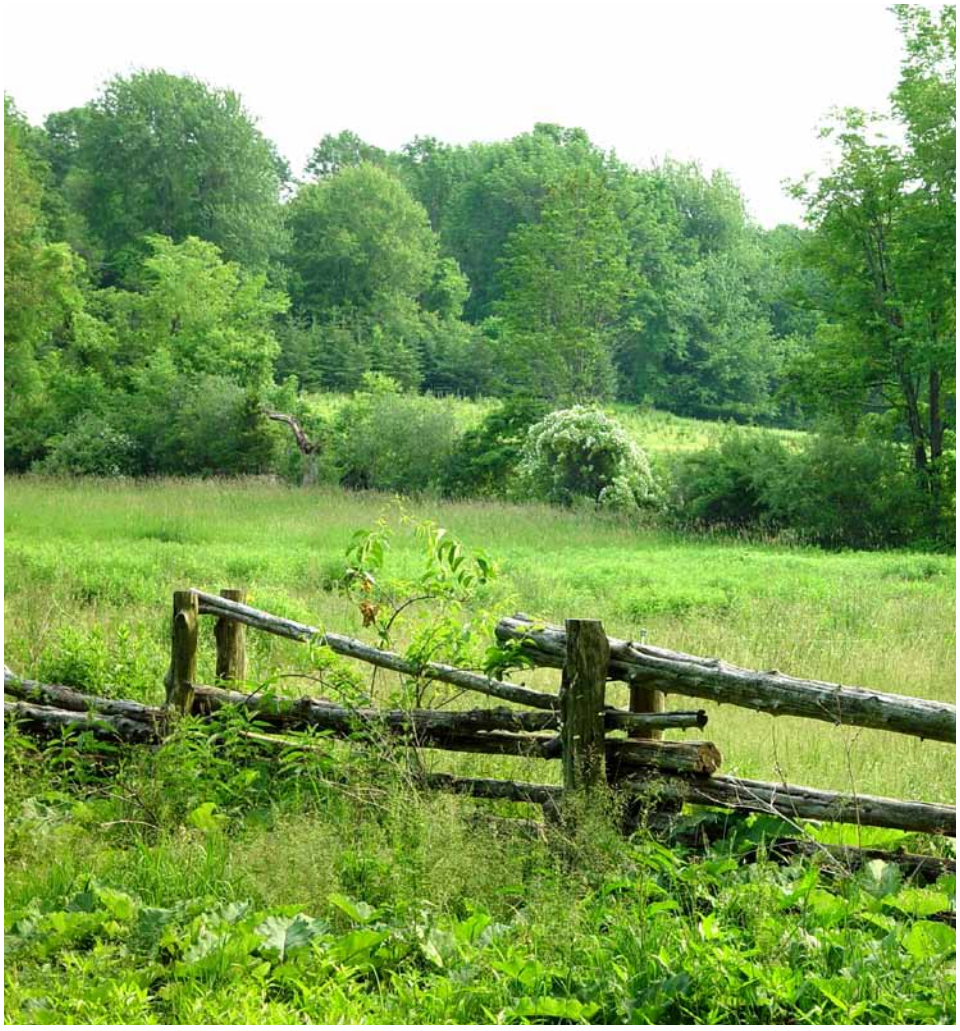
Spring 2013

Highstead

Working to conserve the forested landscape of New England through science, sound stewardship, and collaborative conservation

To the Members and Friends of Highstead

This past winter I happened to spend time in every state in New England meeting with landowners, conservationists, policy makers, and scientists who are focused on land protection and retaining intact forests, farms, and landscapes across our region. One central theme emerged in nearly every discussion—the critical role that local and regional land trusts can and must play in assisting landowners to conserve their woodland, fields, homesteads, and other landholdings. For me, this message underscored the importance of the work by Highstead's Emily Bateson and Bill Labich in supporting land trusts and assisting them in forging regional conservation partnerships that increase their efficiency, scope, and success.



Hill Farm near Highstead

As many of the largest conservation organizations are rightfully focusing on global and urban issues and on the sustainable stewardship of their own landholdings, a subset of large organizations and hundreds of smaller groups remain centered on the daily and long-term effort of conserving our New England landscapes. Highstead's mission of advancing conservation and land protection locally and regionally is being achieved not by enlarging its own enterprise, but by contributing to and expanding these diverse ongoing efforts from Connecticut to the North Woods.

As our work advances it is a pleasure to acknowledge achievements at home among our staff and board. New Communications Director Dave DeFusco has hit the ground running, bringing new visibility and reach to our conservation, science, and education efforts. With his leadership we will be launching a new phase of regional outreach for the Wildlands and Woodlands Initiative. And in May, board member Peter del Tredici will be travelling to England to receive the Veitch Medal from the Royal Horticultural Society for his life work advancing horticulture, botany, urban ecology, and plant conservation.

David Foster *is Director of the Harvard Forest at Harvard University and President of the Board of Highstead Foundation.*

From the Conservation Director

Emily M. Bateson

Let Me Count the Ways: The Economic Benefit of Our Natural Landscapes

As the snows have melted and the woods and meadows have come alive again with blossom and birdsong, New Englanders have put their skis and snowshoes away for the season, and dusted off their hiking boots, bikes, and paddles. And the collective economic benefit is substantial. It turns out that Americans spend $646 billion on outdoor recreation every year, according to new research released by the Outdoor Industry Association. In New England alone, outdoor recreation accounts for $31.3 billion in consumer spending, $9.89 billion in salary and wages, and $2.24 billion in state and local tax revenues, making our forested and natural areas an extraordinary economic powerhouse for the region.

New England Outdoor Recreation Economic Benefit

Total in Billions

$43.4

Total Jobs

333,100

Of course, recreation is not the only economic benefit derived from our natural landscapes, as the Wildlands and Woodlands Initiative has long emphasized. Privately owned forests in Maine, New Hampshire, and Vermont alone contribute over $3 billion annually to local and regional economies and sustain 80,000 local jobs in the forestry, wood and paper products, and wood furniture industries. Our heavily forested region supplies us with local, cost-effective, and renewable building supplies and fuel.

The economic value of the benefits that forests provide by cleaning the air we breathe and the water we drink, helping cool the planet, and sheltering biodiversity are harder to calculate. Mass Audubon has estimated that the market value of the natural areas within the state—for flood control, climate mitigation, and water filtration—is over $6.3 billion annually. If it didn't have the Quabbin reservoir, Massachusetts would have to spend $180 million on a water filtration plant for Boston's water supply; without wetlands along the Charles River, there would be an estimated $18 million in flood damages each year—a figure sure to increase as climate change produces more extreme weather in New England.

The remarkable economic value of our region's natural landscape is a compelling bipartisan message that Highstead takes to our congressional delegation and Capitol Hill each year to secure more federal monies for conservation through our leadership role in the New England Forest Policy Group.

But at the end of the day, the real value of New England's landscape to the people that live here is incalculable.

How does one put a price tag on a satisfying day in the woods cutting trees to keep the fires burning all winter, a day of family hiking in peak fall foliage, or an early morning spring ramble just after the return of the warblers?

Highstead is working with an increasing number of landowners, communities, and regional conservation partnerships (RCPs) who share a love of their local landscape and a fierce determination to pass it on to their children and grandchildren. And that is how the Wildlands and Woodlands vision to conserve 70% of our forested landscape will be achieved: landowner by landowner, community by community, and acre by acre. Together, we will roll up our sleeves, get the job done, and leave a landscape of special places, farms, forests, and sensible development for the generations that follow—a lasting legacy far beyond monetary value.

Participant Comments

"Excellent - This from a jaded conference-goer. Exciting stuff."

"Great, inspiring day. There's so much to do!"

Highstead Hosts Major Collaborative Conservation Conference

On November 13, 100 people came together in Concord, N.H., representing 25 regional conservation partnerships (RCPs) from seven states, as well as state and federal forestry and wildlife agencies, universities, timber investment firms, and land trusts, for a full day of networking, interactive panel discussions, and in-depth conservation training. Participants were instructed in a variety of fields and strategies, including how to develop strategic land protection plans, run a capital campaign, conserve multiple parcels of land with many partners, conserve for climate, and engage families in conversations about their land and its future. Feedback shows that participants left feeling inspired, re-energized, and eager to implement new strategies. This year, Highstead will help convene state-by-state RCP meetings, as well as this annual RCP Gathering.

Here at Highstead

Geordie Elkins
Operations Manager

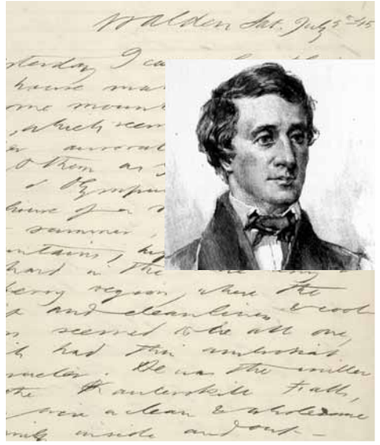
Nature's Scribes

What journal do the persimmon and the buckeye keep, and the sharp-shinned hawk?

–Henry David Thoreau

While a masterful writer, Henry David Thoreau understood that it was the natural world around him that was telling the real story. While making his circuit around Walden Pond and Concord, Mass., between 1852 and 1858, Thoreau recorded the plants and animals living there, including detailed observations on the flowering date of more than 500 species of plants. Additionally, he recorded the return date of migrating birds and the emergence of animals from their winter hibernation. Combined with his copious notes on temperature, precipitation, and ice thickness, Thoreau left us with a highly detailed record of the natural history of Concord. That historic record is tremendously valuable today, and helps illustrate the benefits of the observations and monitoring underway—and now expanding—at Highstead.

The aims are the same, but the technology has changed since Thoreau who, over the course of a quarter century, filled dozens of notebooks with written observations and comments, creating a seminal work of self-documentation. Geordie Elkins, right, uses a smart phone app to record and send data on mountain laurel to the National Phenology Network.



Thoreau journal photo credit:
The Pierpont Morgan Library, New York

Thoreau's rich portrait of nature captured in his observations serves as a benchmark for important research on climate change. Recently, Boston University Biology Professor Richard Primack (Highstead's June speaker—see back cover) retraced Thoreau's footsteps and observed the same plants in Concord. The results are striking: the average spring flowering date is now seven days earlier than it was 150 years ago when temperatures were 4 degrees Fahrenheit cooler than today. With temperatures projected to rise 4 to 7 degrees over the next 100 years, we may see even more dramatic changes in the years ahead.

Recording and interpreting the changes in our forests are integral components of Highstead's ecological mission.

In addition to monitoring breeding bird populations and tracking changes in forest composition and structure in permanent vegetation plots and deer exclosures, Highstead has been recording the phenological cycles of certain plant species since the mid-1990s. Phenology observations record how non-biological factors, such as temperature, precipitation, and rainfall, affect the natural cycles of plants and animals. Recent research, like Primack's, has underscored the importance of plant and animal phenology records in climate change research and has motivated us to explore expanding our monitoring to include the arrival time and emergence of birds and amphibians. We are also re-evaluating our plant phenology approach to ensure it is compatible with other groups'. This will allow us to leverage our internal data collection so that it can be used to contribute to broader scientific studies outside Highstead.

To this end, Highstead is working within the framework of the USA National Phenology Network, a group of citizen scientists, government agencies, nonprofit groups, educators, and students recording the impacts of climate change on plant and animal cycles across the country. The advantage of the network is its protocol for observing and recording data on more than 900 species of plants and animals, ensuring uniform data collection and recording. Additionally, all the data are pooled and available to every member.

Highstead is in the process of selecting which new plant and animal species to observe, and we will share our recorded data with this important national network. We are also choosing which climate information to record, such as spring ice-out on our pond, and identifying a number of points on the Highstead landscape where we can photograph changes over time. During a one-year trial, we will solicit input from experts to ensure we develop a program that is meaningful and sustainable long into the future. Our goal is to both gain a greater understanding of the changes occurring on our own property and to contribute to larger regional and national efforts investigating the effects of climate change.

The story of the persimmon, buckeye, and sharp-shinned hawk is an important one that is still being told, and, in the tradition of Thoreau, it is a story that we will continue to tell here at Highstead.

Become a Citizen Scientist

Joining the effort to record and understand global climate change is very simple: go to the USA National Phenology Network website and become a member (https://www.usanpn.org/natures_notebook); review online training information and videos; and choose from over 900 species of plants and animals that you want to start monitoring. You can record the changes to a tree in your front yard, observe the birds you see out the kitchen window, or, if you are ambitious, track changes to 500 species of plants like Thoreau.

Stewardship Science

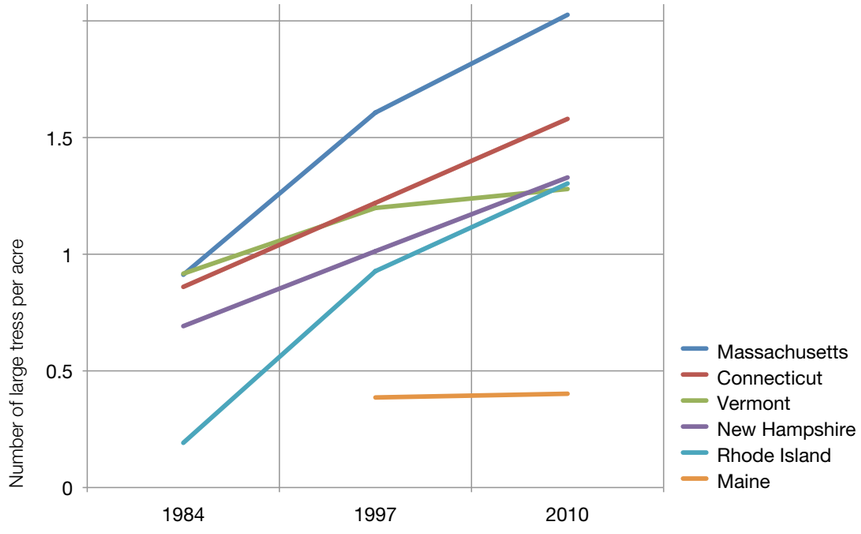
Ed Faison
Highstead Ecologist

Rise of Large Trees in New England Defying Global Trend

Large trees are among the most visible and striking natural feature of the New England landscape. They frame our roadsides and parks, delineate property boundaries, provide shade for farm animals, and serve as a living connection to our cultural past. Large trees also provide numerous ecological services in forest ecosystems not provided by smaller trees. They are such a fixture in our landscape that it is easy to take them for granted and to overlook their long-term changes in abundance.

The article, "Global Decline of Large Old Trees," published in *Science* on December 7, highlighted an alarming downward trend in these giant organisms resulting from a host of climatic and human-related disturbances, such as forest fragmentation, land clearance, wildfire, drought, logging, livestock grazing, and insect outbreaks. The ecological repercussions of such declines are serious. Large trees provide important cavities for many tree-nesting vertebrates, and their expansive crowns offer more food (nuts, fruits, and leaves) for wildlife than do smaller trees. Old forests with large trees also store more carbon and soak it up at a faster rate than they release it through respiration than do younger forests with smaller trees.

The rise of large trees in New England over the past 25 years. Maine, with available data only from the 1990s, appears to be an exception. Data from USDA FIA Program



The global decline in large, old trees does not appear to be happening in New England. Since 1985, the density of large trees has increased in five of the six New England states (see graph), even as forest cover has begun to decline across the region from exurban development and sprawl. What accounts for the increase in this region that defies the apparent global decline? First, it is the region's land use history. Forests have been growing and aging in New England since widespread agricultural abandonment and the decline of unregulated logging in the late 19th and early 20th centuries. But perhaps most important, the increase in large trees is testament to New England's strong conservation ethos, epitomized by local organizations, like Highstead and the Redding Land Trust, and broader visions like Wildlands and Woodlands (W&W).

Large Trees:
The definition of large is somewhat arbitrary and differs depending on the particular ecosystem.

In eastern forests like New England, at least two feet in diameter is a standard definition for large trees.
Old trees have lived generally at least 100 years.

Highstead has been monitoring trees and other forest vegetation onsite since 2004 and in the town of Redding since 2006 using permanently marked vegetation plots. This monitoring project is part of W&W's Stewardship Science Project, which enables us to track vegetation changes over time in response to changing environmental conditions. Data from these plots reveal that Highstead, with 2.1 trees per acre, and the town of Redding, with 3.1 trees per acre, have a high density of large trees relative to the Connecticut average (1.6 trees per acre). At Highstead, red maples comprise most of the large trees; however, tulip poplars reach the largest size: 39 inches in diameter. In Redding, oaks account for most of the large trees, with red oak being the most common species. This year, we will be collaborating with the Town of Redding to resample some of Redding's large trees and other forest vegetation in the permanent vegetation plots. We will also continue to promote the regional monitoring of trees as part of the W&W Stewardship Science Project.

Educational Institutions Catalyzing Conservation

Conservation Finance

Jim Levitt
Senior Fellow

Educational and research institutions are in a unique position to increase the pace of regional and international conservation, according to Jim Levitt, Director of the Program on Conservation Innovation at Harvard, a Senior Fellow at Highstead, and a Fellow at the Lincoln Institute of Land Policy.

"Academic and research institutions around the world are catalyzing the conservation of large landscapes. Their ability to span organizational boundaries coincides with the scale of large landscape conservation that we now know is necessary."

Levitt helped create the Conservation Catalysts Network (www.conservationcatalysts.org) to connect academic institutions around the world taking a leadership role in conservation. He is now working with Wildlands and Woodlands leaders to convene a group of New England academic institutions to discuss how they can individually and collectively catalyze conservation in the region.

Welcome to Highstead

Highstead
127 Lonetown Road
P.O. Box 1097
Redding, CT 06875

203.938.8809

www.highstead.net

Printed on recycled paper.

Please join us

June 1

Highstead Spring Open House and Trails Day

11:00 a.m. to 12:30 p.m.

Guided tour with Highstead Ecologist Ed Faison and Operations Manager Geordie Elkins. Come walk our trails and hear about Highstead's expanding observational studies and ecological monitoring that help document the natural world around us and changes over time.

1:00 p.m. to 2:00 p.m.

Richard Primack, right, Professor of Biology at Boston University, will discuss, "Walden's Plants and Animals: From Thoreau to Today." Come hear about how Thoreau's nature observations 150 years ago are helping us understand climate change today.

RSVP. Space is limited.
203-938-8809

Highstead trails will also be open from 10:00 a.m. to 3:00 p.m. for self-guided tours and visits to the Laurel Collection in bloom.