

Wildlands and Woodlands Farmlands and Communities

Broadening the Vision for New England

2017
REPORT
SUMMARY

The story of New England is one of resilience. The modern return of forests after centuries of clearing for colonial agriculture has made New England the nation's most heavily forested region and, in its southern reaches, one of the most densely settled (Figure 1). Today, with a second wave of forest loss underway in all six New England states and anticipated impacts of climate change looming, the region's forests are at another turning point. Suburban sprawl is chipping away at both forest and farmland, reversing the region's environmental success story and jeopardizing the many benefits these lands provide to people and nature.

These changes to the land compromise the vital natural resources delivered by forests and farms that have supported local economies for centuries, and undermine the beauty of New England's landscape and distinct communities. New Englanders have long depended on the region's expansive forests, cared for by millions of private landowners, to provide low-cost benefits such as clean water and flood protection; healthy air; local wood and food production; resilient habitat; outdoor recreation and tourism; and vast stores of carbon to help mitigate climate change (Figure 2). Protecting landscapes and the benefits they provide will ensure an environmentally and economically sound future for New England.

The *Wildlands and Woodlands* (W&W) vision, first articulated in our 2010 report, responded to the region-wide downturn in forest cover with a call for the retention and permanent protection of at least 70 percent of the landscape in forestland and another 7 percent in farmland by 2060 (Figure 3). Most of the forests would be managed as woodlands for wood products and other benefits, while some ten percent would be designated as wildland reserves. A landscape mosaic of forests, farms, and waterways interwoven with communities would support and enrich the lives of New Englanders and provide the capacity for people and nature to adapt to future environmental change.

THE BROADENED WILDLANDS AND WOODLANDS VISION

Wildlands and Woodlands, Farmlands and Communities broadens the original 2010 W&W vision for New England by fully embracing farmland and the built environment, from rural communities to suburban towns and urban centers, and honors the regional differences in conservation needs and challenges between northern and southern New England. The new *Wildlands and Woodlands* report envisions a region where:

Forests blanket the region, even within thickly settled areas, but vary in striking ways to create distinctive landscapes, provide a rich array of habitats, and support a range of human experiences and valuable resources. Farmlands provide healthy local food, diversify the region's landscape, and enhance scenic beauty, plant and wildlife habitat, and biodiversity. Robust rural economies enable the individuals and families who produce our local wood and food to share in the region's prosperity. In more densely populated areas, shade trees, urban gardens, and forested parks and greenways yield irreplaceable community and health benefits and help moderate the effects of climate change. Forestland and open space protected in perpetuity mitigate climate change, help communities contend with extreme weather events, provide clean drinking water, and maintain healthy air quality. Across the region, well-managed forests and farmlands, expansive wildlands, smart growth, and rural economic development are embraced as compatible, achievable, and mutually reinforcing.

New England Forest Cover and Human Population

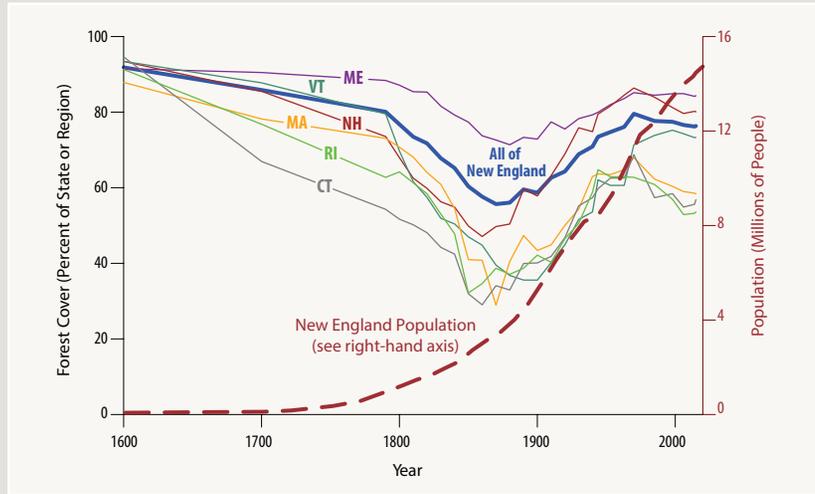


Figure 1. The second wave of forest loss now under way in New England jeopardizes the region's environmental success story, which has been characterized by the return of forests following the decline of agriculture. Modified from Foster and Aber (*Forests in Time*, 2004) with additional data from USFS FIA state reports.

Forests Store Carbon

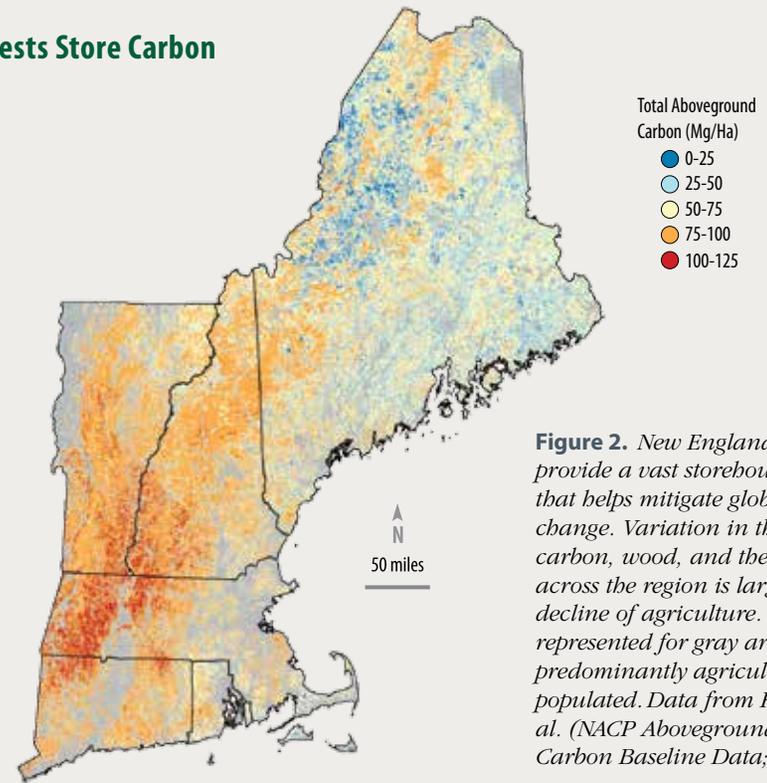


Figure 2. New England's forests provide a vast storehouse of carbon that helps mitigate global climate change. Variation in the amounts of carbon, wood, and the size of trees across the region is largely due to the decline of agriculture. Data are not represented for gray areas that are predominantly agricultural or densely populated. Data from Kellendorfer et al. (*NACP Aboveground Biomass and Carbon Baseline Data*, 2012).



Wildlands & Woodlands Vision for New England in 2060

30 million acres conserved forest: 90% Woodlands / 10% Wildlands
 3-6 million acres conserved farmland / 5 million acres efficiently developed land

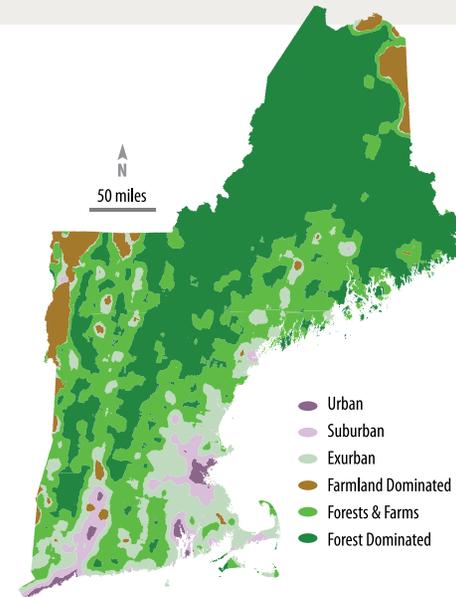
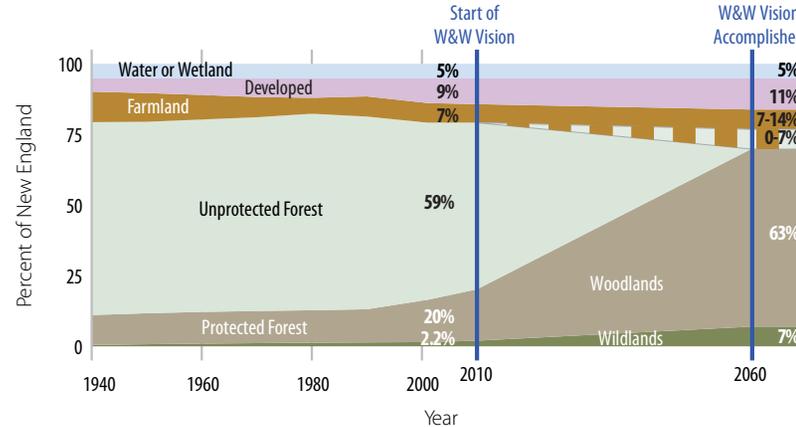


Figure 3. In a Wildlands and Woodlands future, New England will remain a diverse landscape with local conditions, community priorities, and landowner choices determining the relative amounts of forest, farms, and developed land in each location.

GROWING CHALLENGES

Despite the progress that has been made, several challenges remain and are accelerating. While New England is one-third of the way toward the *Wildlands and Woodlands* forestland goal, the region faces many threats.

Development eliminated 24,000 acres of forest each year from 1990 to 2010. At this rate, another 1.2 million acres of forestland and farms will be lost to development in the next 50 years (Figure 4).

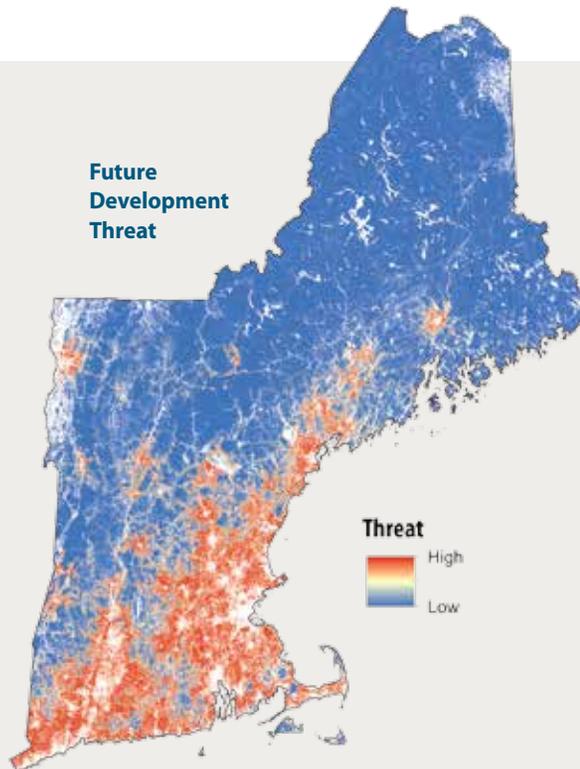
State and federal funding for land protection is declining in all six New England states. Together, annual state and federal funding declined nearly 50 percent from its peak of \$119 million in 2008 to \$62 million in 2014.

The loss of forest to development sacrifices a lower-cost option for mitigating climate change and its effects. Intact, well-managed forests offer many additional benefits to communities including clean water, flood protection, jobs in wood and food production, and beautiful areas to spend time.

Land use and forest loss are expected to exert a more immediate and larger impact than climate change on forests and most ecosystem services over the next century. Development irreversibly eliminates forest cover, whereas climate change gradually alters forest composition and function.

Forest Loss to Development

Figure 4. Trends in forest conversion to development from 1990 to 2010 show the fastest rates of loss in southern and eastern areas. While northern New England experiences a much lower overall rate of development, it is characterized by a more dispersed pattern of land perforation and fragmentation. Model projections show that if current trends continue, 1.2 million acres of forest and farmland will be lost from 2015 to 2060. Data from Thompson et al. (In Review); Olofsson et al. (2016); Homer et al. (2015).



GAINING GROUND

The last quarter century represents the most active period of land protection in New England's history. Recent gains in land protection, the growth of novel conservation collaborations, and innovative public and private conservation finance strategies are fueling this success.

New England continues in a new era of land protection.

Over the past 25 years, the rate of land conservation increased more than four times over previous decades, with an average of 180,000 acres of land protected by private landowners, organizations, and agencies each year. Two dozen very large tracts of forestland in northern New England make up a bit more than half of all the acres protected since 1990 (Figure 5).

Regional collaborations are a growing force in conservation.

Since 2003 regional conservation partnerships (RCPs) (Figure 6) have grown from 4 to over 40 and cover more than 60 percent of the region. Collectively, they are reigniting the pace of land protection. Academics for Land Protection in New England (ALPINE) is a growing network expanding the role of faculty, students, alumni and institutions in land conservation.

Public agencies have invested nearly \$1 billion dollars in New England land protection in the past 10 years, and innovative conservation finance strategies continue to emerge. The previous period of municipal, state and federal investments in land protection in the region have been augmented in recent years by private philanthropy, landowner donations, and innovative private financing.

W&W Goals and Land Protection in Northern New England since 1950

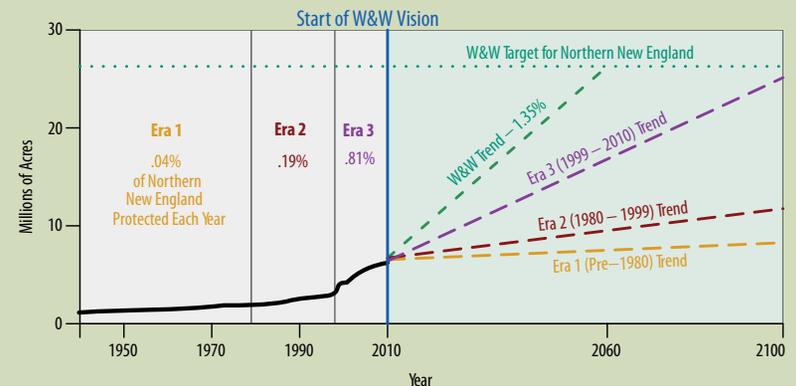
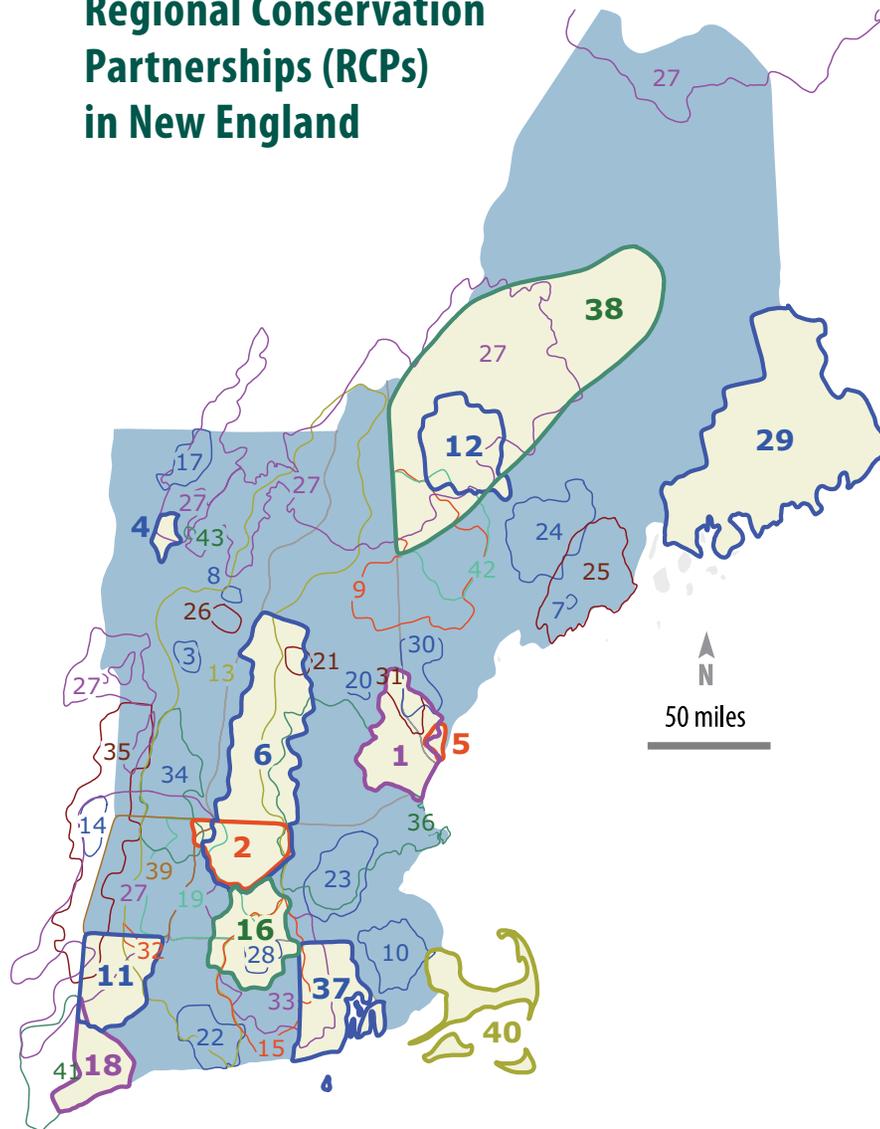


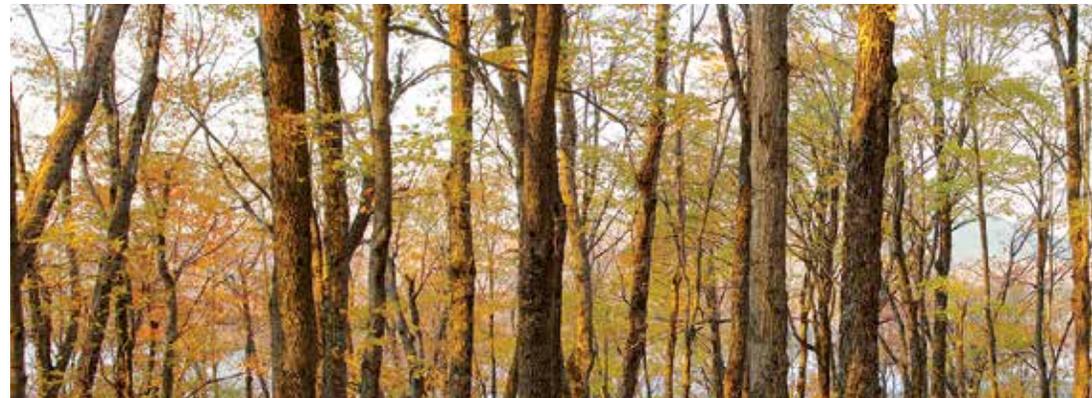
Figure 5. Wildlands and Woodlands goals are achievable and will require a tripling of the current pace of protection to reach the goal by 2060. There is precedent for such an increase. In the three northern states (Vermont, New Hampshire, Maine), three eras of land protection reveal a rate increasing four- to five-fold between each era. Adapted from Meyer et al. (Biological Conservation; 2014).

Regional Conservation Partnerships (RCPs) in New England



- 1 - Great Bay Resource Protection Partnership
- 2 - North Quabbin Regional Landscape Partnership
- 3 - Chateaugay No Town Conservation Project
- 4 - Chittenden County Uplands Conservation Project
- 5 - Mt. Agamenticus to the Sea Conservation Initiative
- 6 - Quabbin to Cardigan Partnership
- 7 - River-Link
- 8 - Orange County Headwaters Project
- 9 - Upland Headwaters Alliance
- 10 - Resilient Taunton Watershed Network
- 11 - Litchfield Hills Greenprint Collaborative
- 12 - High Peaks Initiative
- 13 - Friends of the Silvio O. Conte National Fish and Wildlife Refuge
- 14 - Rensselaer Plateau Working Forest Initiative
- 15 - Thames River Basin Partnership
- 16 - Mass-Conn Sustainable Forest Partnership
- 17 - Cold Hollow to Canada Forest Link Project
- 18 - Fairfield County Regional Conservation Partnership
- 19 - Forever Farmland Initiative
- 20 - Belknap Range Conservation Coalition
- 21 - Newfound Land Conservation Partnership
- 22 - Lower CT River and Coastal Region Land Trust Exchange
- 23 - West Suburban Conservation Council
- 24 - Kennebec Woodland Partnership
- 25 - 12 Rivers Conservation Initiative
- 26 - Taylor Valley Conservation Project
- 27 - Staying Connected Initiative
- 28 - Quiet Corner Initiative
- 29 - Downeast Conservation Network
- 30 - Forest Works!
- 31 - Salmon Falls Watershed Collaborative
- 32 - Sandy Brook Conservation Corridor
- 33 - Southern New England Heritage Forest Partnership
- 34 - MA-VT Woodlands Partnership
- 35 - Berkshire-Taconic Regional Conservation Partnership
- 36 - Merrimack Conservation Partnership
- 37 - Rhode Island Woodland Partnership
- 38 - Maine Mountain Collaborative
- 39 - Berkshire Wildlife Linkage Partnership
- 40 - Massachusetts Coastal Pine Barrens Partnership
- 41 - Hudson to Housatonic Regional Conservation Partnership
- 42 - Maine West
- 43 - Shutesville Hill Wildlife Corridor Project

Figure 6. Regional conservation partnerships (RCPs) provide one effective way of linking local knowledge and connections to private landowners with landscape and regional conservation planning, science, and funding. Forty-three RCPs involving 350 organizations now serve more than 60 percent of New England. The number of RCPs conserving land in the region has grown rapidly in recent years, doubling since 2009. Several RCPs are marked in bold on the map above, with their recent conservation highlights further described in the text of the full report. Data from B. Labich, and individual RCPs.



A CALL TO ACTION

Today, New England is one-third of the way toward the *Wildlands and Woodlands* forestland goal but is racing against ongoing environmental destruction.

To reach the W&W vision's 2060 target and preserve the natural infrastructure that sustains society and nature in New England, we must triple the pace of conservation to protect the remaining 23 million acres.

The need to adapt to climate change, reinvest in natural infrastructure, and make our communities more resilient presents a significant opportunity for transforming how we use and protect the land. The people, communities, and institutions working in New England bring an unparalleled capacity for collaboration to this opportunity. The following six recommendations will help to achieve the *Wildlands and Woodlands* goals and support a prosperous future for local communities, New England, and the wider world.

Accelerate land protection. Establish bold state and regional targets for protecting forests, farms, and wildlands; invest in collaborative conservation partnerships; and engage communities in regional land-protection activities.

Manage more land, ecologically and sustainably. Apply sound stewardship to increase food and wood production while retaining ecosystem services; connect communities with the land and improve health and well-being by encouraging local food production; and protect wildlands as an important part of the working landscape that provides multiple benefits to people and nature.

Grow smart in cities, suburbs, and towns. Work with communities to implement effective land-use protections and development incentives to increase efficiency, develop green infrastructure, mitigate climate change effects, revitalize former industrial mills, and improve local and regional transportation.

Support strong rural economies. Support rural communities as they adapt to changes in regional and global markets that influence demand for local natural resources; boost economic opportunity by protecting lands valued as community forests and recreation areas; and link markets for low-grade wood with incentives for long-term forestry that improves forest conditions.

Increase funding for land protection. Increase investments and tax incentives to accelerate land protection; ensure the stability of existing state funding programs; and encourage sharing of success stories and models of innovative conservation funding.

Reduce resource consumption. Recognize that our planet has real limits to its capacity to support increasing human demands. Reduce consumption and use land as efficiently as possible to lessen impacts on our natural systems and increase resilience as we face future environmental challenges.



To reach the W&W vision's 2060 target and preserve the natural infrastructure that sustains society and nature in New England, we must triple the pace of land protection.



Through decades of land protection by thousands of individuals and organizations, large expanses of the distinctive New England landscape have been permanently conserved for current and future generations. But today, the forest and farm base that supports human livelihood, wildlife, and critical nature-based benefits for society is being chipped away slowly by development and parcelization. Retaining portions of the land as intact and unmarked by development is the single most important step that we can take to ensure the continuous flow of benefits from nature to society in the face of mounting environmental threats. Fortunately, local communities, public agencies, and the private sector are banding together to develop new partnerships and approaches for conserving forests, farms, and green space in cities, towns, and the countryside. The broadened *Wildlands and Woodlands* vision calls on us to deliberately build linkages between the future of open and built space while recognizing their interdependence and supporting the betterment of each. This may take years to decades to occur, but history shows that the concentrated effort of many individuals can transform an entire region in ways that shape the land and benefit communities for centuries to come.



AUTHORS

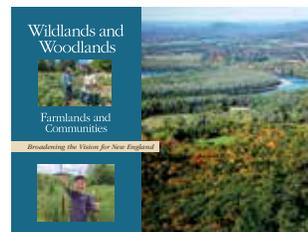
David Foster, Kathleen Fallon Lambert, David Kittredge, Brian Donahue, Clarisse Hart, William Labich, Spencer Meyer, Jonathan Thompson, Mary Buchanan, James Levitt, Robert Perschel, Keith Ross, Geordie Elkins, Cheryl Daigle, Brian Hall, Edward Faison, Anthony D'Amato, Richard Forman, Peter Del Tredici, Lloyd Irland, Betsy Colburn, David Orwig, John Aber, Alan Berger, Charles Driscoll, William Keeton, Robert Lillieholm, Neil Pederson, Aaron Ellison, Malcolm Hunter, and Timothy Fahey



Full figure references are available in the full report. For a PDF version of the report visit www.wildlandsandwoodlands.org. For inquiries and hard copies of the full report, please contact Harvard Forest at HFoutreach@fas.harvard.edu.

Photos: Cheryl Daigle, David Foster, Jerry Monkman/EcoPhotography (farmers in field), The Trustees (urban farm), Ryan Burton (stream).

The paper used for this publication was made in Monadnock, New Hampshire and is Green-e Certified.



Full report available at wildlandsandwoodlands.org.

