

Standing Tall: Forestry Practices on Lands Conserved by Selected New England Land Trusts

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Jane A. Difley

Former President and Forester, Society for the Protection of New Hampshire Forests (SPNHP)
2019-2020 Kingsbury Browne Fellow at the Lincoln Institute of Land Policy

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Abstract

Land trusts in New England have protected and take part in the stewardship of millions of acres of forestland that are managed for various conservation purposes. Many engage directly in forest management, and some participate in carbon markets to mitigate climate change. Based on interviews with land trust staff, this paper looks at the ways some land trusts implement forest management and how they view its role in their mission. By and large, these land trusts view forestry as a legitimate and useful strategy for managing conservation lands. How they address mitigation of climate change varies across ownerships and organizations. Looking forward, there is a role for forestry on conservation lands and in mitigating climate change.

Keywords: forestry, land trusts, conservation, forest management, carbon, climate change

About the Author

Jane A. Difley served as President/Forester of the Society for the Protection of New Hampshire Forests from 1996 until 2019. She was the fourth President/Forester, and the first woman, to have led the Forest Society since it was founded in 1901.

Jane has extensive experience in the field of forestry. Prior to coming to the Forest Society, she was the Executive Director of the Vermont Natural Resources Council and spent 10 years working with the American Forest Foundation, where she was named Vice President of Forestry Programs and National Director of the American Tree Farm system. During that time, Jane was elected President of the Society of American Foresters, the national professional association for forestry. She received an MS in Forest Management from the University of Massachusetts in 1979, and a BA in English Literature from Connecticut College in 1971.

Her leadership in conserving New Hampshire's scenic landscapes is widely appreciated. She was at the forefront of the effort to establish and obtain dedicated funding for the New Hampshire Land and Community Heritage Investment Program (L-CHIP). She also played a key role in the protection of the Connecticut Lakes Headwaters, the Balsams, and Mount Major. During her tenure, the Forest Society was also steadfast in the ultimately successful fight against the Northern Pass electric transmission line.

Jane Difley is the 2019 recipient of the Kingsbury Browne Conservation Leadership Award presented by the Land Trust Alliance, and Kingsbury Browne Fellowship presented by the Lincoln Institute of Land Policy. She can be contacted at:

Jane Difley
263 Deer Meadow Road
Webster, New Hampshire 03303

E-Mail: jdifley@mcttelecom.com

Author's Dedication

To the memory of David Kittredge, in honor of his many contributions to the practice of forestry in New England and beyond, and in gratitude for his friendship and support over the course of many years.

STANDING TALL

**Forestry Practices on Lands Conserved by
Selected New England Land Trusts**

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Forestry Practices on Lands Conserved by Selected New England Land Trusts

Executive Summary

Land trusts in New England have protected and take part in the stewardship of millions of acres of land, much of it forested, including conservation easements on lands owned by families, individuals and corporations. The lands they protect, and the way in which they care for those lands, can play a significant role in protecting wildlife habitat, biodiversity, and water quality while also contributing to mitigation of climate change. This is especially true in New England and other heavily forested parts of the country.

Forest management—which encompasses inventorying forest resources and planning for activities to maintain or improve the resources, while keeping the landowner’s objectives in mind—has a role to play in climate mitigation. The science on carbon sequestration and storage is evolving, however, and in this era of rapid social and scientific change, many land trusts are left with questions about how to proceed.

As the President/Forester at the Society for the Protection of New Hampshire Forests for 23 years, I was interested to learn why some organizations practiced forest management on lands they own and curious about the reasons some did not. I also wanted to know how land trusts were implementing forestry practices and demonstrating them to their stakeholders.

The COVID-19 pandemic squelched my idea for visiting with land trusts. Instead, I invited 23 staffed land trusts to participate in a survey and emailed a letter and a list of questions to each. The questions were designed to stimulate conversation in follow-up telephone calls. Of the 17 organizations I spoke with, 13 are accredited by the Land Trust Accreditation Commission of the Land Trust Alliance.

This working paper lays out my findings, summarizing how each of the 17 organizations I interviewed integrates forestry practices into their organizational cultures and missions. Roughly one-third of the organizations view forestry as central to their mission. These land trusts acknowledge the history, traditions and economic values of practicing forestry, as well as the conservation objectives that can be achieved through good forestry. Most of the remaining land trusts I spoke with came to forestry through a concern for wildlife habitat, invasive species, climate change, or other conservation concerns. Forestry may not be core to their missions, but they have found it useful in addressing these concerns, as well as in achieving climate mitigation objectives.

Land trust representatives cited a number of barriers to undertaking climate-related initiatives including project cost, length of commitment required, and the complexity of undergoing carbon projects. Nonetheless, most of the organizations I spoke with now consider climate change mitigation as something that is, or will soon be, important to their work. Six have already

participated in carbon projects or aggregations to date, and at least three are considering doing so in the near future.

This paper also reviews some of the key publications and initiatives that have influenced my point of view, and that serve as the inspiration for a continuing set of efforts to promote policies and action to implement sustainable forestry efforts in New England.

It also lays out some of the steps that land trusts and other landowners can take to steward their forests in New England that do not require entry into the carbon markets. These steps can do much to mitigate climate change impacts, while achieving other landowner and land trust objectives. While some of these actions may increase sequestration and storage, landowners may not be able to quantify the results.

In addition to taking action themselves to help mitigate climate change, local and regional land trusts can collaborate with larger national and international organizations to address the common challenges we face.

There is a need for more education about the role that forestry can play in climate mitigation, from the simplest to the most complex projects. While the most effective strategies may be out of reach for some, there are still many strategies to enhance carbon sequestration and storage, while providing enjoyment of our forests and the many benefits they provide.

Introduction

New England is home to a vibrant land trust community. Several of the oldest land trusts in the world are located here, including Trustees of Reservations (the world's first land trust, established in Massachusetts in 1891), the Connecticut Forests and Parks Association (CFPA, 1895), the Massachusetts Audubon Society (1896) and The Society for the Protection of New Hampshire Forests (1901). These and many other organizations have protected and take part in the stewardship of millions of acres of land, much of it forested. These lands include conservation easements (“conservation restrictions” in Massachusetts) on lands owned by families, individuals and corporations. As the President/Forester at the Society for the Protection of New Hampshire Forests for 23 years, I was interested in how and why some organizations practiced forestry on lands they own and curious about the reasons some did not.

Originally, I had planned during the course of my Kingsbury Browne Fellowship to visit a selected group of land trusts throughout the region, talk with their executives and staff, and visit some of their lands. The COVID-19 pandemic squelched that idea. Instead, I invited 23 staffed land trusts to participate in a survey and emailed a letter and a list of questions to each (letter, questions and a list of participating land trusts are attached in Appendices A, B and C to this working paper). The questions were designed to stimulate conversation in follow-up telephone calls. Seventeen of the recipients responded along with four professionals whom I chose as informal advisors for their broad experience in land conservation.

Most of my conversations occurred during the spring and summer of 2020. As is my experience, land trust employees were generous with their time and wisdom. They were eager to share their experiences for the good of the larger community. My conversations lasted an hour or more. Several of the interviewees sent additional information or internet links after we spoke. Some wrote specific answers to the questions. Organizational websites provided additional information.

The choice of land trusts was not a random sample. I chose only organizations with paid staff. While I suspect their experiences reflect those of the larger community, the selection was neither exhaustive nor scientific. I chose to speak with organizations of various sizes with distinct missions and in different states.

Of the 17 organizations I spoke with, 13 are accredited by the Land Trust Accreditation Commission of the Land Trust Alliance. Stewardship is important in the standards that land trusts must meet for this accreditation. Among the 12 required standards, one specifies that “land trusts have a program of responsible stewardship for their conservation easements,” and another that they have a “program of responsible stewardship for the land held in fee for conservation purposes” (see: <https://www.landtrustalliance.org/topics/land-trust-standards-and-practices>).

As land trusts nationwide protect more land, their stewardship obligations grow. Furthermore, as the science on natural climate solutions evolves, land trusts are considering new climate-related forestry options on the lands they own and in the conservation easements they agree to hold.

Land trusts have a vital role to play in mitigating climate change. The lands they protect and the way in which they care for those lands can have a significant positive impact, especially in New England and other heavily forested parts of the country. Forest management has a role to play in this mitigation, and I wanted to know if and how land trusts were implementing forestry practices and demonstrating them to their stakeholders.

For the purposes of this paper I use a broad definition of “forestry” and “forest management”. A good forest management plan or strategy should include an understanding of the landowner’s ownership objectives, inventories of forest resources (tree species, ages, and sizes, delineation of wetlands, habitat classifications, the presence of rare or endangered species, invasive plants, etc.) and planning for activities to maintain or improve the resources present. A forest management plan might make recommendations regarding wildlife habitat management, recreational access, water quality protections, regeneration plans, harvesting (both economic and thinning), community engagement, economic considerations, climate mitigation, and other conservation objectives. Recommendations might also consider the location of the land in the context of the broader landscape of ownerships.

The public often conflates “forestry” with “harvesting,” and this is true for some land trust staff as well. But harvesting is only one of a number of tools used to achieve the goals of a landowner, whether a land trust or any other private or public owner.

Land Trusts with a Forestry Mission

For some organizations, forestry is central to their mission -- among them the Society for the Protection of New Hampshire Forests, The Forest Society of Maine, the Connecticut Forest and Parks Association, the Kennebec Land Trust, the New England Forestry Foundation (NEFF) and The Conservation Fund (TCF). These land trusts acknowledge the history, traditions and economic values of practicing forestry, as well as the conservation objectives that can be achieved through good forestry. Further, these organizations understand that natural areas are vitally important, as are more actively managed lands across the landscape. A review of how forestry practices are integrated into their organizational cultures and missions follows below.

- For the Society for the Protection of New Hampshire Forests (SPNHF, or the Forest Society), forestry is seen as a way for landowners to practice conservation and to keep their forests as forests, rather than converting to other (developed) uses. The Society recognizes that income from harvesting is important to some forestland owners when they consider whether to hold their land, or to sell it for development. It also recognizes that good forest management can help achieve other conservation objectives. Accordingly, the Forest Society since 1904 has made a commitment, as part of its mission, to “perpetuate the forests by their wise use and their complete reservation in places of special scenic beauty.” Management for human use and preservation have been seen, for more than a century, as two sides of the same coin. This remains true today.

SPNHF reservations that are free of donor restrictions are managed for multiple uses including recreation, water quality protection, wildlife habitat improvement and the

production of wood products. Designations of natural areas where special features and habitats require enhanced protections are included in management plans. (See <https://forestsociety.org/about-us> for more on SPNHF's forestry mission and practices.)

- The Forest Society of Maine (FSM) is an organization that holds easements on more than one million acres of forestland, most of which are former forest industry lands. Ninety percent of these lands are managed as working forests. The organization's focus is to stabilize ownership and ensure sustainable forestry practices on large tracts of land. This is consistent with FSM's tradition of pioneering "landscape-scale forestland conservation through the development and implementation of conservation easements to sustain the ecological, economic, cultural, and recreational values of Maine's forests." (See "All About FSM" at <https://www.fsmaine.org/about-fsm/>.)
- The Connecticut Forests and Parks Association (CFPA) is focused on the southern end of the New England region, where private land ownerships tend to be smaller and harvesting is perhaps more controversial. As Connecticut's oldest conservation organization, they conserve more than 2,000 acres in ownership and easements. On the lands they own, they strive to demonstrate sustainable forestry. The CFPA is "dedicated to connecting people to the land in order to protect forests, parks, walking trails, and open spaces in Connecticut for future generations." Their vision for the future is to encourage "active, lifelong engagement with Connecticut's abundant and well-managed forests, parks, and trails by building a vibrant and diverse conservation community." (See the CFPA website at www.ctwoodlands.org.)
- For the Kennebec Land Trust (KLT), forestry is today viewed as a way to support the local economy in Central Maine, and as a way to engage local landowners in educational programs that demonstrate sustainable forestry practices. The organization hasn't always embraced harvesting; a 2001 timber harvesting policy adopted by the board allowed harvesting only in exceptional circumstances. Today the organization embraces forestry, understanding that well-managed forests as well as preserves are important to maintain on the landscape.

In 2013, Kennebec founded Local Wood WORKS (LWW) with The Nature Conservancy in Maine. LWW includes seven partners "committed to advancing forest-based local economies and supporting long-term conservation and sustainability of Maine's woodlands." Among the "ideas that inform LWW initiatives" is the recognition that in the northeast "the primary threats to woodlands ... are increasing fragmentation and the permanent conversion of forestland to commercial and residential development." Note that KLT, through the LWW initiative, is "committed to promoting greater use of wood, as a locally-sourced and efficient heating alternative to fossil fuels, a light-weight and strong construction alternative to energy-intensive concrete and steel, and a means to sustain a diverse and ecologically-rich forested landscape. Wood, of course, is also aesthetically pleasing, indelibly linked to our colonial and industrial pasts, and a simple means to capture carbon dioxide, store it for generations, and thus help combat climate change." (See the KLT website for more information on the LWW program at: <https://www.tkl.org/lwwabout-2>.)

- The New England Forestry Foundation (NEFF), founded in 1944 and based in Littleton, Massachusetts, serves all six New England states. Its mission puts forestry at its core: “Through the application of our core expertise in conserving forestland and advancing Exemplary Forestry, New England Forestry Foundation... helps the people of New England to sustain their way of life, protect forest wildlife habitat and ecosystem services, and mitigate and adapt to climate change.” Among its stated core values, the organization “demonstrates continuity of purpose. NEFF was born out of the need to improve forest management and stewardship throughout the region, and the organization remains committed to those goals.” (For information on NEFF’s mission, see: [https://newenglandforestry.org/about/our-mission/.](https://newenglandforestry.org/about/our-mission/))
- The Conservation Fund (TCF) believes that “forest conservation can be both economically viable and ecologically sustainable, but like all other necessary parts of our national infrastructure, they need to be invested in and maintained.” The organization owns about 140,000 acres in New Hampshire, Maine and Vermont, almost all of which are working forests. Their model is slightly different from other land trusts. They raise funds and intervene in sales by timber investment management organizations (TIMO’s), holding land until permanent conservation solutions can be found, often with other land trusts. They sell carbon credits to pay down loans and are a sophisticated financial institution. They also use forest consultants to manage the lands they own or hold. (For more on TCF’s forest conservation work, see: <https://www.conservationfund.org/our-work/land-conservation/forest-conservation?xlimitstart=30>)

The land trusts discussed above practice and demonstrate sustainable forestry as part of the core of their conservation missions. They have foresters on staff or work closely with forestry consultants. They collaborate with other land trusts and influence other organizations and landowners by the work that they do, the forestry that they practice, and by their advocacy of sustainable forestry policies. Not all are involved in the carbon markets, but they all participate in climate initiatives in their service areas.

Other Land Trusts and Conservation Organizations with an Interest in Forestry

Other land trusts came to forestry through a concern for wildlife habitat, invasive species, climate change, or other conservation concerns. Forestry may not be core to their missions, but they have found it useful in addressing these concerns, as well as in achieving climate mitigation objectives.

- The Appalachian Mountain Club (AMC) is perhaps best known as a hiking and outdoor organization. With chapters stretching from Maine to Washington, DC, its mission is “to foster the protection, enjoyment, and understanding of the outdoors.” While perhaps not best known as a land trust, AMC does own (in fee) about 77,000 acres, mostly in Maine. The AMC does not hold conservation easements. The organization acquired its land primarily to be used for recreational purposes. It also uses its land to demonstrate sustainable forestry and to amplify carbon storage.

AMC staff and Huber Forest Consultants oversee land management, which includes two carbon projects, with a third under consideration. The first two sold carbon credits into the California market; the third will sell credits into voluntary carbon credit markets. Forest management on these lands focuses on growing older stands and higher-grade timber. Land managers also work to protect ecological reserves, wetlands and shoreland areas, and to ensure other environmental safeguards. Revenues from these lands, including revenues from carbon credit sales, help to pay taxes and support management activities. The work is performed so that it contributes to traditional economic activity in Maine.

AMC members have not always viewed forestry enthusiastically. However, in recent years the conservation aspects of management—fisheries restoration, creating and enhancing wildlife habitat, and increasing resilience and diversity—have gained wider acceptance. In addition, AMC members take pride in the fact that the Appalachian Mountain Club is at the vanguard of organizations doing carbon projects, and that the management of AMC lands is certified by the Forest Stewardship Council. AMC provides access to these lands to help recreationists and community members understand what the organization is doing to sustainably manage its properties. (For more information on AMC’s conservation practices, see <https://www.outdoors.org/conservation>.)

- Mount Grace Land Conservation Trust practices ecologically sound forest management on appropriate lands that it owns. It also supports the local timber industry. Its mission statement, however, does not specifically refer to forestry: “Mount Grace Land Conservation Trust benefits the environment, the economy, and future generations by protecting significant agricultural, natural, and scenic lands and encouraging land stewardship in northern and central Massachusetts.” Located in a rural part of the state, the organization has played a leading role in landscape conservation initiatives, such as the Tully Initiative, that have employed appropriate easement language to specify site-appropriate habitat, forestry and recreation practices. In addition, Mount Grace is exploring aggregating lands for the voluntary carbon market. (For more on Mount Grace’s mission, see: <https://www.mountgrace.org/about/mission-philosophy#>.)
- The mission of the Vermont Land Trust (VLT) is to ensure that: “current and future generations are deeply connected to the land and benefit from its deliberate protection and responsible stewardship.” In addition to protecting and stewarding land that it owns and easements that it holds throughout Vermont, VLT has, in partnership with the University of Vermont and The Nature Conservancy, recently created one of the nation’s first forest carbon cooperatives in the area of Vermont’s Cold Hollow to Canada Regional Conservation Partnership. The Cold Hollow Carbon project aggregates the carbon credits associated with the relatively small landholdings of some 10 landowners, accounting for more than 7,500 acres. Together, this group of landowners can spread the soft costs associated with a carbon project over a sufficiently large base, making the project affordable for each participating landowner. (See: <https://vlt.org/forestcarbon>; see also <https://vlt.org/forests-wildlife-nature/local-solution->

global-impact-forest-carbon.) The aggregated and certified credits are then sold into voluntary carbon markets. Unlike the California compliance market for carbon, which requires a lengthy 100-year contract, this voluntary market requires a commitment of only 40 years, overcoming one of the hurdles for landowners in selling carbon credits. (See: https://www.vlt.org/wp-content/uploads/2018/07/Vermont_Forest_Carbon.pdf.)

- The Greater Worcester Land Trust “promotes the protection, stewardship and appreciation of open space to enhance the quality of life and functioning of natural systems in Worcester and the region” (see: <http://www.gwlt.org/our-mission/>). This organization owns 1,300 acres in 32 holdings. It also holds conservation restrictions on 950 acres. While their objectives in owning land revolve around wildlife habitat and passive recreational use, they view forest management as supportive of other management objectives. As with other organizations, they have altered the timing of their harvests to coincide with drier months, instead of winter, because frozen ground has become increasingly unreliable. This is to protect the soil. Similarly, they now plant seedlings in the fall instead of spring because the autumn rains are more reliable. They manage their lands in a very public, educational way to help the public understand the importance of forestry in the landscape.
- Massachusetts Audubon’s (MassAudubon) mission is: “to protect the nature of Massachusetts for people and for wildlife.” MassAudubon protects, through fee ownership and conservation restrictions, some 38,000 acres across the Commonwealth of Massachusetts. On their permanently protected forestlands, MassAudubon practices mostly passive management, allowing forests to mature naturally to promote old growth, sequester carbon, and to remain as untouched sites for comparison to more actively managed forests. MassAudubon also practices some active forest management, mostly to restore or protect wildlife habitats. It recently entered the California carbon market, enrolling 10,000 acres. Unlike some carbon projects, these lands will be passively managed: “by enrolling the 10,000 acres and selling the offset credits, Mass Audubon has committed to maintaining the carbon stored in these forests for at least 100 years. In return, the funds generated from the sale will support our work—including land stewardship and climate education programs—so we can continue to fight against climate change in all that we do.” (For more information on the Mass Audubon carbon capture effort, see <https://www.massaudubon.org/our-conservation-work/ecological-management/habitat-management/capturing-carbon/carbon-capture-faqs>.)
- The Trustees of Reservations (TTOR, or “The Trustees”), established by Charles Eliot in 1891, has a broader mission than many other land trusts: “We’re here to protect and share the Massachusetts places people love for their exceptional scenic, historic, and ecological value. For their trails, their history, their gardens, their beaches. For the simple reason that nature and culture can soothe the soul and improve our lives.” When The Trustees practice forestry, it tends to be for purposes of enhancing forest health and resiliency, improving wildlife habitat, or increasing carbon sequestration across habitats. TTOR easements do not prohibit forestry. At present, The Trustees’ focus on adaptation to climate change centers largely on the coast of Massachusetts. One such project is the Boston Waterfront Initiative. (See: <https://thetrustees.org/boston-waterfront-initiative/>.)

- The Squam Lakes Conservation Society (SLCS, with information available at <https://www.squamslantrust.org/who-we-are/>) has forest inventories and management plans prepared by a consulting forester for all of its properties. However, the organization's lands tend to be small, watershed areas that protect Squam Lake and its water quality. For the most part they are inappropriate for active forestry purposes. The easements it holds encourage forestry activities where appropriate. Although the organization is in ongoing conversations about carbon sequestration and storage, its participation in a carbon market seems unlikely due to the size of its ownership.
- The Maine Coast Heritage Trust (MCHT) owns land where conservation objectives are difficult to achieve by partial ownership (such as an easement). So much land is actively managed in Maine that MCHT feels its role is in providing coastal access, protecting scenic resources, and safeguarding ecological resources. Their easements allow forestry. While there are no plans to participate in carbon markets, MCHT management can see the impact of climate change on rising sea levels, increasing wind, more invasive species, an increased need for trail maintenance, and other impacts. They are deeply involved in discussing climate mitigation and think there is a strong argument that storing carbon is best achieved by letting trees grow. (For information on MCHT's response to climate change, see <https://www.mcht.org/story-tag/responding-to-climate-change/>.)
- The Vermont Chapter of The Nature Conservancy (TNC) is, perhaps, somewhat ambivalent about forestry. They own at least two properties with forest management plans, but most of the land they actively manage is for habitat improvement or resiliency. This is consistent with their goals to "preserve nature and its ability to exist over time and replicate itself." As with MCHT, they see the need to provide unmanaged lands in the context of landscapes that are mostly managed. It is important to note, however, that the TNC, in partnership with Amazon.com, as well as the Vermont Land Trust and the University of Vermont, has been closely involved with the Cold Hollow Carbon project mentioned above. (See <https://www.nature.org/en-us/what-we-do/our-insights/perspectives/family-forests-powerhouse-in-climate-mitigation/>.)
- The Upper Valley Land Trust (UVLT, with a website at www.uvlt.org) has a goal for its forest protection: "supporting the working forest economy and connecting the places plants and animals need to adapt and thrive." They have lands and easements that are managed, and they have been deeply engaged in conversations about the meaning of sustainable forestry. They own more than 6,000 acres in 24 conservation areas but are not considering a carbon project at this time. They observe that there's a lack of clarity on the science of carbon storage and sequestration, and how to manage for it.
- Ausbon Sargent Land Preservation Trust (ASLPT, www.ausbonsargent.org) is a regional land trust with a local focus: "Our mission is to preserve and protect the rural character of the Mt. Kearsarge/Ragged/Lake Sunapee region for public benefit." Like other more local land trusts, it has some ownerships where the forests are managed actively. Its easements allow forestry and the organization sees it as a legitimate use of

land. ASLPT considers climate change and the TNC resiliency maps when evaluating a property for acquisition, but it's not considering a carbon project at this time.

In New England forest management is very much a part of the history of land use and the traditions, economies, and culture of the region. While not all land trusts practice forestry on lands they own, the ones included in this study allow or encourage sustainable forest practices in the easements they hold.

These organizations are very much aware of the importance of forests as natural climate solutions and are weighing their options for how to best manage the lands they own for carbon sequestration and storage. None of them are strictly opposed to active forest management, but on the lands that they own their land management practices are aligned with their missions. As the author of this paper and the individual who conducted each of the survey interviews, I was impressed with the depth of consideration these land trusts are investing in exploring their role in climate mitigation.

Influential Publications and Initiatives

In considering the roles of forestry and conservation in New England, several publications and initiatives have influenced my point of view. These publications are highlighted here.

The series of *Losing Ground* publications of Massachusetts Audubon have been important in heightening our understanding of land conserved, and land consumed by development in Massachusetts. The sixth edition of *Losing Ground*, with Heidi Ricci as its lead author, was published in 2020.¹ The first edition was published in 1987.

In 1994 the New Hampshire Chapter of The Nature Conservancy launched the Great Bay Resource Protection Partnership (www.greatbaypartnership.org) to promote landscape-scale land conservation and stewardship to protect the Great Bay's watershed. The partnership is a collaboration of organizations to promote shared conservation goals, including the conservation of the working (forested) landscape.

The Great Bay Partnership was a predecessor to the Quabbin to Cardigan Initiative (www.q2cpartnership.org) spearheaded by the Society for the Protection of New Hampshire Forests in 2003 to conserve the Monadnock Highlands of western New Hampshire and north-central Massachusetts. This area is largely forested and relatively intact. It protects drinking water for almost 200 municipalities, including Boston. Habitat conservation is a high priority of the Initiative and the region's "managed timberlands are an important source of forest products and renewable energy and are a highly efficient carbon sink." Both partnerships rely on collaborative conservation planning and mapping to focus on the most important resources for protection.

A publication similar to MassAudubon's *Losing Ground* focused on New Hampshire, appropriately titled, *New Hampshire's Changing Landscape 2005*, was published by the Society for the Protection of New Hampshire Forests. This publication, authored largely by Dan

Sundquist, demonstrated the need for accelerated land protection in the Granite State, and was influential in the establishment of the Land and Community Heritage Investment Program (LCHIP), which provides funding for land protection and historic preservation.²

In 2002, Mary Berlik, David Kittredge and David Foster published a paper called, “The Illusion of Preservation: A Global Environmental Argument for the Local Production of Natural Resources,”³ In the paper, they argue that “although citizens of affluent countries may imagine that preservationist domestic policies are conserving resources and protecting nature, heavy consumption rates necessitate resource extraction elsewhere and oftentimes under weak environmental oversight.” They point out that this “illusion” leads to greater environmental damage than if resources, particularly wood, were resourced more locally in affluent countries and paired with reductions in consumption. Further, they recommend that the US should strive to “(1) reduce per capita consumption of wood and its substitutes, (2) recycle forest products more effectively, (3) protect extensive areas of intensively managed and unmanaged forests, and (4) promote sound forest management where the environmental consequences are mild.”

That paper was a predecessor to the first *Wildlands and Woodlands* report, which was focused, as was the “Illusion of Preservation” paper, on land use in the Commonwealth of Massachusetts. Published by the Harvard Forest in 2005, *Wildlands and Woodlands: A Vision for the Forests of Massachusetts*,⁴ was co-authored by David Foster, David Kittredge, Brian Donahue, Glenn Motzkin, David Orwig, Aaron Ellison, Brian Hall, Betsy Colburn and Anthony D’Amato. This report calls for the protection of both relatively untouched forests (“wildlands”) and forests that are sustainably managed for the production of wood products and other benefits (“woodlands”).

A second *Wildlands and Woodlands* report published in 2010, focused on forests across all six New England States. The report was a collaboration of 20 scholars from around the region, again led by David Foster. *Wildlands and Woodlands: A Vision for the New England Landscape*⁵ called for upping the pace of land protection across all six states to conserve a combined wildlands and woodlands total of 70 percent of New England forests over the course of the next six or seven decades.

Seven years later, the vision again expanded to include the protection of farmland and communities as well as wildlands and woodlands. The report, *Wildlands and Woodlands, Farmlands and Communities: Broadening the Vision for New England*,⁶ “calls for retaining and permanently protecting at least 70 percent of the landscape (30 million acres) in forestland and another 7 percent (2.8 million acres) in farmland by 2060.... Most of the forests would be managed as woodlands for wood products and other benefits, while at least 10 percent (3 million acres) would be designated as wildland reserves”.

These reports, partnerships, and initiatives have served as the inspiration for a continuing set of efforts to promote policies and action to implement the visions outlined. Organizations, agencies, partnerships and individuals across the region are working toward these aspirations. For example the Highstead Foundation, based in Redding, Connecticut, now hosts a website (www.wildlandsandwoodlands.org) focused on Wildlands and Woodlands-related initiatives. In addition, Highstead plays a key role in sustaining an array of programs, such as the Regional

Conservation Partnership Network (RCP Network) and Academics for Land Protection in New England (ALPINE) that advance the key goals across the region.

While none of these reports principally focus on climate change, they do set the groundwork for a number of climate change-related forestry efforts in New England. These include the New England Forestry Foundation's (NEFF) Forest to Cities Challenge. The Challenge advocates a broad systems approach to addressing the role of forests and forest management in mitigating climate change. NEFF outlines forestry standards that over time will increase carbon sequestration, the production of forest products, and growing stock in managed forests all at the same time. Importantly, they propose harvesting responsibly, and using the wood to build cross-laminated timber buildings that continue to store the carbon. The wood in the buildings replaces the need for more energy and resource-depleting use of steel or cement. Buildings made with wood release fewer greenhouse gases and continue to store the carbon for extended periods of time.

Additional Resources for Land Trusts

As concern regarding climate change accelerates in the New England region, the United States, and across the globe, the science on carbon sequestration and storage is also evolving. In this era of rapid social and scientific change, many land trusts are left with questions about how to proceed. Land trust representatives interviewed for this study, who are not considering carbon projects, cite a number of barriers that have prevented their organizations from undertaking climate-related initiatives at this time. The barriers include project cost, length of commitment required, and the complexity of undergoing carbon projects. Nonetheless, most of these organizations now consider climate change mitigation as something that is, or will soon be, important to their work. That said, of the 17 organizations interviewed for this study, six have already participated in carbon projects or aggregations to date, and at least three are considering doing so in the near future.

New England is fortunate to have a robust infrastructure supportive of land trusts. That infrastructure includes data, research, conferences, experts, and expertise shared by organizations in the public, private, non-profit and academic sectors. These resources are offered in various forms by local, state and national governmental agencies; colleges and universities; local, regional and national operating foundations and philanthropies; and private firms focused in a variety of fields, from forestry consultants to geographic information systems.

It is not the purpose of this study to research climate mitigation programs or carbon markets, other than to observe that there are existing and emerging resources ready to assist land trusts as they consider how to manage their lands and how to assess the viability of a carbon project for their lands, or the lands of landowners in their networks. Useful resources of note include:

- The University of Massachusetts Amherst, in conjunction with the USDA Forest Service, has created a Family Forest Research Center that investigates family ownerships and owners' knowledge of conservation options. Climate change and carbon storage are

among the topics being explored. Presentations and research papers by the Center are helpful to land trusts. (See: www.familyforestresearchcenter.org.)

- Highstead hosts the Regional Conservation Partnership (RCP) network and its conferences, working to increase the pace and scale of conservation in the region. These collaborations work to protect land across boundaries to achieve broader conservation objectives across landscapes. (See: www.highstead.org.)
- The Boston office of The Nature Conservancy (TNC) is an active participant in providing science to support land conservation. A number of land trusts interviewed for this study use TNC's Resilience Land Mapping Tool for evaluating potential land or easement acquisitions. The maps score lands according to their resiliency and potential to adapt to climate change, based on characteristics including lack of human disturbance, connectedness, diversity of landforms, geomorphology and other characteristics. (For a Story Map depicting where the mapping tool is being used, see: <https://storymaps.arcgis.com/stories/86c89e79e9bf405cac71a71a0fd93590>. For a recent profile of resilient landscapes see: <https://www.nature.org/en-us/what-we-do/our-priorities/protect-water-and-land/land-and-water-stories/climate-resilient-network/>.)
- The Land Trust Alliance at the national level has embarked on a Land and Climate Program that includes a carbon offset program with Finite Carbon to assist land trusts in evaluating and participating in voluntary carbon markets. The alliance website has pages dedicated to climate change to help land trusts. (For more information, see: <https://www.landtrustalliance.org/land-trust-alliance-announces-pilot-project-assist-land-trusts-accessing-carbon-markets>.)
- In addition to the national Land Trust Alliance, New England states have land trust coalitions for sharing information and experience to strengthen land conservation and advocate policies that are conducive to conservation including: the Maine Land Trust Network (www.mltn.org), hosted by the Maine Coast Heritage Trust; the New Hampshire Land Trust Coalition (www.nhltc.org), hosted by the UNH Cooperative Extension Service; the Massachusetts Land Trust Coalition (www.massland.org); and the Connecticut Land Conservation Council (www.ctconservation.org).
- The New England Forestry Foundation (NEFF) has developed guidelines for “Exemplary Forestry in the 21st Century” for forests in the “Acadian Forest”—a broad band of forestlands that receives steady rainfall and sweeps across northern New England and up into Canada. These guidelines have been designed with particular attention to wildlife, wood products and climate mitigation. (For more information, see <https://newenglandforestry.org/learn/initiatives/exemplary-forestry/>.) NEFF plans to develop guidelines for other regions as well. As these programs become more widely available, their value to forestland owners will grow.

Looking Forward

As we enter the 2020s, land trusts that practice forestry, either as part of their core mission, or as an ongoing aspect of operations, will increasingly look to the role that forests can play in mitigating climate change. Some land trusts will consider participation in carbon markets. While the emphasis on carbon markets is commendable, there are actions that land trusts and other landowners can take to steward their forests in New England that do not require overcoming each of the challenges to entering the carbon markets. These steps can do much to mitigate climate change impacts, while achieving other landowner and land trust objectives. While some of these actions may increase sequestration and storage, the landowners may not be able to quantify the results.

- First and foremost, I believe, will be the work done by land trusts to keep forests as forests. Land trusts are experts at conserving land and preventing forestland development. In working to keep forests as forests, land trusts can allow forests to continue growing and storing carbon. One of the principal ways that land trusts can keep forests as forests is to acquire land in fee simple, or, alternatively, to acquire conservation easements on forestland to be held in perpetuity. Doing so removes the land from development pressures that could convert forests to other uses that in most cases would contribute to climate change rather than ameliorate it.
- Land trusts can also help the landowners with whom they engage to use increasingly sustainable practices to harvest wood products for sale. At its most basic, this means not harvesting more than the forest is growing. Retaining conservation-minded foresters can help landowners achieve this goal. For land trusts working with foresters, this may mean that both the forester and the organization benefit from the expertise of the other, creating a meaningful peer-to-peer learning among professionals with relevant experience and knowledge. For some landowners, the intermittent income from forestry projects may be enough to allow them to keep their land and the carbon stored in their forests.
- Demonstrating sustainable forestry practices and educating the public about their benefits is another way that land trusts can promote the benefits of forests as natural climate solutions. Habitat enhancement, management of destructive invasive plants and animals, and other approaches may resonate with the public more than “forestry.” Most of the organizations interviewed for this study regularly conduct forest tours for their members, friends and neighbors.

In addition to taking action themselves to help mitigate climate change, local and regional land trusts can collaborate with larger national and international organizations to address the common challenges we face.

For example, The Nature Conservancy and the American Forest Foundation have partnered with lead funding from Amazon to form the Family Forest Carbon project to overcome barriers for small woodland owners to participate in meaningful carbon mitigation. (As discussed previously, TNC and Amazon helped the Vermont Land Trust complete a forest carbon aggregation project.) The Family Forest Carbon project generally covers the cost of contracting foresters to do

management plans that enhance carbon storage, but also improve wildlife habitat, protect water quality, and provide other ecosystem services valued by landowners. This approach requires a 10 to 20 year commitment, rather than the 99-year commitment usually required to sell credits into compulsory, or regulated carbon markets, such as the one in California.

Land trusts would benefit from a road map to assist them in evaluating where they are in the continuum of climate mitigation and forestry strategies. While the use of local resources (for example, consulting foresters, universities, Cooperative Extension Services, state forestry organizations, operating foundations and philanthropies) may be the most effective in assisting land trusts on the ground, a more robust convening at the national level could benefit the land trust community, and the landowners and communities they serve.

There is no one climate solution for every land trust or every landowner that they serve. There is a need for more education about the role that forestry can play in climate mitigation, from the simplest to the most complex projects. While the most effective strategies may be out of reach for some, there are still many strategies to enhance carbon sequestration and storage, while providing enjoyment of our forests and the many benefits they provide.

References

1. Ricci, Heidi, Jeffrey Collins, Jack Clarke, Paige Dolci, and Lauren de la Parra. 2020. *Losing Ground: Nature's Value in a Changing Climate*. Lincoln, MA: Massachusetts Audubon Society, Inc. <https://www.massaudubon.org/our-conservation-work/advocacy/shaping-the-future-of-your-community/publications-community-resources/losing-ground>.
2. Society for the Protection of New Hampshire Forests. 2005. *New Hampshire's Changing Landscape 2005*. Concord, NH: Society for the Protection of New Hampshire Forests. https://forestsociety.org/sites/default/files/NHChangingLandscape_2005.pdf.
3. Berlik, Mary M., David B. Kittredge, and David R. Foster. 2002. "The Illusion of Preservation: A Global Environmental Argument for the Local Production of Natural Resources." *Journal of Biogeography* 29 (10–11): 1557–68. <https://doi.org/10.1046/j.1365-2699.2002.00768.x>.
4. Foster, David, David Kittredge, Brian Donahue, Glenn Motzkin, David Orwig, Aaron Ellison, Brian Hall, Betsy Colburn and Anthony D'Amato. 2005. *Wildlands and Woodlands: A Vision for the Forests of Massachusetts*. Harvard Forest, Harvard University. <http://www.wildlandsandwoodlands.org/vision/vision-new-england>.
5. Foster, David R., Brian M. Donahue, David B. Kittredge, Kathleen F. Lambert, Malcolm L. Hunter, Brian R. Hall, Lloyd C. Irland, Robert J. Lillieholm, David A. Orwig, Anthony W. D'Amato, Elizabeth A. Colburn, Jonathan R. Thompson, James N. Levitt, Aaron M. Ellison, William S. Keeton, John D. Aber, Charles V. Cogbill, Charles T. Driscoll, Timothy J. Fahey, Clarisse M. Hart. 2010. *Wildlands and Woodlands: A Vision for New England Landscape*. Harvard Forest, Harvard University. <http://www.wildlandsandwoodlands.org/vision/vision-new-england>.
6. Foster, David, 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. 2010. *Wildlands and Woodlands, Farmlands and Communities*. Harvard Forest, Harvard University, page 3. <http://www.wildlandsandwoodlands.org/vision/vision-new-england>.

Appendix A

236 Deer Meadow Road
Webster, NH 03303

May, 2020

Dear _____:

As part of my Kingsbury Browne Fellowship in conjunction with the Lincoln Institute of Land Policy and the Land Trust Alliance, I am interviewing a select group of northeastern land trusts about the management of their fee-owned lands. In particular, I'm interested to know if you practice sustainable forestry on those lands.

I had originally hoped to visit with you and perhaps even tour some of your lands, but the current pandemic has dashed that plan. I'm hoping you'll be willing to talk with me by telephone, Facetime or Skype sometime in the near future. I've attached a list of questions to stir your thinking, but I'm really looking for a conversation, not just answers to a particular set of questions.

I will keep your identity and that of your land trust confidential unless I have specific permission from you to do otherwise. I'm interested in trends, not individual case studies.

I realize these are extraordinary times and that you are likely challenged by today's circumstances. But if you could spare a half hour to chat with me, I'd be grateful.

The result of these interviews will be a paper I submit to the Lincoln Institute and the Land Trust Alliance. With this "census" I hope to capture a sense of how land trusts in New England approach land management and how that management advances other goals of organizations and the communities they serve.

I hope you'll participate! Please let me know of your willingness and I'll be in touch with you to set up a time for a conversation.

Thanks for considering this request.

For the forest,

Jane A. Difley

Retired President/Forester
Society for the Protection of New Hampshire Forests

Appendix B

Questions on Land Management

Does your land trust own forestland? If so, how many acres? Parcel sizes? Number of separate holdings?

Does your land trust hold conservation easements (conservation restrictions)? If so, how many acres? How many landowners?

What are your primary objectives in owning land? In managing it?

Do you see forest management as supporting those objectives? In conflict with them?

Do your easements encourage forest management? Prohibit it? Or are they silent on forestry? If your easements encourage sustainable forest management, what guidelines and/or criteria (if any) does the easement include for forestry?

Do you have forestry professionals on staff? Do you use forestry consultants?

If you don't practice forestry on the lands you own, is this an affirmative choice? If so what are the reasons for this choice?

How is your board engaged in the management of your lands?

Are your members supportive of forest management?

Has climate change influenced the way you manage the lands you own? If so, how?

Have you participated in carbon markets? If so, in which markets? How has this influenced your management practices?

Are there other observations you'd like to make about land trusts and land management?

(I will keep your answers confidential unless you give me permission to do otherwise. If for example, you say something singular that I want to quote, I will contact you for permission and understand if you do not want to be quoted or identified.)

Jane Difley
May 2020

Appendix C

Land Trust Contacts

Appalachian Mountain Club
Susan Arnold, Vice President of Conservation

Ausbon Sargent Land Preservation Trust
Debbie Stanley, Executive Director

Connecticut Forests and Parks Association
Lindsay Suhr, Land Conservation Director

The Conservation Fund
Tom Duffus, Vice President and Northeast Representative

Forest Society of Maine
Karin Tilberg, Executive Director

The Greater Worcester Land Trust
Colin Novick, Executive Director

Kennebec Land Trust
Theresa Kerchner, Executive Director

Maine Coast Heritage Trust
Tim Glidden, President
Jane Arbuckle, Director of Stewardship

Massachusetts Audubon
Jeff Collins, Director of Conservation Science
Tom Lautzenheiser, Regional Scientist

Mount Grace Land Trust
Leigh Youngblood, former Executive Director, now Senior Advisor
Emma Ellsworth, Executive Director

The New England Forestry Foundation
Robert Perschel, Executive Director

Society for the Protection of New Hampshire Forests
Jack Savage, President

Squam Lakes Conservation Society
Roger LaRochelle, Executive Director

Trustees of Reservations
Julie Richburg, Lead Ecologist, Inland Natural Resources

Upper Valley Land Trust
Jeanie McIntyre, President

Vermont Land Trust
Nick Richardson, President and CEO

The Nature Conservancy in Vermont
Jim Shallow, Director of Strategic Conservation Initiatives

Other Individuals Consulted

Bill Labich, Senior Conservationist
Highstead

Jim Levitt
Lincoln Institute of Land Policy

Peter Stein, Managing Director
Lyme Timber Company

Henry Tepper
Conservation consultant
