Another recommendation is preserving land for perpetuity. In other words, all future land purchases by the state for conservation use should be ensured permanent protection in the deed.

Some of the recommendations would require legislation and even a state constitutional amendment. The purpose of these recommendations is twofold: to get important information about the protected state land in question to the front end of the decision-making process

and to protect state lands that are supposed to be “preserved.”

The CEQ report also highlighted the New York system for protecting its state forests and parks as a model. The New York state constitution includes a “Forever Wild Clause” for the Adirondack and Catskill regions:

The lands of the state, now owned or hereafter acquired constituting the forest preserve as now fixed by law shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed.

John Sheehan, director of communications at Adirondack Council, said, “Using a word like forever doesn’t ever happen. Even in marriage we have ‘till death do us part’ as a clause.”

Mr. Sheehan said this clause in the New York state constitution is the strongest forestland protection law that he is aware of. The amendment was a reaction to the intense deforestation and pollution that had been taking place in the Adirondacks in the 1880s.

To challenge the Forever Wild Clause in the constitution by selling land, two separately elected legislative approvals are needed as well as a voter authorization in an election. There has never been a successful attempt to alter the forever nature of the clause.

However, if land from the Adirondack and Catskill regions is needed for public health or safety reasons, a separate amendment can be proposed to take that piece of land out of the forest reserve. Special provisions still must be met for swapping lands for this limited purpose.

One swap occurred in 2007, when the town of Long Lake needed an underground water supply and reservoir.

“The Forever Wild Clause has protected over 3 million acres of forest, some of which has never been cut, and the remainder that has been cut is proceeding toward old growth status,” Mr. Sheehan said.

Rocci Aguirre, Adirondack Council’s conservation director, said the New York preservation system works. “People here understand really well how hard and complex it is for land swaps to happen in the Adirondacks,” he said.

In Connecticut, public awareness of the state system of conservation of parks and forests is key, according to the CEQ report. The current system belies public expectations, and it has the potential of harming public trust. The report concluded that residents truly believe that state lands and wildlife areas are protected forever, even if the Connecticut law says otherwise.

Mr. Wagener said that the public needs to be more aware of how quickly it can lose state “protected” land. As we went to press, the state legislature passed two bills related to this controversy. One, Senate Bill 70, affirms the state agricultural and environmental departments’ authority to protect public lands, and calls for an online registry showing which public lands are legally protected.

But House Bill 5550 legalizes the sale of eight small public parcels, the most significant of which is under three acres of Peoples State Forest for the town of Barkhamsted to build a senior center.

Maschal Mohiuddin will be a seventh-semester senior beginning this fall majoring in biology and journalism at the University of Connecticut.



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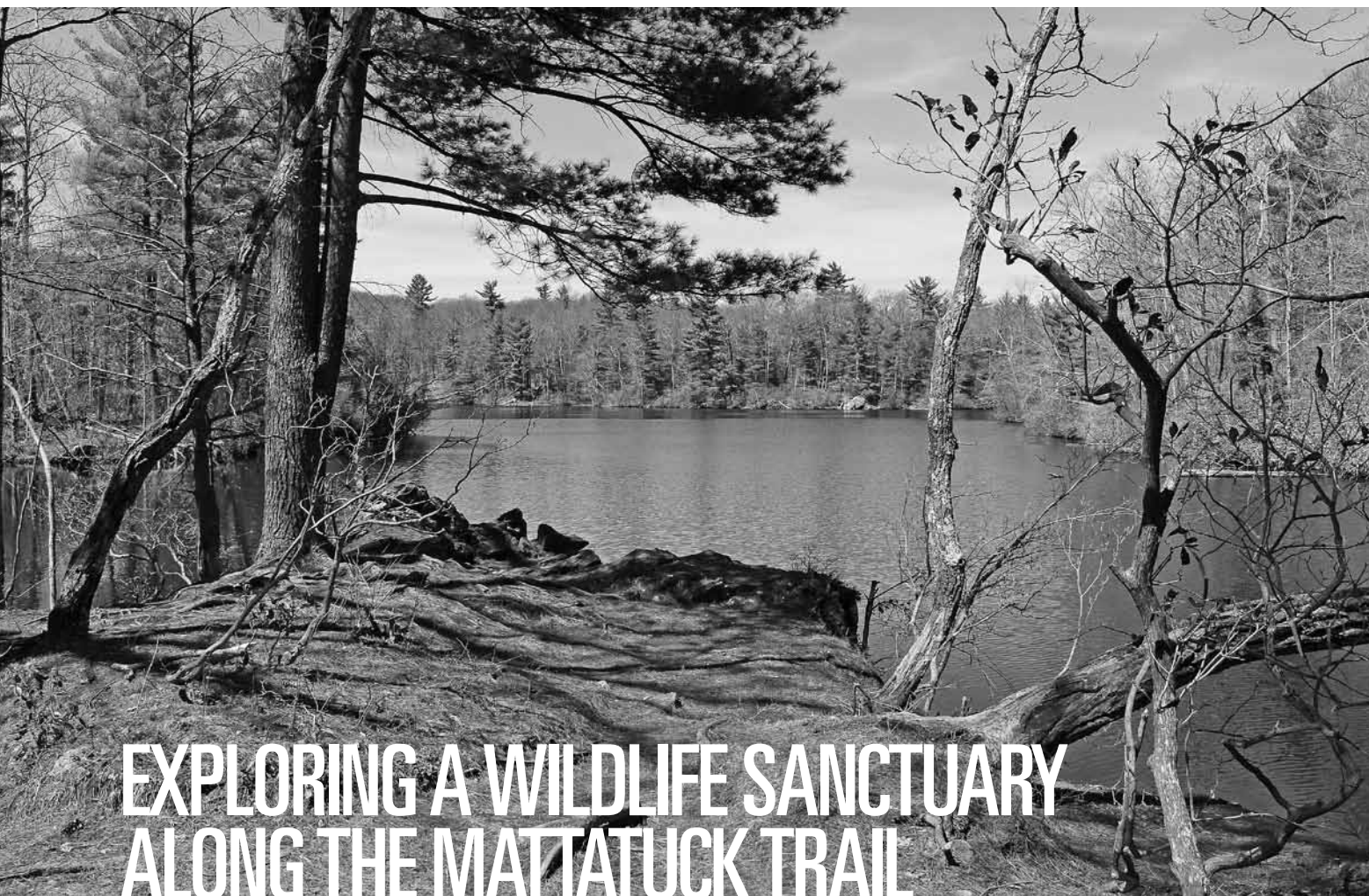
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EXPLORING A WILDLIFE SANCTUARY ALONG THE MATTATUCK TRAIL

BY DIANE FRIEND EDWARDS

A spit of land provides a perfect place to view Beaver Pond along the Mattatuck Trail at the White Memorial Foundation.

DIANE FRIEND EDWARDS

“I’ve always thought this is one of the prettiest spots in White Memorial,” my husband, Paul, told me as we paused at the shoreline of Beaver Pond. Standing on a small point of land jutting into the pond, I had to agree. Set amid a mixed forest of evergreens and deciduous trees, the spot exuded serenity. A pair of mergansers made their way across the pond, while a gentle breeze rippled the water’s surface. The only sound was the bubbling of water trickling over rocks below the low stone dam to our left.

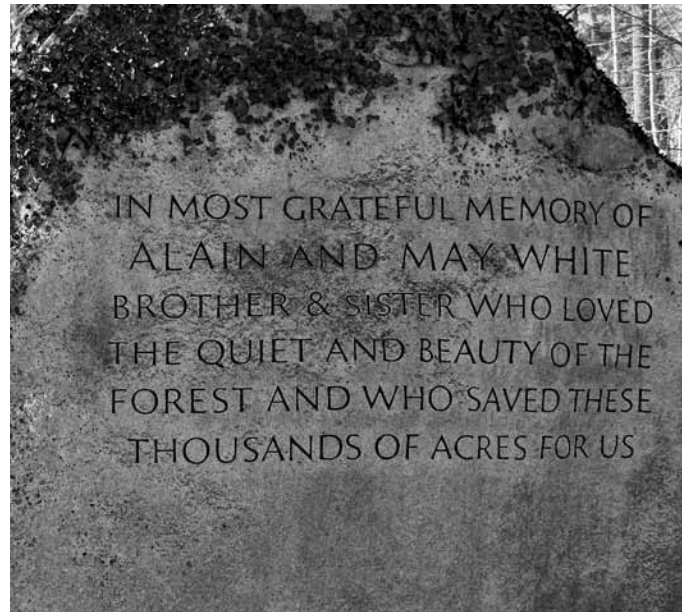
On that April day, we were following the Blue-Blazed Mattatuck Trail, 6.3 miles of which meander through White Memorial Foundation, a 4,000-acre wildlife sanctuary in Litchfield and Morris. Although the sunshine felt warm, the ground was still cold and damp from recently melted snow, so we resisted the impulse to sit for a while. But come summer, I knew from previous visits, this will be a perfect place to sit and enjoy the ambience.

The White Memorial segment of the Mattatuck

Trail is a good choice for a summer hike. For the most part, it winds through a shady forest of hardwoods interspersed with stands of towering pines and hemlocks. Along the way, it passes several lovely ponds and crosses the Bantam River, which it follows for a short distance. Although the terrain is moderately difficult near the southeastern end of the hike, most of it is gentle enough for a leisurely stroll. Several access points allow you to vary the length of the hike. (Note: One of the access points identified in the *Connecticut Walk Book West*, on Isaiah Smith Lane in East Morris, is no longer open to the public. There are “No Parking” and “Private Property” signs.) And the foundation’s property includes an extensive network of trails, some of which intersect with the Mattatuck, making loop routes possible. (Note: On White Memorial Foundation maps, the Mattatuck Trail is indicated by the letter “M.”)

The Hike

The Mattatuck Trail cuts across White Memorial diagonally from southeast to northwest, with many



DIANE FRIEND EDWARDS

Left, a hiker stops to enjoy the view of the Bantam River from a bridge along the trail. Right, a memorial boulder honors Alain (1880-1951) and May (1869-1941) White, a brother and sister who preserved 4,000 acres in Litchfield as the White Memorial Foundation. The boulder lies off the Mattatuck Trail near Plunge Pool.

twists and turns along the way. You can hike the trail in either direction, but we started where the *Walk Book* said to: at the end of Slab Meadow Road in East Morris, outside of White Memorial. From the parking area, walk down the dirt road (Pitch Road) for about 150 yards to the trail crossing. (Note: *The Walk Book* mentions a water company gate, which is no longer there.) Turn left to follow the Blue-Blazed trail uphill, entering White Memorial property—indicated by a “Wildlife Refuge” sign on a tree—0.4 mile from the start of the hike.

The trail continues winding up and down, passing near boulders and stone walls and crossing occasional wet areas. (We saw several vernal pools—temporary pools formed by snowmelt or rain—which usually dry up by summer.) At 0.8 mile, you will reach Beaver Pond. Enjoy the view, then cross the dam and a spillway. Keep following the trail as it skirts the western side of the pond and continues generally northwestward, now and then making a hairpin turn to veer in another direction.

Two miles from the start of the hike, you will see a large stone memorial off the trail to your left. The memorial honors Alain and May White, the brother and sister “who loved the quiet and beauty of the forest and who saved these thousands of acres for us”

by turning their family estate into the White Memorial Foundation 101 years ago.

Your next notable discovery will be a guardrail of sorts, made of stone piers and a metal wire, overlooking Plunge Pool. Look but don’t leap! In another half-mile or so, you will pass below the dam that forms Heron Pond on your left. Continue on a woods road to Route 63, where—keeping a watchful eye on traffic—you turn left to follow the road a short distance, then cross to a dirt parking area on the other side of the road. (This is the hike’s approximate halfway mark. If you don’t want to do the entire 6.3 miles, you could leave a car here and make this the end, or beginning, of your route.)

From the dirt parking area, walk past the gate and trailhead map to head back into the woods. The rest of the trail follows easy terrain. You will cross the slope of Spruce Hill, walk along a raised roadbed through Cranberry Swamp and past Cranberry Pond, and cross a dirt road (Webster Road) before entering Catlin Woods, a mixed forest with many large white pine and hemlock trees, as well as oaks, maples, and birches. About 5 miles from the start of the hike, you will cross paved Whites Woods Road. Soon you will reach the Bantam River, which the trail parallels for a short distance, then crosses via an iron bridge. The trail then parallels the other side of the river, following a dirt road.

After crossing another paved road (Bissell Road), you will head north and then west, passing Duck Pond before reaching the end of the hike back at Bissell Road near the main entrance to White Memorial.

Directions

To Slab Meadow Road parking: From the junction of Routes 109 and 63 in East Morris, go east on Route 109 for 0.3 mile. Turn left onto Slab Meadow Road and follow it 1.2 mile to where the pavement ends.

To Bissell Road trailhead (limited parking): From the junction of Routes 202 and 209 in Bantam, follow Route 202 east 1.3 mile. Turn right onto Bissell Road (by White Memorial entrance) and go 0.1 mile to trailhead on left.

Take Time to See the Nature Museum

White Memorial has a wonderful natural history museum with dioramas and interactive displays, located in the White Memorial Conservation Center at the end of Whitehall Road, the main entrance road. For more information, visit whitememorialcc.org.

Diane Friend Edwards is a writer, photographer, and lifelong lover of the outdoors. She lives in Harwinton with her husband, Paul.



[HTTP://EN.WIKIPEDIA.ORG](http://en.wikipedia.org)

GRUNTS, SLUMPS, AND COBBLERS

Cooking with blueberries, New England natives

BY JEAN CRUM JONES

When summer comes, my mind turns to thinking about fixing grunts, slumps, and cobbles with our delicious farm berries. These quaint, whimsical names define dishes that are true New England originals developed by Colonial American women. These fruit-rich creations were based on favorite English recipes for steamed puddings and pies that were modified by the available native food-stuffs and the limiting circumstances found in America. There is no way to identify the precise time or persons who developed these classic recipes. Most traditional cooking innovations were spread by word of mouth.

When British navigators first explored New England in the early 1600s, they noted the abundant patches of strawberries, cranberries, gooseberries, huckleberries, grapes, and currants growing wild on our shores.

They also observed the Native Americans eating plentiful amounts of the wild fruits, fresh from the vines.

At that time, the British believed that eating fresh fruit was unhealthy. This opinion dated to the time of ancient Greek physician Claudius Galen, who believed that food was converted to blood. Seventeenth-century medical texts indicated that fresh fruit would cause blood to putrefy. So the new settlers ate moderately from the abundant ripe supply. The British Colonials would not eat the fruit until it was cooked. Most of the found fruit they dried for steamed bread puddings or minced meat compounds.

These people were used to the milder-flavored sweet apples of Britain. Soon, young apple and pear orchards were being established from seeds and stems brought from England. Connecticut's soil and climate were exceptionally well suited to apple orchards. The trees produced a higher-quality,

better-flavored fruit than could be grown in their homeland.

It Slumped and Grunted on the Plate

New England housewives devised a number of new dishes made with apples, huckleberries (known as blueberries in their cultivated form), and some of the other common berries. The women steamed the fruits, sweetened them with molasses, honey, or maple syrup, and topped them with dough in a deep pot covered with a tight lid and suspended over the fire. It baked until the fruit was tender and the topping dumpling-like. Thick cream, if available, was poured on top, when served. They called these dishes "slumps" and "grunts." A slump just seemed to collapse on a plate after it was dished out. A grunt—which is made the same way as a slump but often steamed in a metal mold within the pot—may have earned its name from the sounds made after it was finished

cooking. As steam escaped, the dough emitted a grunt when it was unmolded.

When a fruit and biscuit topping were cooked in a dish placed in a fireplace oven, it might have been called a “cobbler” because of the cooked appearance of the crust, which resembled cobblestones. Another popular dish, cooked in the fireplace oven, was the “pandowdy”—meaning to chop. The housewife would bake the fruit dish until the pastry crust on top began turning crisp and golden. Then, she would take it out of the oven and “pandowdy” or chop the crust into the fruit in large pieces, bake it a little longer, and then serve it with a cream sauce. Later on, as sugar from the Caribbean became more available and affordable, cranberries and strawberry-rhubarb mixtures became popular.

Originally, these juicy dishes were served as the main course for breakfast or at any other meal as an accompaniment with the other main dish. It was not until later in the 19th century that they became identified as desserts. As sugar became more available, the fruit and pastry dishes became sweeter, and the Victorians began arranging lunch

and dinner meals in courses, ranging from savory to sweet.

Pies

Another popular dessert associated with New England is fruit pie. In English yeoman households in the sixteenth century, enclosure in a pastry shell was the most important way of preparing fruit. The belief was that the more thorough the cooking, the more the threat of sickness from fresh fruit would be minimized. When the original settlers came from Britain, they planted wheat, the grain mainstay of their diet, so they could produce bread and pastry for pies. Alas, Connecticut was plagued by three invasions that destroyed the initial successful wheat farming in our state: black stem rust (1660s), Hessian fly (1780s), and wheat midges (1830s). Culinary historians believe that our pie adaptations of slumps, grumps, cobbles, and dowdies developed because flour was scarce. The colonists adapted to eating “rye and injun” (corn) bread in place of wheat bread.

After the opening of the Erie Canal in 1825, wheat flour was more easily available in our region. That, along with improved

kitchens and cooking equipment, helped pie become the quintessential New England food. During the days before Thanksgiving, housewives reportedly made batches of 70 to 100 pies at a time—apple, pumpkin, mince, and others. The pies were put in pie cabinets in a cold room where they would freeze and then be available all winter long.

Apple pie took over as a regular part of the New England breakfast for nearly 100 years. When I worked as an administrative dietitian at the Yale University Dining Halls, I studied some of the menus from the 1890s and noted that apple pie was on the menu every morning and, often, at dinner, too.

But the common expression “as American as apple pie” is a misnomer, in my thinking. We should really go farther back in our history, too, exclaiming that a true American is “as American as blueberry cobbler.” Let’s go back to our New England culinary roots this summer and enjoy some old-fashioned, native desserts or breakfasts.

Jean Crum Jones is a registered dietitian who helps run the Jones Family Farms in Shelton with her family.

Connecticut Blueberry-Peach Cobbler

Blueberries and peaches ripen at the same time on Connecticut farms and have a natural affinity for each other. Try this delicious old-fashioned farm recipe.

TO PREPARE FRUIT: Heat gently until simmering 1 cup fresh blueberries; 1½ cups fresh sliced ripe peaches; 3 tablespoons brown sugar; ¼ cup water and 2 teaspoons cornstarch combined. When thick, add 2 tablespoons butter; 2 teaspoons fresh lemon juice; 1 teaspoon lemon zest. Place in 1-quart glass baking dish.

FOR THE COBBLER CRUST: Sift together 1 cup flour; 1½ teaspoons baking powder; ½ cup sugar; ¼ teaspoon salt in a bowl. Then cream ¼ cup butter with 1 egg and 1 teaspoon pure vanilla extract. Beat in ½ cup buttermilk, add flour mix, and beat until just smooth. Drop the topping in large spoonfuls over

the fruit (the “cobble” will melt together in the oven). Sprinkle generously with fresh grated nutmeg and ground cinnamon to taste.

Bake in preheated 350 degree F oven for 20 to 25 minutes until the crust is cooked through. Best served warm with a scoop of Connecticut-made ice cream or fresh whipped cream. Serves 6.

Recipe inspired by Elsie Masterton, from the Blueberry Hill Menu Cookbook, Thomas Crowell Co., 1963.

THE HISTORY OF A CEDAR SWAMP

BY JAMES L. GOODWIN

This article has resided quietly for some 50 years in the files at the Goodwin Conservation Center in Hampton. It appears to be notes for a talk James L. Goodwin may have given in Hampton. The influence of Mr. Goodwin remains large to this day in Hampton and throughout Connecticut. Goodwin came to Hampton in 1913 and purchased 25 acres of an abandoned farm and white pine forest. He began managing this parcel in 1914. In 1964, he conveyed what had been his Pine Acres Farm, more than 1,700 acres, to the state of Connecticut. The house, outbuildings, and 80 surrounding acres were “to provide education in forest, wildlife and general conservation among youth and adult groups on a statewide basis.” The complex was named the Goodwin Conservation Center and the adjoining woodlands the James L. Goodwin State Forest.

This year, 2014, marks the 50th anniversary of that donation to the people of the state. Since 1964, thousands of children and adults have walked the grounds, hiked the trails, fished in the pond, and enjoyed the beauty of this gift. Many times people visiting the center stop because they “remember coming here as a child with my parents” and they fished or rented a boat “from Mr. Goodwin.” The legacy left by Mr. Goodwin still resonates in those who visit this beautiful nook of the Quiet Corner.

—James Parda

During the early 1700s, the northeast section of the then Windham Township gained steadily in population and importance despite its remoteness and inaccessibility. Its soil was good and cheap, its situation pleasant and attractive. A high hill, at the foot of which ran the Little River, now known as Hampton Hill was considered a favorable site for a settlement and by a land distribution in 1712 was open to purchasers. Various persons bought land in 1713, on the hill or in its vicinity, and settled upon it and helped build up what was known as Windham Village. In December 1716, the town agreed that the northeast part be named a parish after the name of the first settler David Canada, of whom little is known but the fact of his purchase and settlement. It is believed that David Canada built the first house in this section and kept the first tavern. He must have died early as his name does not appear among the Windham town or church records. However, his sons’ names appear among the inhabitants at a later date.

In 1763, Canada Parish was divided into school districts, the burnt “Cedar Swamp” being the dividing line between the first and second



PHOTOGRAPHER UNKNOWN

This photo from the Goodwin archives was taken in 1933 during the construction of the dam.

districts. At some early date, probably when the first settlers came in about 1715, the Cedar Swamp, which extended north and south for some two miles, was divided into lots from five to seven acres each and apportioned among the settlers so that each owner could have fire-wood and cedar trees from which shingles and posts could be obtained. Cedar was valuable as it has a more lasting quality in the ground than other woods.

“Canada Parish,” long burdened by its remoteness from the place of public convention for negotiating town affairs, renewed its efforts for independence soon after the Revolutionary War. In 1786, at a town meeting by a majority of one vote, the people voted to establish a separate township, which was speedily enacted by the Assembly in Hartford. By incorporating parts of Pomfret, Brooklyn, Canterbury, and Mansfield, the town of Hampton was formed.

The northwest part of Hampton, where the Cedar Swamp lies, was very sparsely settled, having remained, for many years, in the hands of non-residents. [We assume Mr. Goodwin meant that those responsible for the swamp could not live on that land.]

A bridge must have been built across the Cedar Swamp connecting Hampton with Chaplin shortly after the Town of Hampton was established, for at a town meeting in September 1793, the question came up as to the maintenance of the bridge. The next year at a town meeting in the fall, it was voted to continue the maintenance of the bridge, which was built of wood.

While purchasing land in 1915, which was later to become my Pine Acres Farm, I became interested in this Cedar Swamp, about two miles long and a quarter of a mile wide, which was situated in a valley about 1,000 feet east of my farm buildings and immediately north of what is now Route 6. The swamp was covered with a thick growth of old Southern White Cedar and Red Maple and according to the old map was divided as early as 1791 into twenty-six lots varying from five to seven acres each under individual ownership as they were when I made my first land purchase of Lot No. 1 in 1915. This lot consisted of 7 acres and had a fine stand of White Cedar and

Red Maple. As I was building a barn, the cedars were cut and sent to a shingle mill nearby to be manufactured into shingles with which we shingled the roof and sides of the entire barn. In addition, there were many large old Red Maple trees on this lot which we cut and sold for four-foot firewood, for which at that time there was a great demand for the stoves of neighboring farmhouses, fuel oil furnaces not having come into use at that time. My plan was to acquire and develop a woodland tract, which could be managed according to the best forestry principles.

As time went on, I purchased land entirely surrounding the Cedar Swamp, consisting of hardwood areas or open fields, where I established pine and spruce plantations. So, in order to acquire the entire area, from time to time, I purchased Cedar Swamp lots and from them was able to obtain Maple cordwood and cedar shingles from the cedar trees, which were cut and sold usually in the winter. However, it was only during the coldest winters that the swamp would freeze over hard enough to allow a team of horses to go onto it and haul out the wood. In 1928, I purchased forty-eight acres of Cedar Swamp lots from the Tuttle Brick Company of New Haven, who for many years had obtained cordwood from their lots, which they used to fire their kilns in manufacturing bricks.

By 1930, most of the southerly part of the swamp had been cut off, leaving a barren open swampy area. A narrow brook ten to twelve feet wide running through the middle of it brought to mind the possibility of damming the brook at the lower end and flooding the swamp for its entire area for at least two miles.

In 1932, more Cedar Swamp lots were purchased, thus completing my ownership of the entire twenty-six lots. One of these lots in the more northerly part of the swamp included what was known as Governor's Island. This island of four acres was elevated about four to ten feet above the surrounding swamp and was covered with an interesting growth of all varieties of trees found in the surrounding forest. Large White Pines, Hemlock, Tulips, Oaks, Beech, Hickories, and Chestnuts, with a thick undergrowth of Mountain Laurel and many rare and unusual wild flowers such as Trillium and Calla Lillies, grew in thick profusion and formed a delightfully secluded spot, which when the swamp was eventually flooded, could only be reached by water. Owing to the inaccessibility of the island, the trees had never been cut and were quite old and formed practically a virgin forest.

About 1843, the then-governor of Connecticut, John Cleveland, whose home was in Hampton, owned this island thus giving it its name. In colonial times, it is said the island was a retreat for the Nipmuc as it was so well protected and is supposed to be the last campground for these Indians in Eastern Connecticut.

In the fall of 1933, a dam 1,000 feet long was constructed at the extreme south end of the swamp and completed the following year. It filled fairly rapidly and by 1934, formed a lake two miles long where boating and fishing have been enjoyed for many years.

James Parda is the program director of the James L. Goodwin Conservation Center in Hampton. The center is a joint project of the Connecticut Forest & Park Association and the Connecticut Department of Energy and Environmental Protection. Thanks to Seth Hisman, a student at Lyman Memorial High School, for transcribing Mr. Goodwin's article.

Visit Goodwin Forest's lake, trails, and more

In his book, *A History of Pine Acres Farm*, Goodwin recorded his thoughts on converting the swamp to a water body and described the construction process to build the dam in this manner:

Work was started in the fall. In order to strengthen it near the State road and to follow the requirements of the State Board of Engineers and the State Highway Department, the dam was reinforced near the State road for four hundred feet by a cement core or wall built inside the earth filling. . . . and the result was an attractive lake which maintained a fairly even water level, although the neighbors predicted that it would dry up in times of drought.

During this 50th anniversary year, the Goodwin Conservation Center will be hosting numerous workshops, welcoming visitors to hike on the maintained trails (trailhead for the Blue-Blazed Natchaug Trail), canoe in Pine Acres Pond, enjoy a cool breeze on a summer day, stroll the native plant gardens, listen for songbirds in the various habitat demonstration areas, bike the Airline Trail, and experience the natural world in this wonderful outdoor classroom. This is the only conservation education center in Connecticut in a state forest. It was the vision of one man who practiced forestry on the land for 50 years beginning in 1914. Today that vision continues with the unique public-private partnership of the Connecticut Forest & Park Association, the Connecticut Department of Energy and Environmental Protection, and the Friends of Goodwin State Forest.

Other activities include horseback riding, snowshoeing, cross-country skiing, youth camping and letterboxing, chainsaw safety training, and informative workshops year round.

Visit in person or go to friendsofgoodwinforest.org or ct.gov/deep/goodwin.



Pine Acres Farm

LARRY GREEN

Hebron sawmill operator and former CFPA Board of Directors member

Lawrence Edward Green, a sawmill operator in Hebron who served on the Connecticut Forest & Park Association Board of Directors from 1984 to 1991, died on April 12. He was 81 and had lived in the Amston section of Hebron.

Born July 27, 1932, at home in Occum, Mr. Green was the only son of Archal and Henrietta Staba Green. He graduated from Bacon Academy in Colchester in 1950. His wife, Fay Evans Green, whom he met at Bacon, died in 2002, after 48 years of marriage.

Mr. Green was the owner, operator, and president of the family business, Archie H. Green and Son Inc., a native hardwood lumber producer and real estate developer. Besides his service with CFPA, Mr. Green was president of the Colchester Lions Club.

He leaves his son, Christopher A. Green of New York City, and daughter, Colleen Green Everett; two grandsons; and many friends and extended family members.

A funeral took place April 17 at Colchester Federated Church.



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*In a post-Sandy world, must Connecticut's roadside
trees surrender? The research might surprise you.*

THE UNINVITED BEETLE continued from page 16

Wasp Watcher team has devised a way to use *Cerceris fumipennis*, a wasp native to Connecticut that hunts the emerald ash borer and other beetles in the *Buprestidae* family, to track the ash borer like a homing beacon.

The wasp catches beetles in locations such as tree canopies and brings the paralyzed beetle back to its ground nest as feed for its larvae. The nests are predominantly located around baseball fields because of the sandy soil, which provides protection for the nests. This is where Dr. Rutledge and volunteers wait with nets to capture the wasps and see if they're holding an ash borer. If so, the team can determine if there is an infestation in the surrounding forest.

The brainchild behind this type of biosurveillance is taxonomist Dr. Steven Marshall, a professor and collection director for the University of Guelph in Ontario, Canada. Through his years of fieldwork, he already knew which wasp to use to track the migrations of the borer.

An area is typically infested between four to six years before scientists can even find them," said Dr. Rutledge.

The Wasp Watchers program works with the Department of Energy and Environmental Protection to pinpoint locations for quarantining.

Once an area is determined to be host to the ash borer, then the state can take the proper steps to quarantine, said Dr. Chris Martin, director of forestry for DEEP. The department's primary roles have been early detection and getting the word out so people can prepare.

"There is no funding for eradication because it has been determined impossible to do," said Dr. Martin.

As of now, federal regulations allow quarantine only between counties, not subcounties, because the insect is very mobile. These regulations hurt local businesses like sawmills in their economical use of forestland. "Companies that sell wood for flooring, cabinets, and firewood will all be affected by the infestation," said Dr. Martin.

Hull Forest Products moved from Rhode Island to Pomfret, Connecticut, in 1970 and is now southern New England's largest sawmill. Company officials said they have seen an increase in the number of ash logs in the mills because people are cutting down their trees before they are even infected to save the economical use of the tree.

Nearby states such as Pennsylvania, Massachusetts, and New York have denser forests, and the result has been stricter regulations to control the ash borer.

So far the battle has not gone well, and scientists, state officials, and research professors say that at best they can only hope that the ash tree does not go the way of the chestnut and the elm.

Daniel Candella is a junior majoring in journalism at the University of Connecticut. He enjoys hiking the local trails in Connecticut and observing the vast wildlife. His story is a product of an environmental journalism course at UConn.

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The Connecticut Forest & Park Association joined with the National Park Service and officials and land advocates from the town of Guilford on June 8. The New England Trail's gateway at Long Island Sound is officially open in Chittenden Park. This boardwalk will get its final decking and benches soon.

CHRISTINE WOODSIDE

