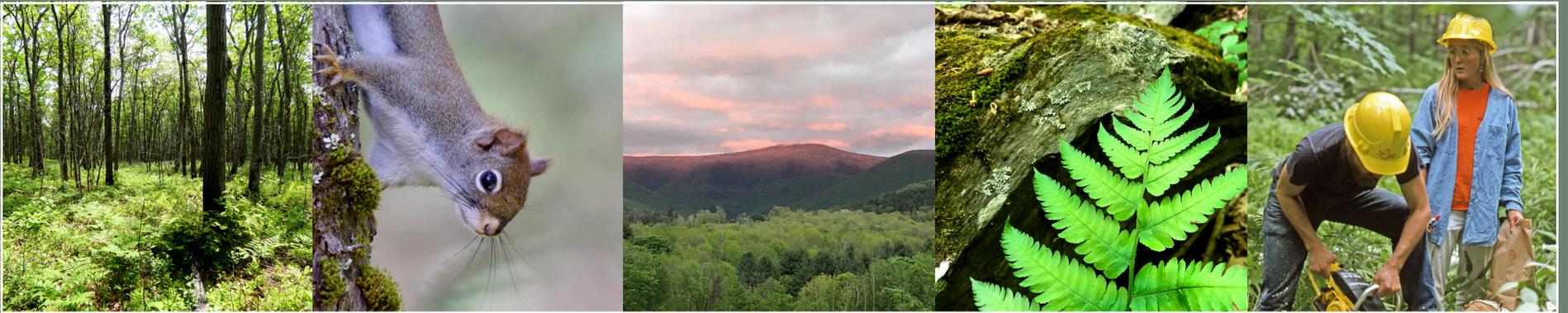


WOODLANDS PARTNERSHIP of NORTHWEST MASSACHUSETTS

A Plan for Forest-Based Economic Development & Conservation



JANUARY 2023

This plan is a revised version of the 2015 plan produced for the Partnership by employees of the Franklin Regional Council of Governments and the Berkshire Regional Planning Commission. Additional research and writing for this updated version (2023) was provided by Henry W. Art, Whit Sanford, Lisa Hayden, Sophie Argetsinger, and Robert O'Connor, with input from Partnership Board members and members of the public.

Design by Sophie Argetsinger.

Note: The legislation that created the Mohawk Trail Woodlands Partnership—now operating as the Woodlands Partnership of Northwest Massachusetts—and the bylaws by which that public body conducts its business, stipulates that the 10-year plan be reviewed on an annual basis and revised accordingly.

On the cover, left to right: Post-fire recovery of oak forest on Pine Cobble, Williamstown (Henry W. Art); Red squirrel, Rowe (Hunter Gibson); Mount Greylock and Hopper, Williamstown (Henry W. Art); *Dryopteris goldieana*, Rowe (Sophie Argetsinger); Forest research in Hopkins Memorial Forest, Williams College (Henry W. Art).

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SECTION ONE Executive Summary

LAND ACKNOWLEDGMENT

It is with gratitude and humility that we acknowledge that we are learning, speaking, working, and gathering on the ancestral homelands of the Mohican, Pocumtuc, Nipmuc, and Abenaki people, who are the Indigenous peoples of this land. We pay honor and respect to their ancestors past and present as we commit to building a more inclusive and equitable space for all.

THE WOODLANDS PARTNERSHIP of Northwest Massachusetts (previously known as the Mohawk Trail Woodlands Partnership, see *Sidebar: The Partnership's new Name* on page 11) is a unique local effort to both conserve our forests and enhance our region's rural, land-based economy across the Northern Berkshire Mountains, hill towns, and riverside villages of northwestern Massachusetts.

In 2013, a group of citizens who live and work in the northwestern corner of the state came together as leaders and representatives from about 30 entities—towns, nonprofit organizations, and business and academic organizations—to work cooperatively with the regional planning agencies in Franklin and Berkshire Counties, the State, and the U.S. Forest Service to create the Woodlands Partnership and further its goals.

SECTION 1: EXECUTIVE SUMMARY

The legislature of the Commonwealth of Massachusetts passed authorizing legislation¹ in 2018 to establish the Mohawk Trail Woodlands Partnership (MTWP) as a public body, and to create both an operational Woodlands Partnership Fund and an Investment Trust Fund for the region.

In November 2019, the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) and the U.S. Forest Service signed a Shared Stewardship Framework pledging cooperation on outreach and education to the communities, research

1. General Laws: Sections 89–91 Amended, Chapter 209 Acts of 2018. <https://malegislature.gov/laws/sessionlaws/acts/2018/chapter209>

2. Municipalities in the designated region can vote to join the Partnership. Towns that did not join by the 2020 legislative deadline must wait five years

and demonstration of “exemplary sustainable forest management practices,” and technical assistance related to local recreation and tourism.

Municipalities in the defined eligibility area (see Map 1.1) can vote by Select Board, town meeting, or Mayoral decision to join the Partnership and garner its benefits.² The first 11 towns to opt in sparked the creation of the Partnership Board, and, as of October 2022, 17 of 21 eligible towns have voted to join.

from the law’s 2018 passage, until 2023, to become full member towns (i.e., Hawley), but, following their local vote to join, would be eligible to apply for a state grant program in the interim.

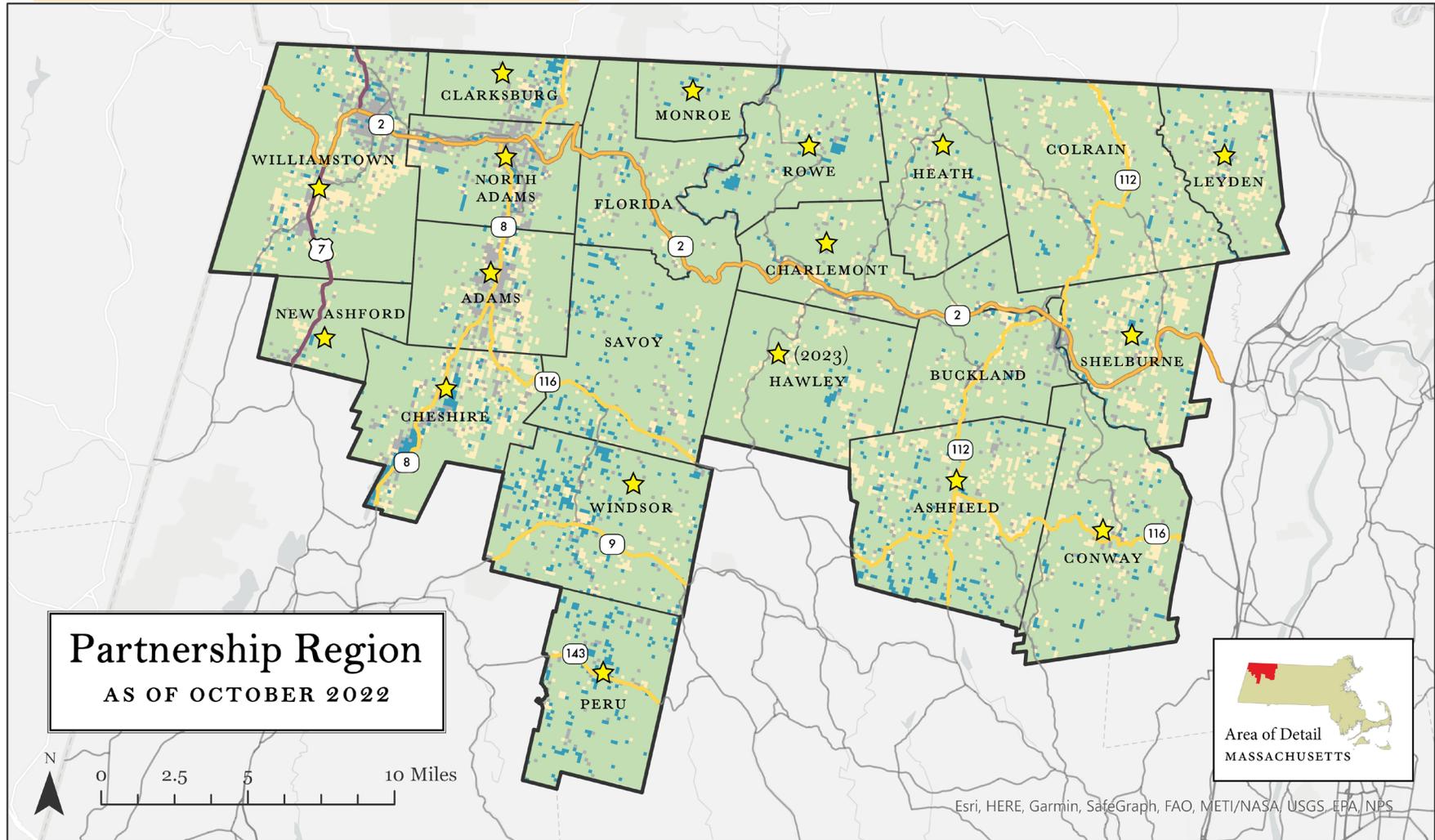


Snowshoer at Chapel Falls, Ashfield. Photo: Emily Johnson

The Place and Its People

The Northern Berkshire Mountains in Massachusetts are rich with natural resources. The Deerfield and Hoosic Rivers flow through expanses of spruce-fir, northern hardwood, and transi-

tion oak-hickory forests among scenic mountains with farms and homes scattered along the rural roads of Western Franklin and Northern Berkshire Counties.



Partnership Region
AS OF OCTOBER 2022



Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

LEGEND			Scale: 1:300,000
	PARTNERSHIP REGION		MA RTE. 2 / MOHAWK TRAIL
	TOWN BORDER		U.S. ROUTE
	TOWNS THAT HAVE OPTED IN		STATE ROUTE
	FOREST		WATER OR WETLAND
	CULTIVATED		DEVELOPED

SECTION 2: PARTNERSHIP REGION IN FOCUS

For thousands of years, Indigenous Peoples thrived in the area³ before Europeans settled on unceded lands⁴ to farm and establish small hamlets along the rivers. The principal tribes in the Berkshire Mountains and foothills were the Mohicans (Mahikans) in what is now Berkshire County, including the Stockbridge-Munsee Band of Mohicans,⁵ the Abenaki⁶ in Franklin County, the Pocumtuc⁷ near Deerfield in areas flanking the Connecticut River, and the Nipmuc⁸ in what is now Central Massachusetts. These tribal nations established a footpath, a corridor between the Connecticut and Hudson Rivers. The Mohawk⁹ people, who utilized the path, lived in the Hudson River Valley in what became New York State. In 1914, MA-Route 2—established largely following the Indigenous footpath—became the state’s first scenic highway, named the Mohawk Trail. Since then, millions of people have traveled to the Northern Berkshires and hill towns of western Franklin County to enjoy the region’s scenery, rural setting, natural resources, and the outdoor activities the mountains provide. These attractions have made tourism a prime economic driver for Main Street businesses and secluded recreation-based enterprises alike. In January 2021, the U.S. Department of Transportation designated the Mohawk Trail a National Scenic Byway.¹⁰ Today, many people, whether farmers or small business owners, make their living off the

3. Native Land Digital. 2021. Our Home on Native Land. <https://native-land.ca/>

4. Many First Nations people never ceded or legally signed away their lands. See: Guide to Indigenous Land and Territorial Acknowledgments for Cultural Institutions. <https://as.nyu.edu/research-centers/npf/Land0.html>

5. Stockbridge Munsee Community. <https://www.mohican.com/brief-history/>

6. Nulhegan Band of the Coosuk Abenaki Nation. <https://abenakitribe.org/>

region’s woodlands by running recreation-based businesses, selling firewood from their woodlots, making and selling fine crafts and woodland products like maple syrup, harvesting timber for furniture, flooring, and housing, or working as foresters. During the Industrial Revolution, historic downtowns and close-knit residential neighborhoods developed into larger employment centers along the region’s rivers.

The region’s mountain landscape, rivers, diverse wildlife and plant life, woodlands, and farms provide a scenic and beautiful place to live, work, and play. More importantly, these landscape features provide environmental functions and health benefits. Forests in the region provide Massachusetts, and more broadly, New England, with critical ecological services including water supply recharge, flood mitigation, wildlife habitat, oxygen production, water and air purification, and carbon storage—all of which are crucial to sustain life in this era of rapid climate change.

The Woodlands Partnership Landscape

The forests and watersheds of the Northern Berkshire Mountains and foothills are the focus of the Woodlands Partnership.¹¹ Often described as the most rural and heavily forested corner of the

7. Pocumtuc History. <http://www.dickshovel.com/pocu.html>

8. Tribal Government of the Nipmuc Nation. <https://www.nipmucnation.org/>

9. Saint Regis Mohawk Tribe. <https://www.srmt-nsn.gov/about-the-tribe>

10. National Scenic Byways Program. https://www.fhwa.dot.gov/hep/scenic_byways/designations/2021_designated_byways.cfm

11. The Northern Berkshires include 11 towns in western Franklin and 10 towns Northern Berkshire Counties.

Partnership Board Votes to Approve New Name: Woodlands Partnership of Northwest Massachusetts

At its October 2022 meeting, the Board of the Mohawk Trail Woodlands Partnership voted unanimously (19–0) to change its name from the “Mohawk Trail Woodlands Partnership” to the “Woodlands Partnership of Northwest Massachusetts,” for the purposes of regular business. The Board vote acknowledged that this change likely requires state legislative action in order to be established legally, and includes a request for the Commonwealth to endorse the new name.

The name change discussion recognized that while the use of the Mohawk Trail highway in the original Partnership name may have been chosen as a way to connect Berkshire and Franklin Counties, there are a number of reasons why the name change makes sense at this phase of the Partnership. Motivation for the name change includes the following reasons discussed by the Board:

1. The Partnership has received feedback from some local Indigenous Peoples representatives who would prefer the Partnership not use the appropriated name of an Indigenous group.
2. The Mohawk tribe—unlike the Mohican, Pocumtuck, Abenaki, and Nipmuc tribes—did not live for long periods in the Partnership’s geographic boundaries, although they moved through the region on a footpath. Thus, the former Partnership name may have contributed to masking or making more invisible the presence of Mohican, Pocumtuck, Abenaki, and Nipmuc Peoples who still live in the area.
3. The highway that uses the name Mohawk Trail (MA-Route 2) is situated in only a third of the municipalities in the current Partnership boundaries.
4. In the future, the Partnership may wish to extend its boundaries further south and east to include more municipalities that are located even further away from the MA-Route 2 corridor.
5. A woodlands partnership devoted to forest conservation and sustainable natural resource-based economic development may want to distance itself from association with a State highway, with which it might be confused to have a relationship.

Below is the text of the Board resolution approved on October 11, 2022:

“The Mohawk Trail Woodlands Partnership,” a public body established by Massachusetts House Bill No. 4835 filed on 26 July 2018 and signed into law on 31 October 2018, will conduct its work known as “The Woodlands Partnership of Northwest Massachusetts,” and change its bylaws to reflect said change in name ... We furthermore request that the legislature of the Commonwealth of Massachusetts and the U.S Department of Agriculture–U.S. Forest Service officially establish and recognize the name of the public body formerly known as “The Mohawk Trail Woodlands Partnership” as being henceforth the “Woodlands Partnership of Northwest Massachusetts.”

SECTION 1: EXECUTIVE SUMMARY

Commonwealth (83% forested),¹² the region has a population density of 87 people per square mile (compared to 884 state-wide). The population of this region is statistically older and less ethnically diverse than the rest of the state, and is also declining in numbers—by almost 5% between 2010 and 2020—with a similar decline anticipated by 2040.

The low population density, with many towns having populations of less than 1,000 people, has created challenges for small-town governments to maintain a tax base to adequately fund some

12. 86% of the approximately 666,000 acres of Protected and Recreational Open Space in the region is privately owned. This includes private for profit, private nonprofit, and land trust properties. MassGIS (Bureau of Geographic

public services and staff positions. Thus, residents identified municipal sustainability as another focus of the Woodlands Partnership, in concert with economic development that recognizes the importance of the forest resources in the region. Nine of the 21 towns in the Partnership region are listed as Environmental Justice communities according to the Executive Office of Energy and Environmental Affairs, most based on income criteria (see Map 2.1).

Information), Commonwealth of Massachusetts EOTSS. Layers: Land Cover / Land Use (2016); Protected and Recreational Open Space (2021).



*Belding Memorial Library,
Ashfield. Photo: Sophie
Argetsinger.*

Gathering Public Insights on the Partnership and Its Plan

This 2022 Plan revision for the Woodlands Partnership of Northwest Massachusetts is required by the 2018 Massachusetts law that created the Partnership, which called for a revised plan within three years after the formation of the Board.

The first Plan, developed for the Partnership in 2015 and revised in 2016, followed extensive public comment meetings that were held throughout the 21-town Partnership region (see Appendix D for details). As the Board and Administrative Agent began to focus on the Plan update in fall 2021, the COVID-19 pandemic was still underway even as vaccinations became available. Therefore, most meetings of the Partnership during this Plan review period occurred over Zoom, and only began to return to hybrid format as of June 2022 (partial in-person meetings with an option to join remotely).

Drafting of the next 10-year Plan through 2032 got underway in earnest in January 2022. As the Agent staff completed work to update the natural resources inventory and town-by-town and regional statistics in the new plan with the latest Census data and GIS mapping available, the following outreach activity was conducted to allow for public comment on the draft content as well as broader feedback about the Partnership's mission and projects:

- The Board's six Standing Committees (Executive; Finance & Budgeting; Forest Conservation; Natural Resource-Based Economic Development; Municipal Financial Sustainability; Education, Outreach & Research) focused on possible project priorities in summer and fall 2021.
- Board members were invited to comment and make recommendations on a first draft revision of the Plan in spring 2022.
- A full draft of the Plan was posted on the Partnership website for public comment from June to September 2022.
- Two public listening session webinars that were promoted in local media and flyers posted in Town Halls, were held via Zoom on Aug. 24 and Sept. 14, with some specific public feedback incorporated into the final draft.
- Representatives of local Indigenous Peoples were invited to review the draft plan and offer feedback.
- The Agent, Board Chair, and Board members representing towns met with Select Boards of member municipalities from May through September 2022, providing an opportunity to report on Partnership goals and activities and to invite elected officials and residents to comment on the Plan and suggest new programs.
- The Partnership Board voted unanimously to approve the draft Plan posted on the Partnership website at its October 11, 2022 meeting.



View from *The Cobbles, Cheshire*. Photo: Joe Nowak

Partnership Origins

In 2013, the Franklin Regional Council of Governments (FRCOG), Berkshire Regional Planning Commission (BRPC), Franklin Land Trust (FLT), and an Advisory Board¹³ worked in partnership with the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) to explore the possibility of leveraging the

region’s extensive, mostly privately owned woodlands to obtain a Special Federal Designation (see Section 7). If earned, such a designation, created through federal legislation, would recognize the region’s outstanding forest resources and bring substantial financial and technical assistance to Northwestern Massachusetts to

13. Twelve regional organizations/institutions and 21 towns with representatives from USFS and MA-EOEEA.



help keep woodlands in private ownership and fund sustainable rural economic development along the MA-Route 2 corridor and in the region’s 21 towns.¹⁴ The Woodlands Partnership was conceived as a public body, enabling the channeling of resources from the State and the U.S. Forest Service to the region, in lieu of a federally owned National Forest. Though federal legislation remains a

goal, the Partnership reached a milestone in 2019, when the Chief of the U.S. Forest Service, Victoria Christiansen, visited the region with Secretary of Massachusetts EOEEA Kathleen Theoharides to jointly sign a “Shared Stewardship Framework” outlining mutual benefits and areas of collaboration between federal and state agencies on behalf of the region.

14. For seven years, FRCOG and BRPC conducted extensive outreach to involve the public in planning the Partnership.



Path through ferns, Ashfield. Photo: Sophie Argetsinger.

2019
Formation of the Partnership Board



2020
January: first full meeting of the Partnership Board



2021
NEFF contracted to be Administrative Agent for Partnership



2020–2022
Over \$1 million in grants awarded to member towns

2022
Revised Woodlands Partnership Plan (2022–2032) is written and approved



2020
Officers elected and Standing Committees formed to conduct Woodlands Partnership work

2021
First educational event: Oaks in New England Forests

2050
Seek to realize the Partnership’s vision of a self-sustaining entity that centers forests in helping to maintain and enhance the region’s ecological and economic prosperity.





Goldie's Wood Fern, Rowe. Photo: Sophie Argetsinger

Meeting the Goals of the Woodlands Partnership 2022–2032

After meeting for five years, the initial Advisory Committee was replaced in fall 2019 by the Partnership Board, whose membership is defined in the 2018 Massachusetts enabling legislation. The Partnership launched a small grant program to participating towns in 2019, and in 2022 is advertising its fourth grant round. Over \$1 million in grants have been distributed by the EOEEA to date, for projects ranging from town forest plans, trail building, and support for small businesses. The Partnership has also received two U.S. Forest Service grants totaling \$120,000 that have helped to leverage two state climate grants totaling over \$1.6 million to develop a new climate forestry program.

The State enabling legislation also called for hiring a non-governmental organization to serve as administrator, and in November 2020, the Board approved a contract between the EOEEA and the New England Forestry Foundation (NEFF) to serve as Administrative Agent for the Partnership, which runs through June 2025. Forming its five Standing Committees over the course of 2021 (when meetings were held virtually due to the COVID-19 pan-

dem), the Woodlands Partnership Board has continued to focus its near- and long-term objectives.

Ultimately, the envisioned federal designation would provide stable Federal and State funding and would also enable private fundraising for the Woodlands Partnership. This funding will be used to conserve forests, increase economic development related to sustainable forestry practices, forest-based business, and recreational tourism, improve the fiscal stability of municipalities, and preserve the quality of life in Northern Berkshire and Western Franklin Counties. The Partnership hopes to further these goals through securing reliable governmental funding, obtaining programmatic grants from government and other funding sources, and being an advocate for improving the fiscal stability of municipalities. We will continue to press our State and Federal legislative delegations to secure a reliable, annual source of funding for the operation of the Woodlands Partnership and its programs, funding that is indicated in the Partnership's enabling legislation.

Listed below are the primary goals of the Woodlands Partnership and programs we are considering in order to progress toward them.

GOAL 1: Conserve forestland while keeping it in private ownership to protect the region's rural character and enhance the role forests play in providing clean water and air, flood control, carbon sequestration and storage, and habitat protection in New England.

- Purchase development rights (conservation restrictions or CRs) from willing landowners committed to long-term sustainable forest management, which helps people to continue to own and care for their land instead of selling it for development or selling timber rights for unsustainable harvests.
- Provide technical assistance to landowners to foster sustainable forest management, wildlife habitat improvement, climate change resilience, woodland preservation, and to address the issue of tree diseases as well as invasive pests and plants.
- Promote research on sustainable forestry practices. Partner to increase research on sustainable /exemplary forestry practices in the region's diverse forests, ways to market and use local forest-based products, and to disseminate the knowledge from applied science that results.
- Enhance the ecological integrity of the region's forests in an era of rapid climate change, including evaluation of carbon credit programs and markets (verified to provide additionality of climate benefit) for private woodland owners.
- Appropriate acknowledgment and valuing of the role that old-growth forests play in carbon sequestration and providing ecosystem services in our forested landscapes.

GOAL 2: Increase economic development and expand employment by nurturing sustainable forest products, outdoor recreation, and natural resource and tourism-based businesses.

- Strengthen the marketing and branding of sustainable local forest products and ecotourism from the Northern Berkshires and Hilltowns.
- Provide assistance to improve sustainable tourism infrastructure and associated outdoor recreation businesses.
- Support research and development of new, innovative wood products.
- Increase sustainable natural resources-related local jobs, especially for younger residents to help invigorate communities for the future.

GOAL 3: Improve the fiscal stability of municipalities.

- Provide funding to participating towns for municipal services related to outdoor recreation and tourism, and to address governmental ownership of lands and forest conservation restriction programs related to local tax bases.
- Provide technical assistance to towns interested in developing carbon credit projects to improve stewardship and receive payments from their town forests.
- Advocate for equitable and sufficient Payment in Lieu of Taxes to compensate municipalities for State ownership, conservation restrictions, ecosystem services, and other impacts of sustainable practices on local tax bases.
- Secure sources of funding to support municipal services and tax bases while recognizing ecosystem services and benefits to the Commonwealth and larger region provided by our forests.

SECTION 1: EXECUTIVE SUMMARY

GOAL 4: *Engage in public education and outreach.*

- Develop a collaboration with the Indigenous Peoples of the region to incorporate their participation and knowledge in management of the forests.
- Collaborate with educational institutions (pre-K through graduate) to promote forest conservation and sustainable forest land uses.
- Establish demonstration forests on town and private forests to inform the public about best management practices and how forest stewardship can enhance climate resilience and carbon storage.
- Build a multi-purpose Forest Center, beginning with an online, virtual Forest Center, where residents and visitors can learn about the benefits that forests provide, showcase local wood products, celebrate the Berkshires and Hilltowns, and promote sustainable outdoor recreation and natural resource-based tourism.



*Trail sign to The Cobbles, Cheshire.
Photo: Joseph Nowak.*

First Chair Leads Partnership Board toward a Sustainable Vision



Henry W. Art has brought his perspective as emeritus college professor to his role as the first Board Chair of the Woodlands Partnership. So far, he has recruited three different student teams to apply their intellectual energy and research skills to projects designed to advance goals of this regional consortium.

In fall 2021, two Williams College students interviewed stakeholders and explored potential sites and uses for a Forest Center as a flagship community and education resource for this heavily forested corner of the Commonwealth. In Spring 2022, three Conway School of Landscape Design students identified riparian restoration sites appropriate for climate-adapted tree-plantings in the Deerfield River watershed. And in summer 2022, a student from Williams College studied how much wood residue is produced from towns and utilities in the 21-town region, and how it might be better utilized.

Partnering with academic institutions both benefits the Woodlands Partnership and provides real-life learning opportunities for the students. "It's been an absolute joy to interact with the students," said Art.

One of the goals in forming the Partnership was to relieve burdens on Northwest Massachusetts towns, and to avoid any costs for their participation. "I think we've lived up to that promise," said Art, noting both the investment of \$1 million in state grants over the past three years, and the synergy of bringing together so many non-profits and agencies for common purpose.

The Robert F. Rosenberg Professor of Environmental Studies & Biology at Williams College from 1970 to 2020, Art started to teach right out of graduate school at Yale University. "We feel the Northern Berkshires and Williamstown are really home," said Art, who also serves with his local Conservation Commission and land trust. "I've lived here two-thirds of my life or more ... I came here at the age of 26 and this is really home."

Growing up in Evanston, Ill., Art camped with the Boy Scouts in Michigan and spent time exploring nature preserves in Cook County. He studied the biomass productivity of a sunken forest on the south shore of Fire Island, NY, authored wildflower guides, and later rejuvenated Williamstown's 2600-acre Hopkins Memorial Forest bordering New York and Vermont as a field research site. He is working on an oral history of Hopkins, dating back to its days as a farm in the early 20th century. He has always been interested in successional patterns that result from human impacts to the landscape and how biological communities respond. For Art, the Partnership brings together the people and the forested place where they live, in a vision for sustaining both.

Henry W. Art is a Rosenberg Professor Emeritus of Environmental Studies and Biology at Williams College. His research includes the investigation of long-term changes in successional relationships among species in the college-owned Hopkins Forest, and the distributional ecology of spring flora in Northern Berkshire County.

SECTION TWO

A Snapshot: The Partnership Region in Focus

WHILE MANY RURAL AREAS across the U.S. have been lost to suburban development, the 21-town Partnership region of western Franklin and northern Berkshire Counties remains largely intact, and its forested backdrop is relatively un-fragmented. From an ecological perspective, the region is a convergence of several different types of forests, with remarkably high biodiversity for an area its size. The region also has a rich history of human interaction with the land—homeland for millennia to Indigenous Peoples, supplying them with food, water, and natural resources, and additionally, in recent centuries, home to colonists, farmers, foresters, tradespeople, and hosts to outdoor enthusiasts and tourists. This natural diversity and human history, coupled with the educational resources that are available in the region, provide an opportunity for research and innovation that can be instructive for many other rural areas. At the same time, the region's resources and sense of place provide a backbone for what can be a sustainable, vital rural economy into the future.

History

The region's history is closely tied to its natural resources. Indigenous Peoples first occupied the area following the retreat of the glaciers approximately 12,000 years ago, cultivating the valleys and fishing and hunting in the forested highlands.¹ European settlers arrived in the 17th century and commenced clearing forests for farming, pasturing, and timber and established sawmills and other mills along the region's waterways. As more land opened up in the West, especially following the opening of the Erie Canal in 1825, regional agriculture started to decline after its peak in the 1830s. Forests slowly reclaimed much of the farmland, and today the 21-town region is approximately 83% forested.

Working farms, however, remain a vital part of the region's identity and economy. The acreage being farmed has continued its decline in both Berkshire and Franklin Counties in recent years, but while Berkshire County lost farms, the number of farms in Franklin County actually increased by 50 (from 780 to 830) in the five years ending 2017 (see Tables 2.1 and 2.2).²

The construction of the Hoosac Tunnel through the Hoosac Range between 1850 and 1875 created a railroad link between Boston and Albany, spurring large-scale industrial development in several communities within the region. Manufacturing contin-

1. Indigenous Peoples' residency in the region prior to the arrival of European settlers represents ~97% of the time span from the retreat of the last glaciers to the present day.

Table 2.1: Acres of Operated Farmland

REGION	2012	2017	PERCENT CHANGE
Berkshire County	61,656	58,647	-4.9
Franklin County	89,772	88,247	-1.7
Massachusetts	523,517	491,653	-6.1

Table 2.2: Number of Farm Operations

REGION	2012	2017	PERCENT CHANGE
Berkshire County	525	475	-9.5
Franklin County	780	830	+6.4
Massachusetts	7,755	7,241	-6.6

Source: USDA Census of Agriculture, 2012 and 2017.

Note: This county-wide data was not available town-by-town.

ues to be an important sector in the regional economy, though a declining one. Factory closings in recent decades have prompted revitalization and reuse efforts of former industrial buildings. The Sprague Electric complex (closed in 1985) in North Adams, for instance, now houses the Massachusetts Museum of Contemporary Art (MassMoCA, opened in 1999), one of the largest centers for contemporary visual and performance art in the country and just one example of the many cultural offerings found throughout the region.

In 1914, the opening of the Mohawk Trail as the State's first

2. USDA National Agricultural Statistics Service. https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_2_County_Level/Massachusetts/

SECTION 2: PARTNERSHIP REGION IN FOCUS

scenic tourist route made the region a popular destination during the auto-touring days through the 1950s. The 21-town region now includes four State-designated scenic byways: Mohawk Trail (Route 2; also one of America’s Byways®), Mount Greylock, Route

112, and Route 116. These byways provide travelers access to the many historical, natural, cultural, and recreational resources of the region.



Massachusetts Museum of Contemporary Art, North Adams. Photo: Sophie Argetsinger.

Demographics

Population

As of 2020, the Partnership region is home to just under 50,000 residents, with a population density of 87 people per square mile, far lower than the state population density of 884.³ The median town population is 1,185, ranging from 118 residents in Monroe, to 12,961 residents in North Adams,⁴ the only city in the Partnership region, and the smallest city in Massachusetts⁵ (town-by-town

3. U.S. Census Bureau, 2020 Decennial Census.

4. Ibid.

5. William Francis Galvin, Secretary of the Commonwealth of Massachusetts. Information and Historical Data on Cities, Towns and Counties in the Commonwealth of Massachusetts. <https://www.sec.state.ma.us/cis/cisctlist/ctlistidx.htm>

Table 2.3: Demographic Summary Compared with the State

	21-TOWN REGION	MA
2020 Total Population	49,088	7,029,917
Population Change 2010–2020	–1,848	+482,288
Percent Population Change 2010–2020	–3.6%	+7.4%
Population Density	87	884
Median Population Age	39.3–52.6	39.5
Percent of Population 65 and Older	24%	13.5%
Per Capita Income	\$36,098	\$46,121

Sources: 2010, 2020 U.S. Census; Esri.

demographic information can be found in Appendix A). The population of North Adams is more than 100 times larger than the population of Monroe. Overall, the population in the Partnership region is declining: total population declined by 3.6% between 2010 and 2020, following a decline of 4.9% between 2000 and 2010.⁶ By 2040, the total population for the region is projected to decline by an additional 5%.⁷

Age

The Partnership region has an older population than the state as a whole. The median population age for each town ranges from 39.3 in Williamstown, where Williams College students represent about a quarter of the population, to 52.6 in Ashfield and Hawley.⁸ Nineteen of the 21 towns in the region have a median population age over 45, which is older than the median age for the State (39.5), and 24% of residents in the region were 65 or older as of the 2020 U.S. Census.⁹ However, the Partnership region also has a high percentage (15%) of residents between the ages of 15 and 24.¹⁰ This is likely due largely to the presence of two colleges in the region: Williams College in Williamstown, a private liberal arts college founded in 1793 that currently enrolls approximately 2,200 undergraduates; and the Massachusetts College of Liberal Arts (MCLA) in North Adams, a state college enrolling close to 1,800 undergraduates and over 400 graduate students. Of the residents in the region between the ages of 15 and 24, 61% live in the towns of North Adams and Williamstown.¹¹ Residents between the ages of 0 and 4 years make up only 4% of the region's population.¹²

6. U.S. Census Bureau, 2010 and 2020 Decennial Census.

7. UMass Donahue Institute MassDOT Vintage 2018 Population Projections. September 2018. (UMDI-DOT V2018).

8. U.S. Census Bureau, 2020 Decennial Census.

9. Ibid. 10. Ibid. 11. Ibid. 12. Ibid.



Farm stand, Shelburne. Photo: Lisa Hayden.

Race

The majority of residents in the Woodlands Partnership region are white: 89.1% of the population identified as white during the 2020 census.¹³ 3.6% of residents identified as Hispanic, 1.7% as Black, 1.6% as Asian, 0.18% as American Indian, and 6.2% of the population identified as two or more races.¹⁴

Poverty and Environmental Justice Populations

In the Partnership region, an average of 9% of households were living below the poverty line in 2020.¹⁵ This rate is slightly lower than the Massachusetts average of 9.4%. Poverty is not equally distributed throughout the region, however, but is concentrated in certain towns and areas. North Adams currently has the highest household poverty rate (19%) and Conway the lowest (1.9%).

Nine towns in the Partnership region contain Environmental Justice (EJ) populations (see Table 2.4; Map 2.1). EJ populations

Table 2.4: 2020 Environmental Justice Populations in the 21-Town Region

MUNICIPALITY	EJ CRITERIA	TOTAL POPULATION	POP. IN EJ BLOCK GROUPS	% OF POP. IN EJ BLOCK GROUPS
Adams	Income	8,125	3,775	46.5
Buckland	Income	1,950	1,049	53.8
Charlemont*	Income	1,984	1,052	53.0
Cheshire	Income	3,159	1,315	41.6
Monroe*	Income	1,052	1,052	100.0
North Adams	Income, Minority	12,959	11,128	85.9
Rowe*	Income	1,052	1,052	100.0
Shelburne	Income	1,649	786	47.7
Williamstown	Income, Minority	7,514	3,246	43.2

Source: 2020 Environmental Justice Populations Fact Sheet. MA EJ 2020 Municipal Statistics.

*Note: Monroe, Rowe, and a portion of Charlemont are treated as a single Block Group.

are identified by census block groups and meet one or more of the following criteria: (1) Income, (2) English Isolation (25% or more of households lack English language proficiency), or (3) Minority.¹⁶

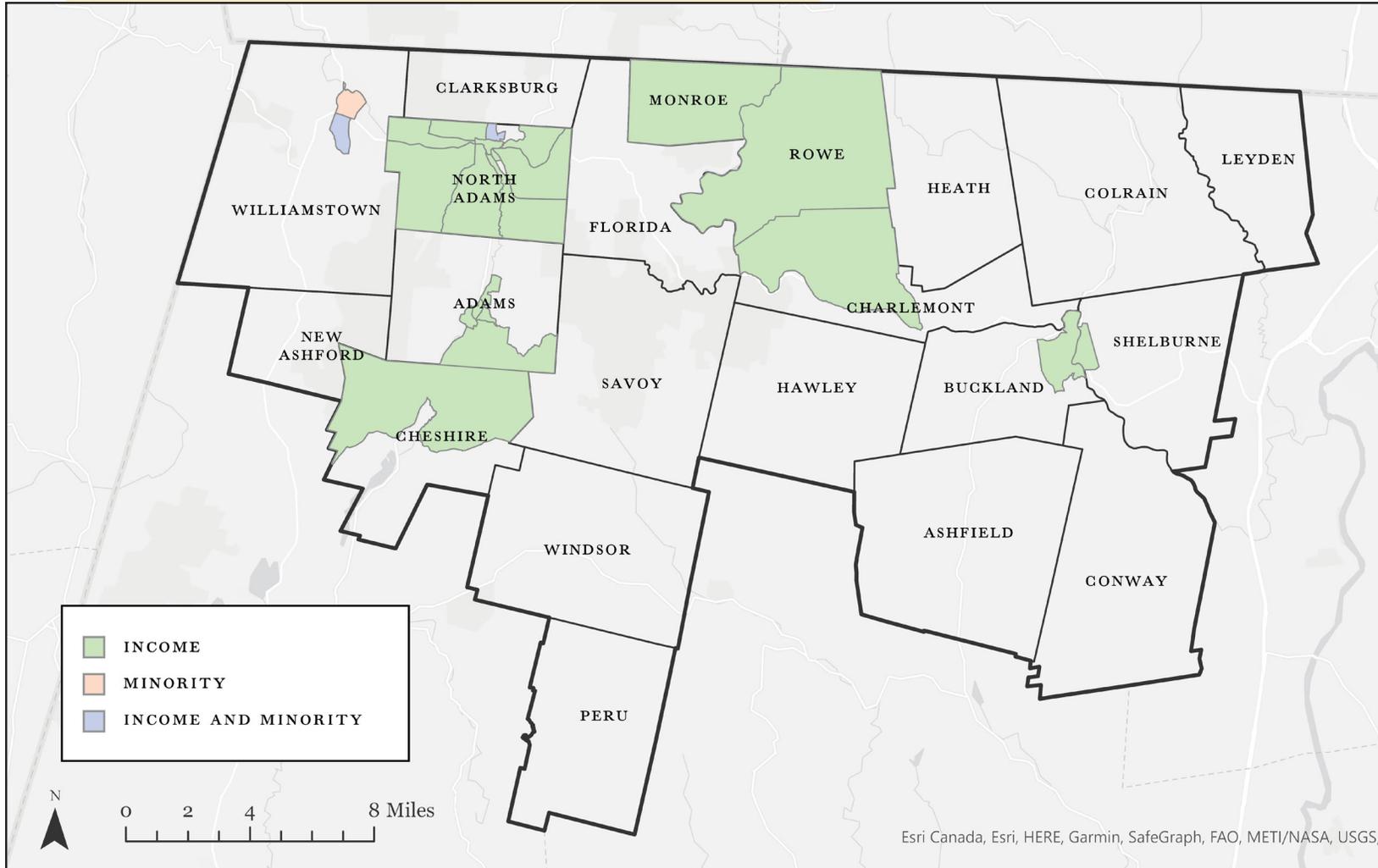
EJ populations are the focus of the Executive Office of Energy

13. U.S. Census Bureau, 2020 Decennial Census. 14. Ibid. 15. Ibid.

16. MassGIS Data: 2020 Environmental Justice Populations. June 2021. <https://www.mass.gov/info-details/massgis-data-2020-environmental-justice-populations>. (1) Income: the annual median household income is not more than 65% of the statewide annual median household income, (2) English Iso-

lation: 25% or more of households lack English language proficiency, or (3) Minority: minorities comprise 40% or more of the population, or minorities comprise 25% or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150% of the statewide annual median household income.

Map 2.1: Environmental Justice Populations in the 21-Town Region



and Environmental Affairs' Environmental Justice Policy, through which the EOEEA strives to integrate environmental, energy, and climate justice considerations into its policies, programs, and strategies.¹⁷

17. Environmental Justice Policy. June 2021. <https://www.mass.gov/service-details/environmental-justice-policy>

FLT's Community Conservation Program Manager Envisions a More Equitable Future for the Partnership Region



Emily Boss has lived in Northwestern Massachusetts for over three decades, first coming to the area in the 1990s to study Forest Resources at UMass Amherst. Her work as the Community Conservation Program Manager at Franklin Land Trust (FLT), a non-profit organization in Shelburne Falls that helps landowners in western Massachusetts protect their land from unwanted development, keeps her closely tied to the forests and farms of the region. “The beauty of the area with its farms, rivers, and forests has kept me here ... our region has gorgeous, hike-able mountains, spectacular autumn views, homegrown food, wood products, and all manner of crafts and goods ... When I visit other beautiful places, I always return home grateful to live surrounded by such beauty every day,” writes Boss.

Boss’s work at Franklin Land Trust, a member organization of the Woodlands Partnership, has “given me great respect for the challenges facing people, organizations, and families that steward the land. This year’s drought brought the vulnerability of crops and fruit trees [to light], as well as the pressures on wild plants and animals.” Boss highlights the Woodlands Partnership’s important role in helping to bring together people across the region to support local farms and natural landscapes and “help each community find ways to thrive in a constantly changing economy and world.” The Franklin Land Trust has played an integral part in the formation and progression of the Woodlands Partnership, and, in turn, working with the Partnership has proved valuable to FLT—by providing information from member towns about their priorities and by serving as another avenue through which to advocate for responsible land conservation, wildlife habitat enhancement, and visibility for local wood products and businesses in the region.

In the future, Boss hopes that the Woodlands Partnership will continue to bring grants and investments to the region that will “help communities prosper with new businesses and new residents, while retaining the natural character that makes it so unique.” She also hopes that the Partnership will center and prioritize building relationships with representatives of Indigenous Nations with roots in the region. She hopes the Partnership “will forge strong partnerships to help us address present and past inequities and reduce barriers to BIPOC land ownership and universal access to the land,” including through more robust public transportation that would allow more equitable access to the beauty of the region and would allow people to visit and live in the region more economically.

Emily Boss is the Community Conservation Program Manager at Franklin Land Trust, the Director of the Massachusetts Woodlands Institute, and a licensed forester (MA LF #410).



Forest in Buckland. Photo: Sophie Argetsinger.

Land Use

The 21-town Woodlands Partnership region comprises approximately 362,105 acres in total.¹⁸ Forests are the predominant land use, encompassing around 83% of the region (see Map 2.2). Agricultural land makes up roughly 8% of the region, and wetlands cover about 4%. Residential uses comprise about 4.5% of the region, while commercial and industrial uses comprise only 0.5%.

Across Massachusetts, approximately 7,006 acres of forest are converted annually to non-forest, while about 2,844 acres of non-forest revert back to forest annually.¹⁹ Between 2012 and 2017, 24,699 acres of forest were converted and developed in the state

(13.5 acres per day), including the conversion of 6,000 acres of forestland to solar array fields.²⁰ Although the Partnership region has some of the lowest development rates in the state, parcelization and second home development in the region may still pose a threat to forestland and conservation efforts. Many towns in Berkshire County have a high percentage of second home ownership (the highest: 63% of all homes in Otis),²¹ and a study by the Massachusetts Department of Transportation reported that around 2,500 permanent New York City residents own second homes in Berkshire County.²² A 2021 Realtors Research Group report

18. All data in the Land Use section was gathered from MassGIS (Bureau of Geographic Information), Commonwealth of Massachusetts EOTSS. Layers: Land Cover / Land Use (2016); Protected and Recreational Open Space (2021), unless otherwise stated.

19. USDA Forest Service. 2020. *Forests of Massachusetts, 2019*. Resource Update FS-239. Madison, WI: U.S. Department of Agriculture, Forest Service. <https://doi.org/10.2737/FS-RU-239>

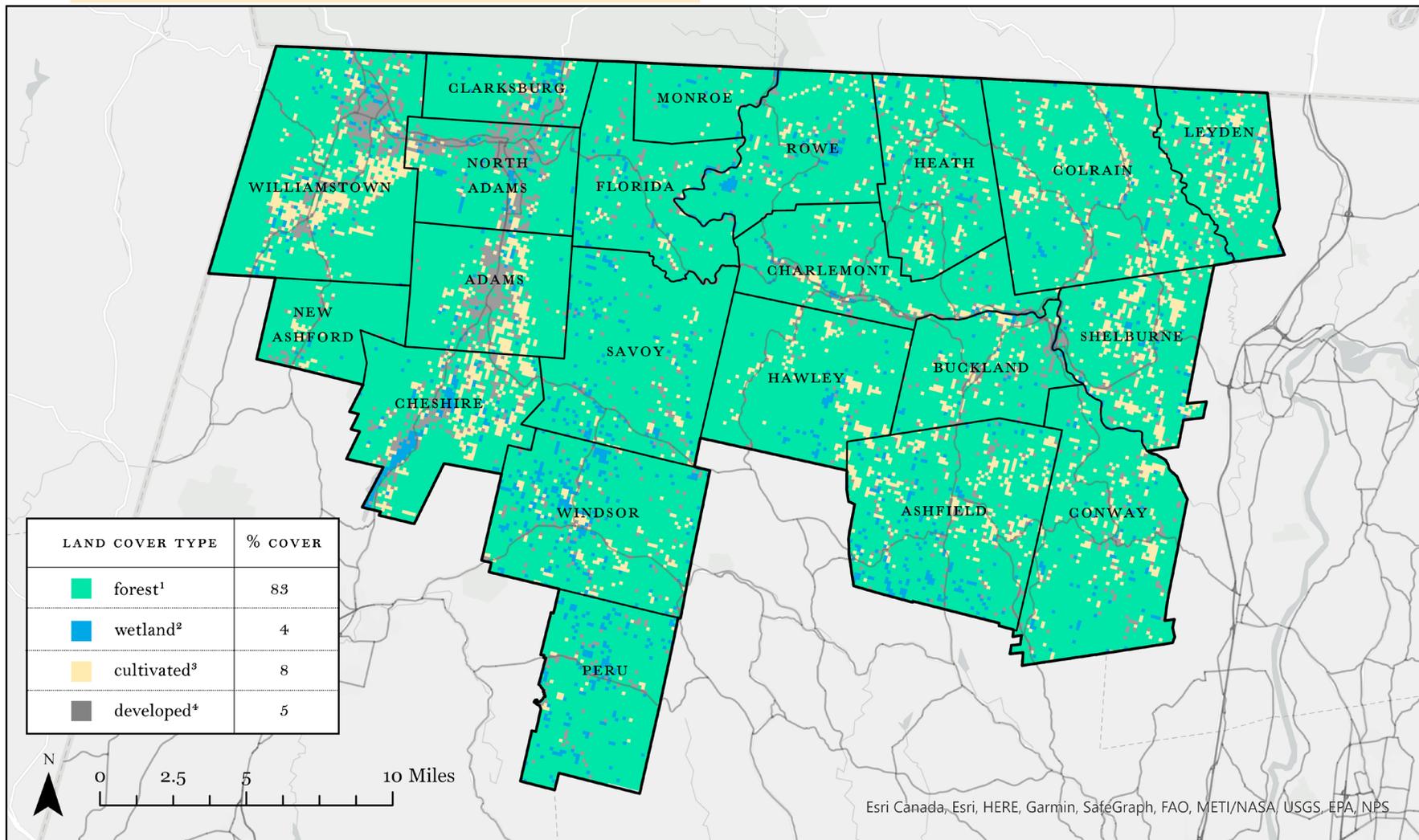
20. Ricci, E.H., J. Collins, J. Clarke, P. Dolci, and L. de la Parra. 2020. *Los-*

ing Ground: Nature's Value in a Changing Climate. Massachusetts Audubon Society, Inc., Lincoln, Massachusetts.

21. Cowgill, Terry. September 6, 2018. *Second-class Citizens No Longer: Berkshire Second-Home Owners Eye Greater Involvement, Voting Rights*. The Berkshire Edge.

22. Massachusetts Department of Transportation Transit and Rail Division. 2018. *Berkshire Flyer: Pittsfield to New York City Feasibility Study*.

Map 2.2: Land Cover Types in the Partnership Region



LEGEND Scale: 1:300,000

- MTWP REGION
- TOWN BORDER
- MAJOR ROAD

Land Cover Types in the MTWP Region

Land cover data from MassGIS Land Cover / Land Use tiles (2016)

1. Includes evergreen forest, deciduous forest, and scrub/shrub cover types
2. Includes palustrine emergent wetland, palustrine forested wetland, palustrine scrub/shrub wetland, palustrine aquatic bed, and water cover types
3. Includes cultivated, pasture/hay, and grassland cover types
4. Includes impervious, developed open space, and bare land cover types

analyzed how the COVID-19 pandemic has impacted demand for vacation homes throughout the country, finding that second home sales rose by 16.4% in 2020, as more people began working remotely and sought refuge and recreation away from urban areas.²³ In Berkshire and Franklin Counties, the number of seasonal, recreational, and occasional-use properties increased by about 800 properties, or 8%, between 2018 and 2020 (see Table 2.5).²⁴ As larger forested properties are subdivided into smaller parcels and house lots, the likelihood of conservation or sustainable forest management on those properties is reduced.²⁵ Still, between 2012 and 2017 about 100,000 acres (54.8 acres per day) in Massachusetts were newly permanently protected.²⁶ A balance between drawing new residents and tourists to the region and ensuring that the unique forested landscape and rural character are maintained is of vital importance for the region.

In the Partnership region, approximately 125,273 acres, or 35% of the land within the region, is classed as protected open space, spread out over 1,366 properties. These properties include state forests and wildlife management areas, land owned by conservation organizations, town-owned land under the jurisdiction of the local Conservation Commissions, and privately owned forestland and farms protected through Conservation Restrictions or the Agricultural Preservation Program (see more about state-owned lands in Chapter 5). The vast majority of these properties (1,213) are permanently protected; 149 are protected under temporary or

23. National Association of Realtors Research Group. 2021. *Vacation Home Counties Report*.

24. U.S. Census Bureau. 2015-2019. *American Community Survey 5-Year Estimates*.

25. Hayden, Elizabeth G., Frank Lowenstein, and Robert T. Perschel. 2019. *From Engagement to Action: Supporting Woodland Owners in Decisions About Their Land*. New England Forestry Foundation.

Table 2.5: Seasonal, Recreational, and Occasional-use Properties

COUNTY	2018	2019	2020
Berkshire	8,050	8,551	8,945
Franklin	1,458	1,348	1,345
TOTAL	9,508	9,899	10,290

Source: American Community Survey 5-Year Estimates.

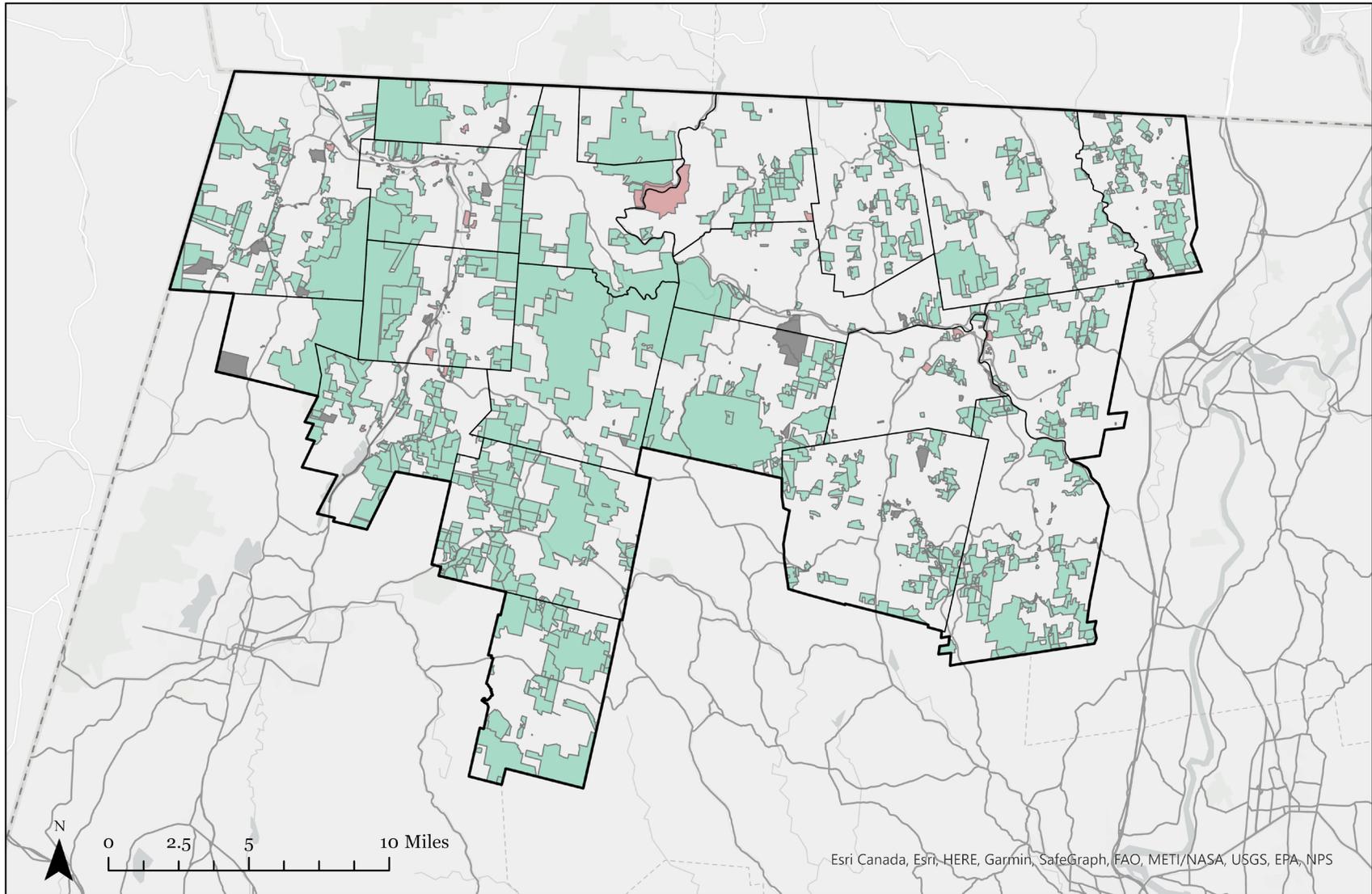
limited agreements (see Map 2.3). The majority of protected open space properties in the 21-town region are privately owned, but the State of Massachusetts owns the most acreage (about 80,240 acres, or 64%, of the protected acreage in the region) (see Map 2.4; Table 2.6).

In addition, approximately 93,530 acres, or 26%, of land in the region is enrolled in one of three Chapter 61 programs for forestry, agriculture, or open space/recreation.²⁷ Each program provides a means to assess and tax land at its current use as opposed to its development value. Land can be removed from the Chapter 61 programs at any time, and therefore the land is not considered permanently protected from development. Municipalities have a right of first refusal to purchase a property being removed from the program if it is to be sold or converted to another use.

26. Ricci, E. H., J. Collins, J. Clarke, P. Dolci, and L. de la Parra. 2020. *Losing Ground: Nature's Value in a Changing Climate*. Massachusetts Audubon Society, Inc., Lincoln, Massachusetts.

27. Department of Conservation and Recreation Chapter 61 data, 2022.

Map 2.3: Protected Open Space by Level of Protection in the 21-Town Region



LEGEND Scale: 1:300,000

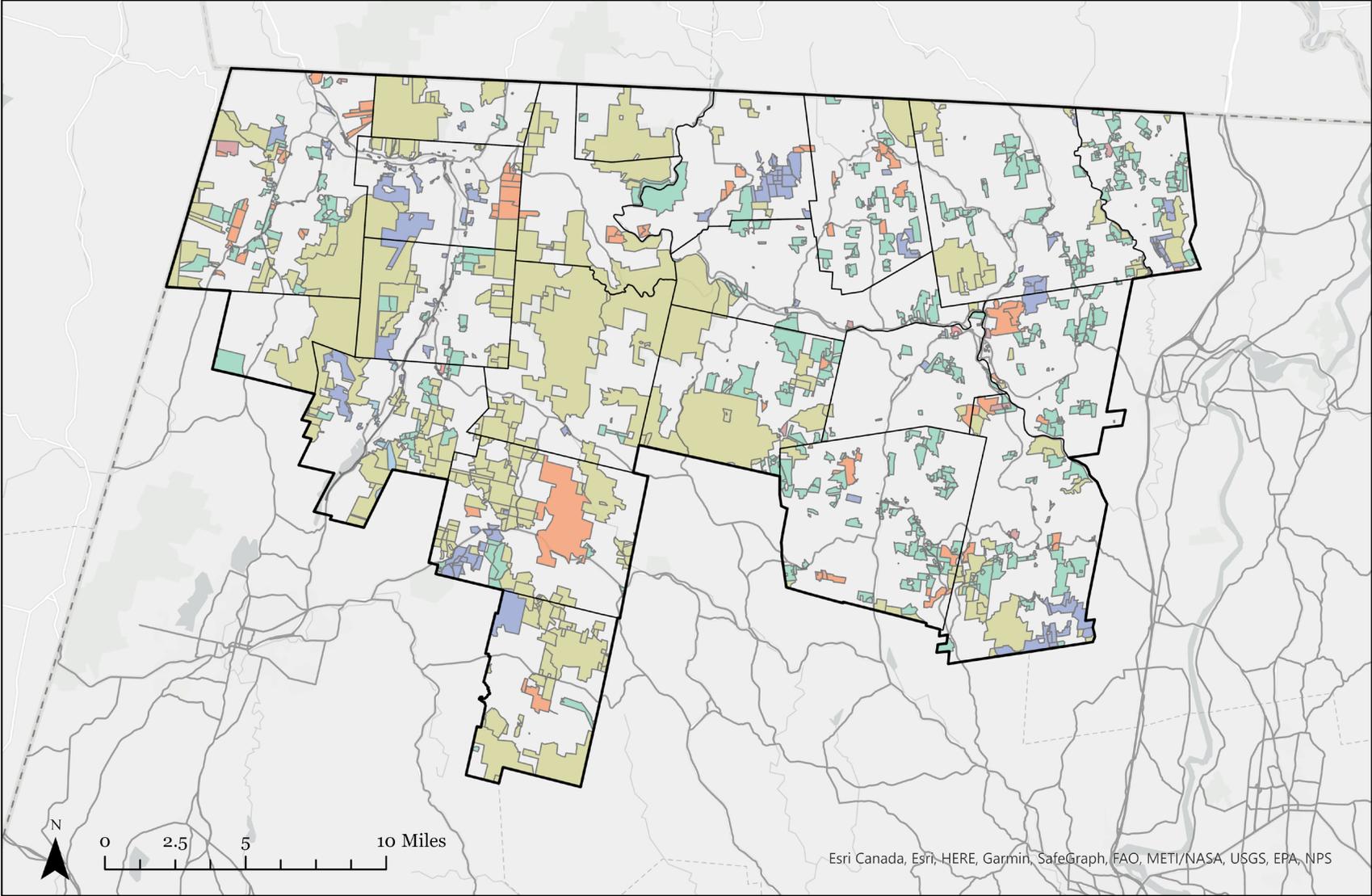
- | | |
|--|---|
|  IN PERPETUITY ¹ |  MTWP REGION |
|  TEMPORARY / LIMITED ² |  TOWN BORDER |
|  NONE / UNKNOWN ³ |  MAJOR ROAD |

Protected Open Space: Level of Protection

1. Legally permanently protected, e.g., through a conservation restriction.
2. Temporary: Legally protected for less than perpetuity, e.g., through a short term conservation restriction.
Limited: Legally protected through other means, or likely to remain open space, e.g., a cemetery.
3. Legally unprotected open space, often used recreationally, e.g., scout camp, ski slope; or unknown.

Protected open space data collected from MassGIS Protected and Recreational Open Space data layer.

Map 2.4: Protected Open Space by Ownership Type in the 21-Town Region



Esri Canada, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

LEGEND Scale: 1:300,000

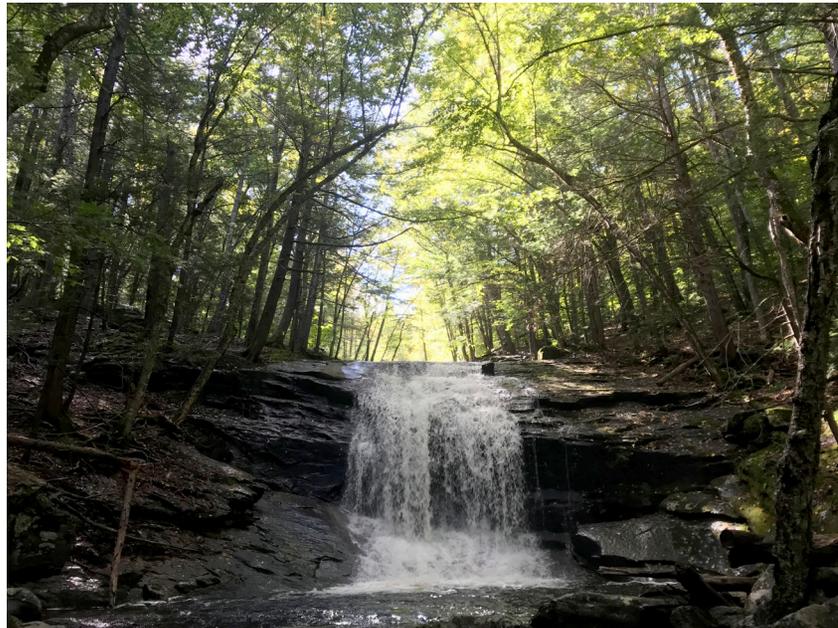
■ FEDERAL	■ PRIVATE FOR PROFIT	 MTWP REGION
■ STATE	■ PRIVATE NONPROFIT	 TOWN BORDER
■ MUNICIPAL	■ LAND TRUST	 MAJOR ROAD

**Protected Open Space:
Ownership Type**

*Protected open space data collected from MassGIS
Protected and Recreational Open Space data layer.*

Table 2.6: Protected Open Space Ownership Types in the Partnership Region*

OWNER TYPE	NO. OF PROPERTIES	ACRES
Federal ^a	18	382
State ^b	403	80,240
Municipal ^c	267	9,557
Private Nonprofit ^d	25	635
Private for-Profit ^e	556	25,353
Land Trust ^f	95	9,018
Other ^g	2	86
TOTAL	1,366	125,273



Chapel Brook Falls, a property owned by The Trustees of Reservations in Ashfield. Photo: Emily Johnson.

* All data in Table 2.6 gathered from MassGIS (Bureau of Geographic Information), Commonwealth of Massachusetts EOTSS. Layers: Land Cover / Land Use (2016); Protected and Recreational Open Space (2021).

a. Portions of the Appalachian Trail Corridor are the only Federally-owned land parcels in the region; these parcels are owned by the U.S. Department of the Interior.

b. State Land is owned by the Department of Fish and Game, the Department of Conservation and Recreation, and the Commonwealth of Massachusetts.

c. Municipal land is owned both by towns in the 21-town region and by towns outside of the region, i.e., Greenfield, Dalton, Deerfield, and Northampton. See Appendix C for more information.

d. The largest Private Nonprofit landowners include the American Chestnut Nominee Trust (210 acres in Williamstown), World Species List—Natural Features Registry Institute (85 acres in Conway), Spirit Fire Meditative Retreat, Inc. (62 acres in Leyden), Girl Scouts of America (57 acres in Williamstown and Leyden), and the Holyoke Boys Club (44 acres in Hawley).

e. The largest Private for-Profit landowners include USGen New England, Inc. (908 acres at Monroe State Forest and Bear Swamp in Rowe and Florida), Roy Schaefer (833 acres at Berkshire East Ski Area in Charlemont and Hawley), Singing Brook Farm Trust (560 acres at Singing Brook Farm in Hawley), FO Ski Resorts, LLC (499 acres at Brodie Mountain Resorts in New Ashford), as well as several private individuals or families.

f. Land Trust owners include Berkshire Natural Resources Council, Franklin Land Trust, Kestrel Land Trust, Massachusetts Audubon Society, Massachusetts Forest Landowners Association, New England Forestry Foundation, The Nature Conservancy, Rowe Land Trust, The Trustees of Reservations, and Williamstown Rural Lands Foundation. The Trustees of Reservations own the most acreage (4,188 acres), followed by the New England Forestry Foundation (1,123 acres), and Berkshire Natural Resources Council (1,068 acres).

g. The ‘Other’ category includes 2 properties: the Mohawk Trail Regional School Athletic Fields (50 acres in Buckland), and the Hoosic Valley Regional High School Athletic Fields (36 acres in Cheshire).



Ramps and red trillium in Rowe. Photo: Sophie Agetsinger.

Natural Resources

A wealth of important natural resources lies within the Partnership region, as it is the meeting place for five different ecological subregions (ecological zones with distinct geography, ecosystems, climate, and landforms).²⁸ The Partnership's large, forested land area also lies in a critical location between the Green Mountains to the north and the Highlands Conservation region stretching from Connecticut to Pennsylvania to the south. The Partnership region supports biodiversity and wildlife habitat, and includes the headwaters for the Deerfield, Hoosic, and Westfield Rivers. Geologic features such as the Glacial Potholes in Shelburne Falls and the Natural Bridge in North Adams add to the uniqueness of the area. Table 2.7 provides a summary of the natural resources in the region.

28. Subregions include Taconic Mountains, Western New England Marble Valleys, Green Mountains/Berkshire Highlands, Berkshire Transition, and Vermont Piedmont. Mass Audubon. 2022. *Massachusetts Ecoregions: A Landscape Approach to Delineating Bird Distribution*. <https://www.massaudubon.org/our-conservation-work/wildlife-research-conservation/bird-conservation-monitoring/breeding-bird-atlases/bba2/full-ecoregions>

Much of the remaining old growth forest in Massachusetts, about 72%, is located in the 21-town region, with key areas of old growth located within or adjacent to the Mohawk Trail State Forest, Savoy Mountain State Forest, Monroe State Forest, and Mount Greylock State Reservation.²⁹ A 2006 study found trees between 325 and 488 years old in these areas, much older than the typical surrounding forest age of 60 to 150 years.³⁰ The study calls for these old growth stands to be carefully protected to form the core of reserve areas, set aside from logging or other human disturbance.³¹ The Partnership region is also the area of greatest forest diversity in the state, with forest types ranging from spruce-fir and northern hardwoods to transitional forest and oak-hickory forest. Spruce-fir forests, coniferous forests dominated by

29. D'Amato, A.W., D.A. Orwig, and D.R. Foster. 2006. *New Estimates of Massachusetts Old-growth Forests: Useful Data for Regional Conservation and Forest Reserve Planning*. *Northeastern Naturalist*. 13(4): 495-506.

30. Ibid.

31. Ibid.

Table 2.7: Natural Resource Values within the Partnership Region

RESOURCE CATEGORY	ACRES	% OF TOTAL AREA
Total Area of Region	362,105	100%
Forest ^a	300,547	83%
Prime Forest Land ^b	299,097	82%
BioMap2 Core Habitat or Critical Natural Landscape ^c	209,117	58%
NHESP Species of Conservation Concern Habitat ^d	115,170	32%
MassWildlife Key Sites ^e	27,426	8%
Surface Water Supply Protection Areas ^f	50,991	14%
MA Department of Environmental Protection Zone II Approved Wellhead Protection Areas ^g	3,986	1%
Prime Farmland Soils ^h	69,708	19%
Wetlands	13,920	4%
Number of Certified Vernal Pools ⁱ	185	N/A
Old Growth Forest ^j	807	0.2%

a. Includes deciduous forest, evergreen forest, and scrub/shrub. MassGIS Land Cover / Land Use data, 2016.

b. Prime Forest Land is identified by analyzing average timber productivity for white pine and red oak in all potentially forested areas using soil data, wetland information, aspect, slope position, current land cover, and hydrologic soil association. MassGIS data from NRCS/MassGIS soils information, 2013.

c. The MA Natural Heritage & Endangered Species Program (NHESP) developed BioMap2 to guide strategic biodiversity conservation. BioMap2 defines Core Habitat as “critical to the long-term persistence of rare species ... as well as a wide diversity of natural communities and intact ecosystems.” Critical Natural Landscape is defined as including “large natural Landscape Blocks that provide habitat for wide-ranging native species, support intact ecological processes, maintain connectivity among habitats, and enhance ecological resilience.” MassGIS data, 2011.

h. Prime Farmland is land that has the best combination of physical and chemical properties (soil quality, growing season, moisture supply, pH, salt and sodium content, etc.) for use in the production of food, feed, forage, fiber, and oilseed crops and is available for these uses. Natural Resources Conservation Service Web Soil Survey data.

i. All vernal pools that have been certified by the NHESP according to the Guidelines for the Certification of Vernal Pool Habitat (MA Division of Fisheries & Wildlife, 2009). MassGIS data, 2022.

j. Massachusetts has a total of ~1118 acres of old-growth forest throughout the state. 807 (72%) of these acres are in the 21-town region. Source: D’Amato, Anthony W., David A. Orwig, and David R. Foster. 2006. *New Estimates of Massachusetts Old-Growth Forests: Useful Data for Regional Conservation and Forest Reserve Planning*. *Northeastern Naturalist*, 13 (4): 495–506.

d. NHESP Species of Conservation Concern Habitat includes the footprint of all species listed under the Massachusetts Endangered Species Act and all non-listed, mapped species in the State Wildlife Action Plan. MassGIS data, 2011.

e. The MassWildlife Key Sites analysis is a follow-on project for BioMap2 that identifies areas with especially high clusters of habitats for rare species.

f. Areas included in Massachusetts Drinking Water Regulations (310 CMR 22.00) as Surface Water Supply Protection Zones. MassGIS data, 2017.

g. Areas determined by hydro-geologic modeling and approved by the DEP Drinking Water Program as important for protecting the recharge areas around public water supply groundwater sources. MassGIS data, 2022.

balsam fir with associated red spruce and low numbers of birches, are very uncommon in Massachusetts, found only at the highest elevations in the state on the Berkshire plateau and at Mt. Greylock. Trees of this forest type growing at the highest elevations tend to be stunted and sculpted by ice-laden winds, thin soils, and harsh weather conditions.³² Northern hardwood forests are a widespread forest type in the Partnership region, dominated by sugar maple, American beech, and yellow birch. This mature deciduous forest type may also contain a variety of other hardwood species such as white ash, basswood, red maple, American elm, and black cherry, as well as scattered hemlock and white pine.³³ Transitional hardwood forests have a more southerly distribution in the region and tend to be found on sunnier, warmer south- and west-facing slopes. These forests are dominated by oak and hickory species, mixed with white pine and hemlock.³⁴ The mix of forest types and high tree species diversity in the region means that the region has more diverse resources to draw upon, which may lead to higher resiliency in the face of climate change.

Approximately 206,790 acres, or 60%, of the Partnership region is designated as BioMap2 Core Habitat and/or Critical Natural Landscape, representing 10% of these areas in the state. *BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World*³⁵ is a statewide plan designed to guide strategic biodiversity con-

servation in Massachusetts over the next decade by focusing land protection and stewardship on the areas that are most critical for ensuring the long-term persistence of rare and other native species and their habitats, exemplary natural communities, and a diversity of ecosystems.

Building on *BioMap2*, MassWildlife's (Massachusetts Division of Fisheries and Wildlife) Key Sites Initiative identifies a unique sub-set of *BioMap2* lands that represent the Commonwealth's most significant natural areas. In the Partnership region, 27,426 acres, or 8% of the total area, have been identified as Key Sites. These areas are a combination of rare species hotspots and the best occurrences of highest priority species and natural communities, and include the most diverse forest cores in the state.

The Massachusetts Executive Office of Energy and Environmental Affairs has targeted ten large, un-fragmented ecosystems across the state as a focus for conservation funding in order to protect the state's most unique large habitats. These Habitat Reserves include a mix of private and public lands consisting of mountaintops, wilderness areas, sustainably managed forests and forest reserves, and wild rivers. The Partnership region hosts four of the ten reserves—the Northern Taconics, Mohawk/Savoy/Dubuque, Mount Greylock, and Chalet—which encompass 46% of the region.

32. Natural Heritage and Endangered Species Program. 2016. Classification of Natural Communities of Massachusetts. High Elevation Spruce-Fir Forest/Woodland. <https://www.mass.gov/orgs/masswildlifes-natural-heritage-endangered-species-program>

33. Natural Heritage and Endangered Species Program. 2016. Classification of Natural Communities of Massachusetts. Northern Hardwoods-Hemlock-White Pine Forest. <https://www.mass.gov/orgs/masswildlifes-natural-heritage-endangered-species-program>

34. Natural Heritage and Endangered Species Program. 2016. Classification of Natural Communities of Massachusetts. Oak-Hemlock-White Pine Forest; Oak-Hickory Forest. <https://www.mass.gov/orgs/masswildlifes-natural-heritage-endangered-species-program>

35. Natural Heritage and Endangered Species Program. 2010. *BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World*. <https://www.mass.gov/service-details/biomap2-conserving-biodiversity-in-a-changing-world>

SECTION 2: PARTNERSHIP REGION IN FOCUS

Forests play an integral role in supporting the water resources of the region. The Deerfield River is generally considered to be one of the most pristine rivers in Massachusetts, and is home to a large variety of aquatic and wildlife species. Many of the streams and rivers in the Deerfield River and Hoosic River Watersheds are known for their excellent trout fishing opportunities.³⁶ Hoosic River is the highest elevation watershed in Massachusetts, arising in part on Mt. Greylock. Surface waters, including ponds, lakes, and underground aquifers provide residents and businesses in the region with clean drinking water.

The majority of the region is made up of prime forest soils, which is land that has been rated as being very productive for growing timber based on a high site index for red oak or white pine.³⁷ In addition, 20% of the region is identified as prime farmland, mostly in the river valleys where rich alluvial soils have been deposited for thousands of years. Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for economically producing sustained high yields of crops when proper management and acceptable farming methods are applied.

36. Berkshire Regional Planning Commission and Franklin Regional Council of Governments. June 2002. Mohawk Trail Scenic Byway Corridor Management Plan.

37. See Mass GIS for more information on the definition of Prime Forest Soils: <http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/prime-forest.html>.

The region contains ancient marble and limestone bedrock, which once supported several quarries, including an abandoned marble mine at the Natural Bridge State Park in North Adams (and still supports the quarry at Specialty Minerals, Inc., in Adams). Natural Bridge State Park features a geological formation that is the only natural white marble arch in North America. The bridge was carved from 550-million-year-old marble bedrock by the erosive forces of glacial meltwater over 13,000 years ago.³⁸ It is one of the best places in New England to observe the effects of glaciation, the entire region having been under a 1.5-mile-thick sheet of ice 15,000 years ago.

The melting of the glaciers also formed another unique geological feature in the region. The Glacial Potholes in Shelburne Falls are one of the largest known concentrations of glacial potholes in the country. Ranging in size from six inches to 39 feet, more than 50 potholes here were formed by the whirlpool action of water and gyrating stones during the glacial age. They were created beginning 14,000 years ago, when flooding and receding waters of the Deerfield River eroded the underlying gneiss rocks, and have continued to form and change ever since.³⁹

38. Mass.gov. 2022. Natural Bridge State Park. <https://www.mass.gov/locations/natural-bridge-state-park>

39. Berkshire Regional Planning Commission and Franklin Regional Council of Governments. June 2002. Mohawk Trail Scenic Byway Corridor Management Plan.



Pelham Lake in Rowe. Photo: Hunter Gibson.



Glacial Potholes, Shelburne Falls. Photo: Sophie Argetsinger.

Summary and Key Findings

- The Partnership region has an older and less ethnically diverse population than the state as a whole. An average of 9% of households were living below the poverty line in 2020 and nine towns in the 21-town region contain Environmental Justice (EJ) populations. As of 2020, the region is home to just under 50,000 residents, with a population density of 87 people per square mile.
- Massachusetts' most rural area, the Partnership region contains diverse historic, scenic, and natural beauty and a rich history of working landscapes. While the region's economy has struggled in recent decades, the area's resources and rural quality provide a strong backbone for building a sustainable rural economy.
- The Partnership region is approximately 83% forested. The varied topography of the region creates a convergence of different forest types within a small geographic area, providing a unique opportunity for research and demonstration forestry that could be instructive to many other areas of the eastern United States.
- Bordered by the Green Mountain National Forest to the north, the region's forests are part of an even larger forest block that supports biodiversity and wildlife habitat, and includes the headwaters for the Deerfield, Hoosic, and Westfield Rivers. The majority of the remaining old growth forest in Massachusetts is located in the Partnership region, and geologic features such as the Glacial Potholes in Shelburne Falls and the Natural Bridge in North Adams add to the uniqueness of the area.
- The intact forested ecosystems of the Partnership region are providing essential ecosystem services of high purity water, clean, oxygen-rich air, carbon dioxide storage and sequestration, habitat protection, flood mitigation, and biodiversity that benefit not only the immediate region, but the rest of the Commonwealth and beyond.

SECTION THREE

Climate Change and the Woodlands Partnership Region

THE NEED FOR immediate action to address the global climate crisis presents an imperative, and an opportunity, for the Woodlands Partnership to focus programs and outreach activities on solutions that will protect the vital functions and values of the region's forests. Addressing climate change—and the need for both mitigating the problem and adapting to its impacts—necessitates a many-pronged approach. The Woodlands Partnership could concretely address climate issues in the Partnership region by promoting, funding, and coordinating research on a variety of approaches and practices. These various avenues should include forest conservation (prevention of forestland conversion); protection of old-growth forests, preserves, and wildlands; sustainable and climate-focused forest management; management and control of invasive plant and insect species and diseases; and promotion of a Local Wood movement that would enable local processing, manufacturing, and sale of wood products and could include the promotion of wood reuse and recycling. As the Woodlands Partnership seeks to develop programs and grant-funded projects, any activities that would support the Commonwealth of Massachusetts to meet its state climate goals would be prime candidates for implementation by the Partnership.

Photo: Sophie Argetsinger.



Virginia saxifrage in snow, Rowe. Photo: Sophie Argetsinger.

Science, Policy, and Solutions

Future climate change scenarios, about which there is broad scientific consensus, predict higher average annual temperatures and increased precipitation in the northeastern United States in the next 50–100 years, marked by an increased variability and intensity of weather events.¹ Generally, shorter, warmer winters with less snowfall are predicted, as well as hydrological changes including an increase in extreme rain events and flooding, increased precipitation during winter, earlier peak stream flows in spring, and increased drought during the growing season.² An increase in other extreme weather events like windstorms, hurricanes, and ice storms are also predicted, as well as species range shifts and growing impacts from invasive plants, insects, and diseases.³ These

1. Cardwell, Mary, et al. 2020. *Massachusetts State Forest Action Plan*. Department of Conservation and Recreation.

2. *Massachusetts State Hazard Mitigation and Climate Adaptation Plan*. 2018. Commonwealth of Massachusetts.

3. Janowiak, Maria. 2019. *What's at Risk? Implications of Climate Change in Massachusetts' Forests*. Presentation to Massachusetts Department of Conser-

changes will lead to new and increased pressures on the forests of Massachusetts, but, importantly, the 3.3 million acres of forest in the state (including the approximately 300,500 acres of forest in the Partnership region) also represent one of the best tools currently available to address climate change. Forests sequester (remove from the atmosphere) large quantities of carbon dioxide annually, store carbon above and below ground for long time periods,⁴ and can help mitigate some of the effects of climate change.

As perhaps the most critical environmental issue of our time, the subject of climate change is a central focus of the Woodlands Partnership. With its location in the most heavily forested region in the state, the Partnership should play a critical role in guiding and

vation and Recreation (Forestry Division); Swanston, Christopher W., et al. 2018. *Vulnerability of Forests of the Midwest and Northeast United States to Climate Change*. *Climatic Change*. 146: 103–116.

4. Moomaw, William R., Susan A. Masino, and Edward K. Faison. 2019. *Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good*. *Frontiers in Forests and Global Change*. 2: 27–10.

promoting research, policy, and on-the-ground practices that address climate issues. The diverse array of forest types in the Partnership region provide opportunity for research to better understand climate impacts on our forests, as well as to test and demonstrate the effectiveness of various land management and silvicultural practices available to promote forest health and resiliency.

The *Massachusetts 2050 Decarbonization Road Map*, a comprehensive study by the Commonwealth that looks at ways the state can reach its goal of reaching Net Zero greenhouse gas emissions by 2050, emphasizes the central importance of the preservation, health, and sustainable management of forests to meet this climate goal: “forests across the region represent the largest and most locally impactful opportunity to obtain required carbon removal services.”⁵ As they grow, through their biological processes, forests continuously sequester carbon from the atmosphere, storing that carbon in live vegetation, organic matter on the forest floor (leaves and dead wood), and in the soil.⁶ The forests of Massachusetts are projected to have the ability to sequester about 5 million metric tons of greenhouse gases per year from now through 2050, which represents about 7% of the state’s current emissions and about half of the residual emissions that will be allowable in 2050.⁷ The forests of Massachusetts are estimated to currently store 100 million metric tons of carbon,⁸ although the amount of carbon sequestered and stored by a particular forest is affected by factors such as forest type, age, and site conditions.⁹ Additionally, soils are currently estimated to store about four times as much carbon in the state

as forests; wetlands are also estimated to store more carbon than forests, although covering only about 20% of the land area that forests do.¹⁰ Despite these impressive carbon sequestration and storage capacities found in the Commonwealth’s natural resources, the *Decarbonization Roadmap* emphasizes, “even with the best land and timber management and conservation strategies, Massachusetts’ natural resources alone are unlikely to be able to sequester the amount of carbon needed to achieve Net Zero. Other carbon dioxide removal methods including both direct air capture and the protection of natural resources in neighboring states will need to be pursued.”¹¹

By investing in programmatic development, outreach, and education to municipal and private woodland owners, and by further engaging Indigenous stakeholders and other partners to participate in the Woodlands Partnership, the Partnership will strive to enhance forest conservation, climate-informed forest stewardship, and rural economic sustainability in the region. Some concrete initiatives that have been explored by the Partnership thus far include: establishment of climate-informed demonstration sites at Town Forests in member municipalities where education and outreach events can be hosted and climate-smart forestry practices can be piloted; development of a suite of online resources or “Virtual Forest Center” connecting diverse forest owners to stewardship assistance as a precursor to a physical Forest Center; and support for ongoing multi-organizational progress to make Northwest Massachusetts a leader in preparing for climate change.

5. Ismay, David, et al. 2020. *Massachusetts 2050 Decarbonization Roadmap*. Massachusetts Executive Office of Energy and Environmental Affairs and The Cadmus Group. 6. Ibid. 7. Ibid. 8. Ibid.

9. Cardwell, Mary, et al. 2020. *Massachusetts State Forest Action Plan*. Department of Conservation and Recreation.

10. Ismay, David, et al. 2020. *Massachusetts 2050 Decarbonization Roadmap*. Massachusetts Executive Office of Energy and Environmental Affairs and The Cadmus Group.

11. Ibid.



Old-growth forest canopy, Hopkins Forest, Williams College, Williamstown. Photo: Henry W. Art.

Forest Conservation and Protection of Wildlands

Forest land conversion for development represents the greatest threat to the greenhouse gas sequestration and carbon storage potential of Massachusetts forests. Developing land essentially permanently limits potential future sequestration and storage, in addition to releasing stored carbon through tree removal and soil disturbance.¹² Dedicating significant areas to intact forest ecosystems is essential for addressing climate change.

The Harvard Forest *Wildlands and Woodlands Vision for New England* calls for 70% of forests in New England to be permanently protected by 2060 with 10% of this forest designated as wildlands, which it defines as “large landscape reserves subject to minimal human impact and shaped by natural processes.”¹³ Wildlands are envisioned as ranging in size from 5,000 to 1 million acres and would “slow the pace of climate change by supporting complex,

aging forests that can store twice as much carbon as young forests” and act as benchmarks and sources of insight into natural dynamics.¹⁴ Research has shown that many forests do not slow their storage of carbon as they mature, rather, carbon uptake often increases over time, and protecting forests as wildlands could increase carbon sequestration and storage.¹⁵

Much of the remaining old growth forest in Massachusetts, about 72%, is located in the Partnership region, with key areas of old growth located within or adjacent to the Mohawk Trail State Forest, Savoy Mountain State Forest, Monroe State Forest, and Mount Greylock State Reservation.¹⁶ A 2006 study found trees between 325 and 488 years old in these areas, much older than the typical surrounding forest age of 60 to 150 years.¹⁷ These old growth stands should be highly prioritized for permanent

12. Ismay, David, et al. 2020. *Massachusetts 2050 Decarbonization Roadmap*. Massachusetts Executive Office of Energy and Environmental Affairs and The Cadmus Group.

13. Foster, David, et al. 2017. *Wildlands and Woodlands: A Vision for the New England Landscape*. Petersham, Mass.: Harvard Forest, Harvard University.

14. Ibid. 15. Ibid.

16. D’Amato, A.W., D.A. Orwig, and D.R. Foster. 2006. *New Estimates of Massachusetts Old-growth Forests: Useful Data for Regional Conservation and Forest Reserve Planning*. *Northeastern Naturalist*. 13(4): 495–506.

17. Ibid.

Local Climate Activist Encourages the Woodlands Partnership to Center its Efforts on Climate Issues



Glen Ayers is a climate activist based in the Partnership region who is active in multiple climate groups in Massachusetts as well as local and regional forest protection groups throughout the northeast. In addition, he is working with community organizers to clean up the Lunt property in Greenfield, which is an old industrial site with TCE (Trichloroethylene) groundwater contamination.

As a member of the public, Ayers has been involved with the Woodlands Partnership since its beginnings, regularly attending Partnership meetings to advocate for climate issues and to push the Partnership to focus its efforts and activities on addressing the Climate Emergency. In his role as Regional Health Agent at the Franklin Regional Council of Governments, Ayers worked in the early days of the Woodlands Partnership to ensure that “the health impacts from wood smoke would be considered [by the Partnership], which led to the Massachusetts Department of Energy Resources commissioning a study on biomass emissions by a UMass researcher.” Ayers notes that, “Ultimately, language

was inserted into the [Partnership's] enabling legislation that forbade the Partnership from being involved in biomass production or burning, which I felt was a big success for my efforts at protecting regional public health.”

Despite having now retired from his position as Regional Health Agent, Ayers continues to be involved, and hopes that the Partnership will have as a main focus “climate mitigation within the region, by recognizing the critical role that our potentially carbon-dense forests can play in addressing the Climate Emergency.” Ayers notes that he was “originally a huge critic” of the Partnership when the use of biomass fuel was promoted as an option in the region. “Once that option was eliminated, I continued to attend meetings to make sure that the efforts of the Partnership would include, and even be centered around, addressing the Climate Emergency. I think the Partnership can help the participating towns to secure State and Federal funding to incentivize the increasing climate mitigation potential of our regional forests, which are easily capable of tripling or quadrupling their carbon density and long-term storage, if better policies and practices are put in place.” Ayers asserts, “We have very little time left to completely change the way we treat our forests, in light of the dual Biodiversity and Climate Emergencies.” He hopes that the Partnership can play a key role in addressing these issues in the region.

Glen Ayers has lived and worked in Western MA since 1991 and enjoys hiking, camping, paddling, and leading outings in the region. For eighteen years, he has been a co-host and producer of The Enviro Show, a bi-weekly, hour-long, activist-oriented radio show that airs on stations in Northampton, Greenfield, and North Adams.

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protection, and could form the core of reserve areas, set aside from logging or other human disturbance.¹⁸

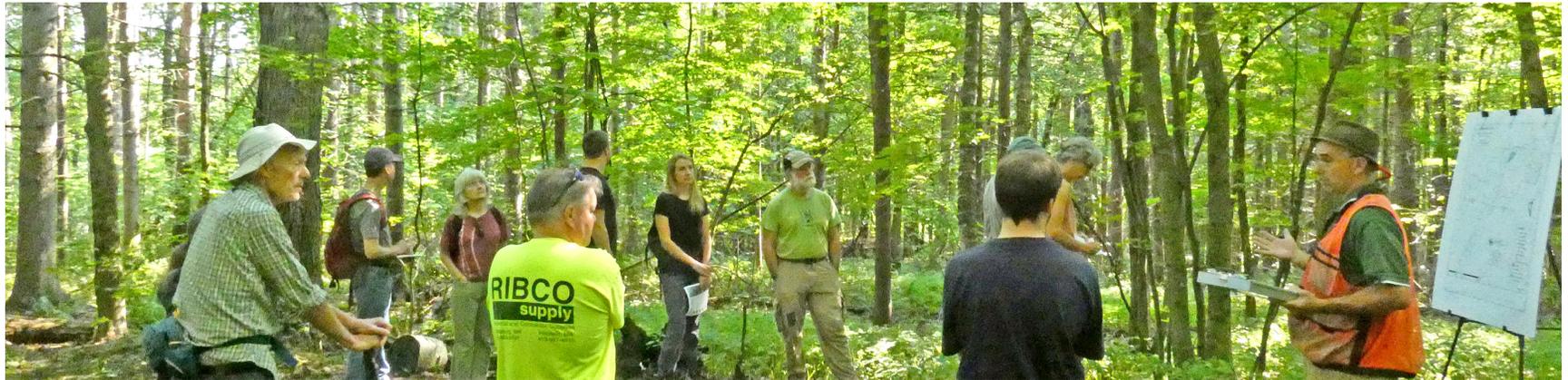
A potential partner organization is the Northeast Wilderness Trust, a land trust committed to identifying priority lands for protection based primarily on ecological value and climate resilience potential that works with landowners and partner organizations to preserve these areas in a “forever-wild” state (with no or minimal management).¹⁹ Northeast Wilderness Trust offers

18. D’Amato, A.W., D.A. Orwig, and D.R. Foster. 2006. *New Estimates of Massachusetts Old-growth Forests: Useful Data for Regional Conservation and Forest Reserve Planning*. *Northeastern Naturalist*. 13(4): 495–506.

19. Northeast Wilderness Trust. 2022. Wilderness Conservation. <https://newildernesstrust.org/wilderness-conservation/>

forever-wild conservation easements to land trusts through their Wildlands Partnership program, as well as wild carbon credits. The Trust notes, “The bulk of land conservation work across the Northeast has been oriented toward conserving managed woodlands and farms, not natural areas. The Wilderness Trust was founded to help restore and preserve new wilderness areas on private land and to champion the wilderness area.”²⁰

20. Northeast Wilderness Trust. 2022. About. <https://newildernesstrust.org/about/>



Forest climate resilience walk at Notch Reservoir, North Adams. Photo: Henry W. Art.

Sustainable & Climate-focused Forest Management

Active forest management maintains land as forest, and in many cases may prevent the conversion of land to non-forest uses by generating needed income for landowners (preventing the sale, subdivision, and development of land). Although harvesting wood on

a forested parcel does release carbon, sustainable and climate-focused forest management techniques can increase the capacity of some forests to sequester and store carbon long-term, and some techniques may lead to faster rates of carbon sequestration after

a harvest than the stand was capable of pre-harvest.²¹ In addition, research has shown that increasing tree species diversity in a forest stand through forest management can increase levels of forest soil organic carbon stocks, and less intensive forest management practices, such as stand density management and thinning, have been shown to have a neutral effect on forest soil carbon stocks.²² By 2030, the State of Massachusetts hopes to incentivize 20% of private forest and farm owners to adopt climate-smart management practices that balance carbon sequestration and storage with increased resilience.²³

Exemplary Forestry, an approach to forestry developed by the New England Forestry Foundation, emphasizes practices that prioritize the long-term health of the forest and the highest standards of sustainability to “enhance the role forests can play to mitigate climate change, improve wildlife habitat and biodiversity, and grow and harvest more sustainably produced wood.”²⁴ Under Exemplary Forestry management techniques, forests grow a higher volume of wood and are able to sequester and store increased amounts of carbon from the atmosphere.²⁵ Climate-Smart Forestry (CSF) is an emerging approach to forestry that is being implemented by

Mass Audubon and other conservation organizations that utilize forest management to create habitat conditions for specific wildlife and bird species.²⁶ CSF practices aim to promote forest adaptation and resiliency to changing climate conditions. Strategies include a focus on maintaining the health and vigor of current tree species, modifying forest management practices to increase levels of stored carbon, increasing structural complexity and tree species diversity in the forest to maximize opportunities for recovery and adaptation, favoring or even planting species and genotypes that are adaptable to projected climate change conditions, and removal of invasive plant species to promote native growth. In general, CSF uses strategies that “involve actions that restore or sustain compositional, structural, and functional diversity to stands, so as to provide flexibility and the potential to shift stand development in different directions as warranted by evolving conditions.”²⁷ One example of a climate-smart technique that might be employed by a forester, Variable Density Thinning, is detailed in the sidebar on page 48.

Although forest management may reduce carbon storage in the short-term, management may be essential in many cases for

21. Ismay, David, et al. 2020. *Massachusetts 2050 Decarbonization Roadmap*. Massachusetts Executive Office of Energy and Environmental Affairs and The Cadmus Group.

22. Mayer, Mathias, et al. 2020. *Tamm Review: Influence of Forest Management Activities on Soil Organic Carbon Stocks: A Knowledge Synthesis*. *Forest Ecology and Management*, 466: 1–25.

23. Baker, Charlie, et al. 2022. *Massachusetts Clean Energy and Climate Plan for 2025 and 2030*. Commonwealth of Massachusetts.

24. New England Forestry Foundation. 2022. Exemplary Forestry. <https://newenglandforestry.org/learn/initiatives/exemplary-forestry/>

25. Exemplary Forestry standards call for an average stocking of ~25

cords of merchantable wood per acre on managed forest lands. Across 16 New England counties, average stocking on privately owned forest land is less than this benchmark. <https://newenglandforestry.org/learn/initiatives/30-percent/>

26. Mass Audubon. 2022. Climate-Smart Forestry. <https://www.massaudubon.org/our-conservation-work/ecological-management/habitat-management/climate-smart-forestry>

27. Palik, Brian J., Anthony W. D’Amato, Jerry F. Franklin, and K. Norman Johnson. 2021. *Ecological Silviculture: Foundations and Applications*. Long Grove, Illinois: Waveland Press.

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increasing the options for and the resiliency of the forest in the face of a changing climate and new forest threats such as diseases and invasive species.²⁸ Palik et al. write in *Ecological Silviculture*, “It is important to recognize that carbon mitigation is one of many objectives being addressed on a given landscape, and a singular focus on maximizing on-site carbon stores may conflict with the achievement of other ecological objectives. For example, carbon management often focuses on promoting and maintaining highly stocked forest conditions; however, such conditions may represent a significant deviation from historical, multiscale patterns in forest density and may increase vulnerability to disturbance events.”²⁹

Local Wood

How wood is used post-harvest influences its carbon footprint—if wood is used to produce durable goods like furniture, building insulation, and cross-laminated timber, its carbon will continue to be stored for decades or even centuries. As discussed in Section 4, Massachusetts currently exports the majority of its annual timber out of state for processing, and then imports an estimated 98% of all the wood products it consumes from out-of-state sources.³⁰ If wood harvested in the Partnership region could be processed and sold locally on a more regular basis, this could have huge climate benefits through the reduction of emissions associated with shipping wood out of state for processing and importing wood and wood products into the state from around the world.

28. Palik, Brian J., Anthony W. D’Amato, Jerry F. Franklin, and K. Norman Johnson. 2021. *Ecological Silviculture: Foundations and Applications*. Long Grove, Illinois: Waveland Press.

29. Ibid.

30. Cardwell, Mary, et al. 2020. *Massachusetts State Forest Action Plan*. Department of Conservation and Recreation.



Timber harvest, Whatley. Photo: Sophie Argetsinger

An Example of a Climate-Smart Forestry Technique in a Northern Hardwoods Forest: Variable Density Thinning

Variable Density Thinning (VDT) is a silvicultural technique that can be employed to increase structural and age diversity in a forest stand, and may be employed to improve the resiliency, health, and carbon storage potential of a stand. Because the dominant forest state in the region was historically old-growth, uneven-aged forest (150–300+ years old), and because the dominant forest in the region is currently second-growth, younger forest (60–150 years old), the majority of forests in Massachusetts are in a simplified state in terms of structure and species composition. VDT attempts to shift a forest stand to a more heterogeneous state by using techniques that emulate small- to medium-scale natural disturbances like wind events.³¹ Three categories of management areas are utilized: skip areas (designated areas of the forest that are kept unmanaged as reserves, often around wetlands or areas of ecological significance); gap areas (small- to medium-sized gaps that promote new tree growth); and the matrix forest, where thinning is utilized.³²

Gap creation has the goal of increasing structural and species diversity in the forest and promoting understory and midstory growth. Under the natural range of variability for the region, it is expected that about 3% of northern hardwood forests will be in the seedling-sapling stage (1–15 years old) at any given time.³³ Live legacy trees should also be retained in gaps for continuity and as seed sources.³⁴ Increased species diversity promoted by gap creation can enhance the resiliency of the forest in the face of disturbances, as more diverse communities distribute risk among a greater number of species, reducing the likelihood that an entire system will be affected.³⁵ Thinning in the matrix forest concentrates on removing low-quality, diseased, competing, or less desirable trees adjacent to larger, more vigorous, or more desirable trees. Desirable trees might include dominant canopy trees with vigorous crowns, trees with structural wildlife benefits such as cavities, hard or soft mast-producing trees (beech, oak, black cherry), trees more tolerant of drought conditions in the face of climate change (oaks), or trees that are not currently or potentially facing outbreaks of invasive insects or diseases. Thinning can help the forest be more resilient in the face of climate change by reducing moisture stress for the retained trees in the face of periods of drought by allowing those trees to grow more vigorously and potentially have more resources to face disturbances. Thinning can also increase old-growth characteristics in the forest by concentrating growth on a fewer number of

31. Palik, Brian J., Anthony W. D'Amato, Jerry F. Franklin, and K. Norman Johnson. 2021. *Ecological Silviculture: Foundations and Applications*. Long Grove, Illinois: Waveland Press.

32. Ibid.

33. Lorimer, Craig G. and Alan S. White. *Scale and Frequency of Natural Disturbances in the Northeastern US: Implications for Early Successional Forest Habitats and Regional Age Distributions*. 2003. *Forest Ecology and Management*. 185:41–64.

34. Palik, Brian J., Anthony W. D'Amato, Jerry F. Franklin, and K. Norman Johnson. 2021. *Ecological Silviculture: Foundations and Applications*. Long Grove, Illinois: Waveland Press.

35. Swanston, Christopher W., et al. 2018. *Forest Adaptation Resources: Climate Change Tools and Approaches for Land Managers*. Second Edition. USDA Forest Service General Technical Report NRS-87-2.



trees, thereby more quickly increasing the number of large trees present in the forest; old-growth stands have been found to have larger overstory trees than second-growth forests.³⁶

A technique that could be combined with VDT to increase the old-growth characteristics of a second-growth stand is the retention and active creation of snags (standing dead trees) and coarse woody materials (fallen dead trees and large branches) in the forest. One of the primary ways that second-growth forests differ from old-growth forests is that old-growth stands have higher degrees of structural complexity, particularly due to the presence of much higher volumes of downed coarse woody material and snags.³⁷ These elements develop in forests over time due to natural disturbances caused by wind, fire, insects and diseases, and as the result of competition-based mortality.³⁸ In New England, 41 species of birds and mammals use standing trees with decay present or standing dead trees, including a variety of woodpeckers, owls, and songbirds, and mammals such as bats, squirrels, porcupines, opossums, raccoons, and ermines.³⁹ Up to 40% of birds in North America are cavity nesters, and primary cavity excavators like woodpeckers most often excavate dead or decaying wood.⁴⁰ The retention or creation of coarse woody material can benefit small animals that use downed woody material as cover, such as voles, shrews, ermine, snakes, and salamanders; black bears, bobcats, foxes, skunks and other mammals may also use large hollow logs as dens.⁴¹ Fungi and invertebrates are hosted by downed woody material, which can increase biodiversity in the forest and act as a food source for many vertebrate species. Adding structure and material to the forest floor increases moisture retention, adds organic matter to the soil, provides nurse logs for the germination of certain species like yellow birch, and can potentially inhibit deer browse of some seedlings. Fallen logs also store carbon and can provide soil erosion control.⁴²

36. D'Amato, Anthony, David Orwig, and David Foster. 2008. *The Influence of Successional Processes and Disturbances of the Structure of Tsuga Canadensis Forests*. *Ecological Applications*. 18(5): 1182–1199.

37. Ibid. 38. Ibid.

39. DeGraaf, R.M. and A.L. Shigo. 1985. *Managing Cavity Trees for Wildlife in the Northeast*. USDA Forest Service General Technical Report NE-101.

40. McComb, Brenda C. 2016. *Wildlife Habitat Management: Concepts and Applications in Forestry*. Second edition. Oregon State University: CRC Press.

41. Ibid.

42. Palik, Brian J., Anthony W. D'Amato, Jerry F. Franklin, and K. Norman Johnson. 2021. *Ecological Silviculture: Foundations and Applications*. Long Grove, Illinois: Waveland Press.



Eastern Newt. Photo: Sophie Argetsinger

Carbon Markets and Payments for Ecosystem Services

As climate change progresses, payments for ecosystem services, particularly those services that can help mitigate the effects of climate change, will likely continue to gain momentum in the state and could greatly benefit the Partnership region. Forests provide a wide range of ecosystem services in addition to wood products and outdoor recreation—they clean the air, filter water supplies, control floods and erosion, sustain biodiversity and genetic resources, and sequester and store carbon from the atmosphere.⁴³ These services have tremendous economic value—in their absence, humans are forced to engineer costly systems to perform the same functions that otherwise occur naturally. The Massachusetts Audubon Society has estimated the non-market value of the services natural areas provide within the state (i.e., flood control, climate mitigation, water filtration) at billions of dollars annually.⁴⁴

The Woodlands Partnership has the potential to facilitate a shift

⁴³. Balloffet, N., R. Deal, Sarah Hines, B. Larry, and N. Smith. 2012. *Ecosystem Services and Climate Change*. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center.

towards increased payments for ecosystem services in the Partnership region by advocating with local and state representatives, securing climate-focused grants, and promoting or connecting municipalities and other landowners with initiatives such as:

- The Pilot Forest Climate Resilience Program (Mass Audubon) and related climate-smart forestry practices developed with DCR and numerous conservation partners to address climate adaptation and managing forests for carbon;
- Exemplary Forestry practices developed around the needs of umbrella wildlife species and to sustainably grow more wood (NEFF);
- The Forest Legacy Program, for which DCR has submitted a successful application to the U.S. Forest Service to make the 21-town Partnership region eligible for this federal competi-

⁴⁴. Mass Audubon. 2020. *Losing Ground: Nature's Value in a Changing Climate*.

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tive conservation funding program in which easements can be purchased from willing sellers;

- The Resilient Lands Initiative, a new state 10-year plan that aims to reduce vulnerability to climate impacts, increase land conservation (No Net Loss of Farms and Forests), and power a green economy through state programs and grants; and,
- The Wild Carbon Credits program (Northeast Wilderness Trust), a carbon offset credits program specifically geared toward land permanently conserved with a Forever-Wild Conservation Easement.

Forest Carbon Offset Projects for Municipalities & Landowners

A growing field in the realm of payments for ecosystem services are carbon markets. In the Partnership region, developing and increasing access to carbon markets could result in job growth in the inventory, qualification, verification, marketing, and sale of carbon credits,⁴⁵ and carbon markets could provide additional income to landowners and create an incentive for private landowners to sustainably manage their forests.

Through carbon markets, landowners who commit to manage their forests, over a very long time period, for increased (additional) carbon storage have the potential to sell this additional stored carbon as “carbon credits.” Landowners can sell these credits to companies or individuals interested in offsetting their own carbon emissions. A successful forest carbon project can create sustainable revenue for a town or individuals over many years. Currently, a carbon project in New England typically needs at least 3,000

45. Wildlands and Woodlands, A Vision for the New England Landscape. <http://www.wildlandsandwoodlands.org/home>

46. Mass Audubon. 2022. Climate-Smart Forestry. Carbon Offset



Blackburnian warbler, Rowe. Photo: Hunter Gibson

acres of well-stocked forest for revenue to exceed the initial development costs, meaning that aggregate projects are often needed, in which several landowners or municipalities bundle multiple landholdings to make the project viable.⁴⁶ However, there are several emerging companies and initiatives focused on making carbon projects accessible to smaller landowners, which may gain traction over time, e.g., the Family Forest Carbon Project, developed by The Nature Conservancy and American Forest Foundation, Forest Carbon Works, and Natural Capital Exchange (NCX). In Massachusetts, Mass Audubon provides technical assistance and

Case Studies. <https://www.massaudubon.org/our-conservation-work/ecological-management/habitat-management/climate-smart-forestry>

outreach to municipalities interested in forest carbon offset projects through their Climate-Smart Forestry program.⁴⁷

There are several examples of successful aggregate carbon projects in New England. To date, there are no established projects located in the 21-town region, although a state grant helped to fund the towns of Williamstown and Conway to explore the potential for a carbon credit program with local landowners. Initiated in 2014 by the cities of Holyoke, West Springfield, and Westfield, the Tri-City Carbon Sequestration program, centered at Bear Hole Reservoir, is the first municipal aggregate carbon project in the U.S.

The project covers 13,500 acres of forest and reservoir land and is expected to offset about 242,000 tons of carbon and generate more than \$2 million in income for the cities between 2019 and 2029. In Vermont, the Cold Hollow Carbon Project, initiated in 2019, has been a successful aggregate project involving 10 private landowners and covering 7,500 acres. Landowners are expected to receive \$25–\$47 per acre from an initial carbon credit sale, and revenue from carbon storage sales will be shared among participants based on acreage, stocking levels, and harvests, with a small percentage allotted to Vermont Land Trust, the administrator of the project.

47. Mass Audubon. 2022. Climate-Smart Forestry. <https://www.massaudubon.org/our-conservation-work/ecological-management/habitat-management/climate-smart-forestry>



Western face of Mount Greylock and Hopper, Williamstown. Photo: Henry W. Art.

The Woodlands Partnership in the Context of Recent Massachusetts State Policy

In 2020, the Commonwealth of Massachusetts set forth both a *Forest Action Plan* focusing on the sustainable management of forest resources in the era of rapid climate change, and the *Massachusetts 2050 Decarbonization Roadmap*, a guide for the state to approach carbon neutrality by mid-century. In 2022, the Commonwealth produced the Massachusetts Clean Energy and Climate Plan for

2025 and 2030, as required by the Global Warming Solutions Act (2008) and the 2021 Massachusetts Climate Law. These policy documents are guides for the Woodlands Partnership to address its goals of supporting local forest conservation, promoting sustainable forestry practices as an economic driver, and improving the fiscal sustainability of the 21 communities in our region.

The Woodlands Partnership as a Component of the Massachusetts State Forest Action Plan⁴⁸

The *Massachusetts State Forest Action Plan* (2020) acknowledges the immediate challenges of climate change, the conversion of our forested landscapes to other uses, the detrimental effects of invasive plants, insects, and diseases, and the disconnect between local wood production and consumption of forest products. To address these issues, the *Forest Action Plan* embraces a set of 10 goals of increasing the resistance and resilience of forests in responding to climate change, managing forests to enhance their biodiversity and ecosystem functionality, supporting sustainable forest management, optimizing urban tree canopies, enhancing forest-people connections, increasing the conservation of forest lands, enhancing the ecosystem services provided by healthy soil, water, and air resources, supporting the appropriate use of prescribed fire in forest management, supporting forestry-conservation stakeholders, and enabling a legal framework to accomplish these goals. The Woodlands Partnership is relevant to all of these goals, and our mission embraces them.

The Woodlands Partnership, in a region of both great biological diversity and great economic development need, is viewed in the *Forest Action Plan* as a public instrument for conserving the region's forests through protective measures, encouraging sustainable forestry practices, promoting forest-based economic development, increasing municipal financial stability, and bringing new sources of funding and assistance to the public from the Commonwealth and U.S. Forest Service.

The *Forest Action Plan* recognizes the Woodlands Partnership

as both a priority and accomplishment. Chapter 1 of the Action Plan identifies the Partnership as being in the most important categories for amounts of land in: DCR Forest Preserves, Parklands, and Woodlands; Spruce Fir and Northern Hardwood Forests; Diversity of Forest types, BioMap2 Core Habitat, Forest Core, and Critical Natural Landscape; Conservation Assessment and Prioritization System Index of Ecological Integrity; Nature Conservancy Resilient Landscape Analysis; and Massachusetts Interior Forests (more than 100 meters from a road). Later chapters identify the Partnership region as having the highest concentration of Prime Forest Lands, timber harvest acreage, and timber harvest rate (acres/mi²).

In Chapter 6 of the plan, furthermore, The Department of Conservation and Recreation lists 40% of the towns within the Partnership as being Priority Urban Forest based on their Massachusetts Sustainable Community Forestry Score, percent of population below poverty level, wildland urban interface, and 303d (Clean Water Act) list of impaired waters. These municipalities include Adams, Buckland, Hawley, Monroe, North Adams, Rowe, Shelburne, and Williamstown, representing 38% of the towns in the Woodlands Partnership region.

The forests of the Woodlands Partnership region are generally considered to be in the Moderate to High categories of conserved and managed, providing ecosystem services. The region essentially contains the entire high elevation forest resources of the Commonwealth, with a disproportionate share of lands above 2,200

⁴⁸ The *Massachusetts State Forest Action Plan* (2020) can be download at <https://www.mass.gov/service-details/massachusetts-forest-action-plan>

feet covered by the Northern Forest type dominated by red spruce and balsam fir.

The Woodlands Partnership is specifically mentioned in the *Forest Action Plan* “Strategies Matrix” under Goal 6: Increase land base of conserved forests (keep forests as forests), “Strategy 44: Support the Mohawk Trail Woodlands Partnership and forest conservation in Northern Berkshire and Western Franklin counties.” The matrix points out the resources available should be from State, Federal, Municipal, and non-governmental sources. State and Federal programs associated with the Woodlands Partnership include Management Forestry, Forest Legacy Program, and Service Forestry. The national priorities of supporting the Woodlands Partnership include conserving forest landscapes, protecting forests from threats, and enhancing public benefits.

The Woodlands Partnership as a component of the *Massachusetts 2050 Decarbonization Roadmap*⁴⁹

The *Decarbonization Roadmap* (2020) “comprised four sector-specific analyses focused on buildings, transportation, non-energy emissions, and the carbon sequestration potential of Massachusetts’ natural and working lands, as well as a separate economic and health impact analysis.” To attain carbon neutrality, the Commonwealth anticipates the need to have the ability to both remove and sequester massive amounts of carbon dioxide from the atmosphere.

The conservation and sustainable management of forested landscapes are essential elements in navigating the *Decarbonization Roadmap*. While sustainable forest management can result in continuation of carbon sequestration and providing ecosystem

services, the *Roadmap* points out that conversion from forested to non-forest land uses usually results in a persistent release of carbon dioxide into the atmosphere. The *Roadmap* time horizon is only 30 years, however, “a more complete accounting of land use impacts on human and natural systems is needed to understand the long-term systemic effects and the balance of ecosystem benefits given these dynamics.”

The *Roadmap* states that “using harvested wood to produce durable goods and materials can maintain a portion of the removed carbon in storage for years (e.g., paper produced from pulp), to decades (e.g., furniture), to over a century (e.g., cross-laminated timber or insulation in buildings), reducing the emissions associated with the original removal activity, perhaps dramatically.” However, according to the *Roadmap*, the burning of woody biomass as a source of electricity or heat is problematic and highly dependent on the amounts of fossil fuel carbon that would be displaced.

The *Roadmap* points out that forest soils play a vital role in the storage of carbon and its long-term sequestration, storing up to four times the amount of carbon than that in living trees. The report stresses the necessity of protecting and properly managing forest soils and wetlands that provide this function. The *Roadmap* also recommends increasing natural carbon stocks through afforestation, reforestation, forest management, and natural ecosystem restoration, as well as implementing regenerative farming practices that increase soil carbon stocks on managed farm and pasture lands.

While the *Massachusetts 2050 Decarbonization Roadmap* doesn’t mention the Woodlands Partnership specifically, there is a clear

49. The *Massachusetts 2050 Decarbonization Roadmap* (2020) can be downloaded at <https://www.mass.gov/info-details/ma-decarbonization-roadmap>

SECTION 3: CLIMATE CHANGE

role for the Partnership to play and recommendations for actions that are identical to the forest lands conservation and sustainable forest management missions of the Partnership. As a public body of the Commonwealth of Massachusetts, the Woodlands Partnership embraces the principles and directives of both the *2050 Decarbonization Roadmap* and the *2050 Forest Action Plan*.

The Woodlands Partnership as a component of the *Massachusetts Clean Energy and Climate Plan for 2025 and 2030 (2025/2030 CECP)*⁵⁰

The *2025/2030 CECP* outlines the Commonwealth's plans to achieve its emissions reduction requirements in *2025* and *2030*, based on the goals of the *Massachusetts 2050 Decarbonizing Roadmap*. The plan recognizes “the important role that carbon sequestration will play in achieving net-zero emissions [and] includes goals and actions to reduce greenhouse gas emissions and increase carbon sequestration on natural and working lands (NWL).” The plan notes that “every policy designed to achieve the greenhouse gas emissions reduction targets has been developed with a lens that focuses on delivering positive outcomes for environmental justice populations,” in order to ensure that the economic and environmental benefits that the plan envisions are available to all. Many of the goals of the *2025/2030 CECP* are highly relevant to and could be supported by the Woodlands Partnership, including:

- Increasing permanent conservation of undeveloped land and water (including wetlands) to at least 28% of Massachusetts by 2025 and 30% by 2030, translating to an additional 167,000

⁵⁰. The *Massachusetts Clean Energy and Climate Plan for 2025 and 2030* can be downloaded at <https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2025-and-2030>

acres of conserved or permanently protected land in the state by 2030.

- Incentivizing 20% of private forest and farm owners to adopt climate-smart management practices by 2030 that balance increased carbon sequestration and storage with increased resilience to disturbance.
- Planting trees in at least 5,000 acres of urban areas by 2025 to increase carbon sequestration and provide urban cooling and stormwater management.
- Planting trees in at least 16,100 acres of riparian areas to expand tree cover along bodies of water and retain transitional habitats along farm fields.
- Achieving no net loss of stored carbon in wetlands by 2030 through improved wetland protection policies, active wetland restoration, and conservation of wetlands and wetland-adjacent lands.
- Incentivizing a 5% increase in utilization of harvested wood in long-lived durable products between 2025 and 2030.

SECTION FOUR

Forests as an Economic Driver

FORESTS PLAY A PIVOTAL ROLE in the Partnership region's economy, as they have for generations. The 2011 Massachusetts Climate Change Adaptation Report¹ notes that each acre of forest in the state provides approximately \$1,500 annually in economic value from forest products, water filtration, flood control, and tourism. By this measure, forests contribute more than \$540 million in value to the Woodlands Partnership region per year.

Responses to local public outreach for the Woodlands Partnership have shown strong support for sustainable natural resource-based economic development that is consistent with the region's rural character. More local jobs are needed to help replace lost jobs within the manufacturing sector in recent years, and to retain more of the region's young people to work and raise families in the places where they grew up. It was noted at one community meeting that even the addition of a handful of jobs could provide a huge benefit to a small town. The Partnership has an opportunity to create rural economic development initiatives that will benefit the Partnership region, and which could also serve as a model for other rural regions.

1. Executive Office of Energy and Environmental Affairs; Adaptation Advisory Committee. 2011. *Massachusetts Climate Change Adaptation Report*.

Mohawk Trail State Forest, Rowe. Photo: Henry W. Art.



Downtown Shelburne Falls. Photo: Sophie Argetsinger

Economic Overview of the Region

Overall, the 21-town Partnership region has experienced a decline in population, jobs, and its labor force in recent years, and experiences lower per capita incomes than Franklin and Berkshire Counties and the state as a whole (see Table 4.1).

Between 2010 and 2020, the Partnership region experienced a 3.6% decrease in total population (slowing a bit from the 4.9% decrease over the previous decade).² The region currently has a labor force, defined as people ages 16 and over who are either employed or actively seeking employment, of 24,823 (down from 26,285 in 2013).³ Between 2015 and 2020, the labor force in the region declined overall by 762, or 3% (see Figure 4.1).⁴ Average annual employment within the 21 towns has also fallen in the last decade, with a loss

of approximately 1,483 jobs between 2010 and 2020.⁵ Tables with data for each individual town can be found in Appendix A.

Per capita income in the Partnership region is less than in Berkshire and Franklin Counties and the state (see Table 4.1).⁶ The average weekly wage for all industry sectors in the region is slightly higher than the Franklin County average, lower than the Berkshire County average,⁷ and far lower than that of the state—wages in the region are 58% that of the state average weekly wage. The unemployment rate in the Partnership region jumped from 5.6% in 2015 to 8.7% in 2020, likely due largely to the COVID-19 pandemic. However, this unemployment rate was lower than in Berkshire County and in the state as a whole.⁸

2. 2010 and 2020 U.S. Decennial Census.

3. Massachusetts Executive Office of Labor and Workforce Development, Labor Force and Unemployment Data 2010–2020.

4. Ibid. 5. Ibid.

6. Esri 2021 estimates of per capita income derived by dividing aggregate income by the total population.

7. Massachusetts Executive Office of Labor and Workforce Development, ES-202 Data, 2020. 8. Ibid.



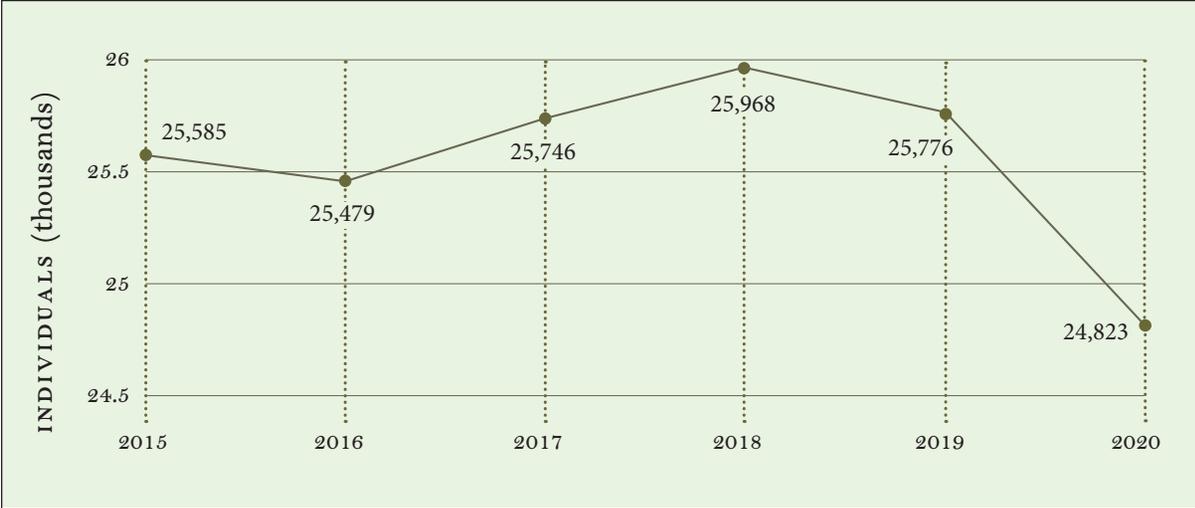
Old growth white ash tree, Monroe.
Photo: Sophie Argetsinger

Table 4.1: Income, Wages, and Unemployment Rate in the 21-Town Region, Compared to Berkshire and Franklin Counties and the State

GEOGRAPHY	PER CAPITA INCOME (2019)	AVERAGE WEEKLY WAGE (2020)	UNEMPLOYMENT RATE (2015)	UNEMPLOYMENT RATE (2020)
21-Town Region	\$33,961	\$935	5.6	8.7
Berkshire County	\$36,759	\$1,034	5.4	9.8
Franklin County	\$35,575	\$911	4.4	7.9
Massachusetts	\$46,241	\$1,609	4.8	9.4

Sources: 2020 US Decennial Census; Massachusetts Executive Office of Labor and Workforce Development, ES-202, Labor Force, and Unemployment Data.

Figure 4.1: 21-Town Labor Force, 2015–2020



Source: Massachusetts Executive Office of Labor and Workforce Development, labor force data.



Jared Bellows with logs to be turned into flooring, Hall Tavern Farm Wood Processing Center, Charlemont. Photo: Jay Healy.

Forest Products

The forest products industry includes jobs in the areas of forestry, logging, primary manufacturing (such as lumber and veneer products), and secondary manufacturing (finished consumer products). This sector has historically been, and continues to be, a pillar of the region’s economy. The industry includes paper manufacturing, which utilizes pulp, as well as wood for energy for heating and /or electric energy production.⁹ Although demand for wood and paper products are high in the state, only approximately 2% of the wood used in the state is actually grown, harvested, and manufactured

within Massachusetts, while the remaining 98% of wood products consumed in Massachusetts are imported from out of state.¹⁰

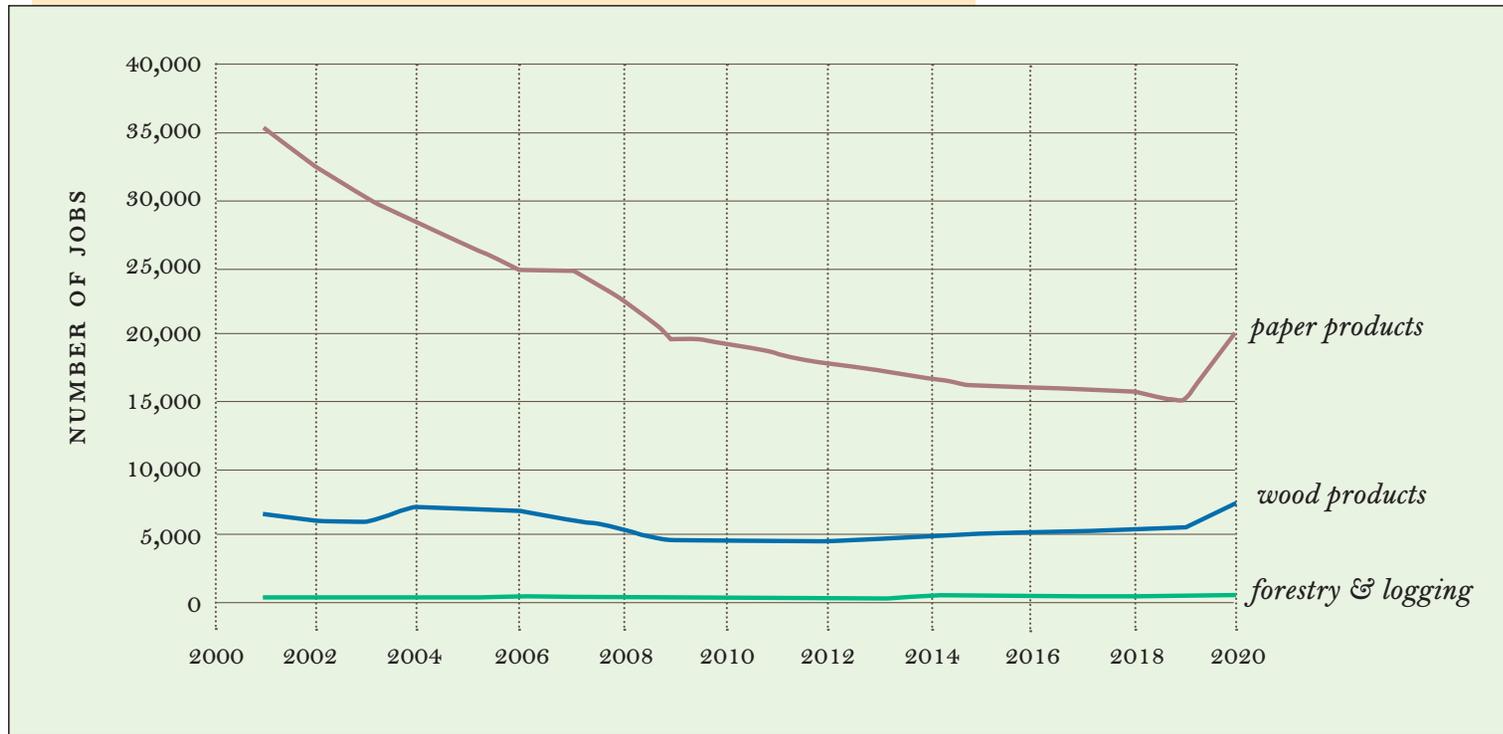
Forest Product Industry Trends in the State

Forestry and forest products are an important part of the regional and state economy: in 2020, the forest products sector provided Massachusetts with 27,566 jobs, consisting of 351 jobs in forestry and logging, 7,197 jobs in wood products manufacturing, and 20,018 jobs in paper manufacturing. However, trends point to more

9. The Partnership enabling legislation states: “No funding received or expended by the partnership shall be used for: (i) the construction or operation of a wood pellet or biomass manufacturing facility.”

10. Cardwell, Mary, et al. 2020. *Massachusetts State Forest Action Plan*. Department of Conservation and Recreation.

Figure 4.2: Massachusetts Forestry and Forest Products Jobs, 2000–2020



Source: Massachusetts Executive Office of Labor and Workforce Development, employment and wage industry data (ES-202).

wood being processed out of state over time, with sawmills, paper mills, and other processing facilities declining in number and jobs (see Figure 4.2). A 2007 survey of licensed harvesters in Massachusetts revealed that the majority (roughly 2/3) of logs harvested

in Massachusetts are sent out of state for processing.¹¹ In a 2020 NEFF survey of Massachusetts licensed timber harvesters, 147 out of 187 respondents noted that they had worked on an active logging job in the past 18 months.¹² The number of sawmills in

11. Finding and Removing Barriers to Sustainable Harvest and Primary Processing of Massachusetts Native Woods. Damery, Dr. David T., University of Massachusetts, Amherst. March 2008.

12. Shakun, Jennifer and Jennifer Fish. 2020. 2020 Massachusetts Licensed Harvester Survey. New England Forestry Foundation and Massachusetts Department of Conservation and Recreation.

Massachusetts has declined over the past several decades, from 94 sawmills in 1993 to 61 in 2006; these mills are concentrated in the western part of the state.¹³ More recently, however, there has been an increase in the number of sawmills in the state, as small thin kerf band mills have become more prevalent.¹⁴

A steep decline in paper manufacturing in the past two decades has resulted in a loss of jobs and local markets for low-grade wood. Between 2001 and 2019, the number of business establishments in the state in the paper products sector declined by 50%, from 470 to 234, and jobs in this sector declined by 58% in the same time period. More recently, however, there has been a shift in this trend, with a significant increase in jobs in the paper products and wood products sectors between 2019 and 2020 (see Figure 4.2). This may be due in part to increased demand for cardboard boxes and other packaging materials during the COVID-19 pandemic. In 2020, shipments of folding cartons increased by 5.5% in the United States.¹⁵ In addition, forestry and logging jobs have remained relatively steady throughout the past two decades, with an increase seen over time (200 jobs in 2001 vs. 351 in 2020). Support activities for forestry¹⁶ have also grown, from four establishments in 2001 to 29 in 2020.¹⁷

13. MA Department of Conservation and Recreation Marketing and Utilization Program. 2006. *Massachusetts Directory of Sawmills & Dry Kilns*.

14. Mahoney, Sean, Director of Wood Utilization, MA Department of Conservation and Recreation. Personal correspondence on 7/12/22.

15. Paperboard Packaging Council. *2020-21 Industry Outlook and Market Data Report*.

16. This industry comprises establishments primarily engaged in performing particular support activities related to timber production, wood technology, forestry economics and marketing, and forest protection. These establish-

Forest Product Industry Trends in Berkshire and Franklin Counties

Local processing and sale of wood products increases the economic benefit to the local and regional economy, but these sectors have declined over time in Berkshire and Franklin Counties even more steeply than in the state as a whole. Declines in local wood processing and sales have translated into a drastic decline in jobs in these sectors in Berkshire and Franklin Counties in the past two decades. Between 2001 and 2020, the number of business establishments in the wood product and paper manufacturing sectors in the two counties declined by 78% (see Table 4.2), and average monthly employment in these sectors declined by 80% during the same period.¹⁸

One example of a once-thriving business in the region that has since shut its doors is Deerfield Specialty Paper (formerly the Deerfield Glassine Company), a paper mill located on the Deerfield River at the site of the former Ramage Paper Co., founded in 1887. Once producing 10 tons of paper a day¹⁹ and the town of Monroe's main employer, the plant shut down in 1996. The town and the Franklin Regional County of Governments received

ments may provide support activities for forestry, such as estimating timber, forest firefighting, forest pest control, and consulting on wood attributes and reforestation.

17. Massachusetts Executive Office of Labor and Workforce Development, ES-202 Data, 2001–2020.

18. Ibid.

19. WCVB. March 14, 2019. *The Former Ramage Paper Mill: Monroe is Still Working to Rebound After the Closing of their Paper Mill*. <https://www.wcvb.com/article/the-former-ramage-paper-mill/26829021>

Table 4.2: 2001, 2010, and 2020 Number of Establishments and Average Monthly Employment, Berkshire and Franklin Counties

SECTOR	2001	2010	2020	2001–2020 CHANGE	2001–2020 % CHANGE
Number of Establishments					
WOOD PRODUCT MANUFACTURING	54	10	11	–43	–80%
PAPER MANUFACTURING	42	26	10	–32	–76%
TOTAL	96	36	21	–75	–78%
Average Monthly Employment					
WOOD PRODUCT MANUFACTURING	574	133	45	–529	–92%
PAPER MANUFACTURING	4,597	2,189	968	–3,599	–79%
TOTAL	5,141	2,322	1,013	–4,128	–80%

Source: Massachusetts Executive Office of Labor and Workforce Development, employment and wage industry data (ES-202).

a grant to remove the deteriorating building in 2016 and clean up the site, which is now a launching area for whitewater rafting excursions.²⁰

Still, employment within the wood product and paper manu-

20. Fact Sheet: Brownfields Clean-up Project for the Former Ramage Paper Mill—Wood Structure, Depot Street, Monroe, MA. <https://frcog.org/wp-content/uploads/2016/11/Ramage-Wood-Structure-Fact-Sheet.pdf>

21. Massachusetts Woodlands Institute. 2018. Western Mass Wood. Find Local Wood: A Directory of Local Wood Suppliers. <http://www.westernmass-wood.org/find-local-wood/>

208 farms in Berkshire and Franklin Counties selling forest products (not including Christmas trees, short rotation woody crops, or maple syrup), an increase of 68 since 2012, with total income from these sales amounting to \$1,337,000.²³ Within the Partnership

22. Cardwell, Mary, et al. 2020. *Massachusetts State Forest Action Plan*. Department of Conservation and Recreation.

23. United States Department of Agriculture (USDA) 2017 and 2012 U.S. Census of Agriculture. County-level data, Table 6: Income from Farm-Related Sources.

facturing sectors continues to represent 1.2% of all employment within the two counties, a higher percentage than within the state as a whole (0.8%). Western Mass Wood, which maintains an unofficial directory of local wood suppliers, lists 32 active sawmills (stationary and portable) in Berkshire County and 22 in Franklin County; this includes 16 mills in the Partnership region.²¹ Currently, local mills tend to manufacture products for local markets, and compete well primarily in two areas: niche, high-value products, and bulky products that are difficult to ship, such as industrial sawn wood, firewood, and mulch.²²

Agriculture is an important sector of the economy in Berkshire and Franklin Counties, and woodlots are a vital part of many farms. The U.S. Census of Agriculture reported that in 2017 there were

region, wood products offered by farms include firewood, framing timbers, siding, and lumber.²⁴

Factors of Decline and Community Needs

There are a number of factors that have likely contributed to the decline in the forest products industry in Massachusetts over time, including:²⁵ Globalization and development of low-cost shipping methods that allow for shipment to international markets; competition from high-production mills in northern New England and Canada; steep energy, insurance, and equipment upgrade costs that act as hurdles to smaller companies and mills; and the small parcels and diverse private land ownership patterns that characterize Massachusetts and create challenges to forestland management. Public outreach for the Woodlands Partnership highlighted some of the concerns and needs of local forest product businesses, including:

- The need for more processing facilities in the region;
- Assistance for locally owned sawmills to upgrade equipment and meet regulations;
- Assistance for businesses to upgrade equipment to conduct low-impact logging;
- The need to develop more local markets for low-grade wood and wood products and provide marketing assistance to businesses;

24. From a search of farms on the Community Involved in Sustaining Agriculture (CISA) and Berkshire Grown websites: <http://www.buylocalfood.org/>; <http://berkshiregrown.org/>

25. Summarized from Damery, Dr. David T., 2008, *Finding and Removing Barriers to Sustainable Harvest and Primary Processing of Massachusetts Native Woods*, University of Massachusetts, Amherst; Cardwell, Mary, et al. 2020,

- The need to assist harvesters with equipment (timber mats, etc.) to deal with significant reductions in frozen-ground conditions due to climate change; and,
- The need to conduct additional outreach, education, and coordination among landowners.

A need to develop local markets for low-grade wood was heard at several early Partnership community meetings. Low-grade wood has little to no marketable value for lumber and is not cost-effective to ship long distances, necessitating the need for local markets. It can be used for firewood, pallets, wood pellets, and potentially for flooring and other products if local mills are set up to process small-diameter logs. Establishing more local markets for low-grade wood would help to support sustainable forestry, improve long-term timber management, increase the value of harvests and income to landowners, and support local jobs. This need to develop better markets for low-grade wood also emerged as a theme in a 2020 state timber harvester survey, in which many respondents commented on the need to develop better markets for low-grade wood.²⁶

Harvesting and Stumpage Trends

Despite the challenges and declines seen in the forest products industry in recent decades, markets and prices for sawlogs and some low-grade wood (firewood, roundwood, and chips) in the state are

Massachusetts State Forest Action Plan, Department of Conservation and Recreation; and from input from the Massachusetts Department of Conservation and Recreation, January 2015.

26. Shakun, Jennifer and Jennifer Fish. 2020. *2020 Massachusetts Licensed Harvester Survey*. *New England Forestry Foundation and Massachusetts Department of Conservation and Recreation*.

strong and demand is very high.²⁷ The 2020 *Massachusetts Forest Action Plan* notes that forest cutting plans filed with the DCR over the last decade indicate that there has been a trend of increasing harvest volume planned in the state, with an average of 15,547,000ft³ planned for harvest between 2010 and 2017.²⁸ This volume is higher than the average volume planned for harvest from 2003–2009 and includes an increase in volume of chips and pulp. Stumpage prices (prices paid for harvest rights of standing timber), which slumped during the nationwide recession of 2007–2009, have rebounded strongly in the last decade (see Figure 4.3), although they have not returned to pre-downturn levels for every species.²⁹ The most recent available stumpage reports (2021, Quarters 1–3) indicate average median prices of \$313, \$295, and \$58 per thousand board feet for red oak, sugar maple, and white pine, respectively.³⁰

On its estimated 2.9 million acres of timberland,³¹ the annual net growth of forests in Massachusetts

27. Input for the Massachusetts Department of Conservation and Recreation, January 2015.

28. Cardwell, Mary, et al. 2020. *Massachusetts State Forest Action Plan*. Department of Conservation and Recreation.

29. UMass Amherst, MassWoods. 2022. Price Trends over Time by Species (1994–2018). <https://masswoods.org/stumpage/trends>

30. Ibid.

31. Cardwell, Mary, et al. 2020. *Massachusetts State Forest Action Plan*. Department of Conservation and Recreation.

Lever Supports Entrepreneurial Spirit in the Partnership Region

Lever, Inc.,³² a business incubator based in North Adams with a seat on the Woodlands Partnership Board, has conducted two separate Entrepreneurial Challenges focusing on woodland-related tourism or natural products businesses based in Partnership member towns, as of 2022.³³ Through the Challenges, funded by two EOEEA grants, owners of regional businesses that are creating jobs receive expert advice on business plans and compete for a \$25,000 grant to invest in their venture. The owners of Foolhardy Hill,³⁴ a new campground in Charlemont seeking to attract eco-tourists, won the first Challenge and shared their story at the June 2021 Partnership Board meeting. The 2022 Challenge was focused on companies developing sustainable wood and forest product businesses (not including wood-based fuels), and was won by The Cruckfather, LLC of Hawley,³⁵ a business that uses traditional New England construction techniques to create timber-framed structures. The competitions prioritized business models that 1) serve customers from within and outside of the Partnership region, 2) have high potential to create new jobs, 3) are capable of attracting grant, debt, or equity financing.

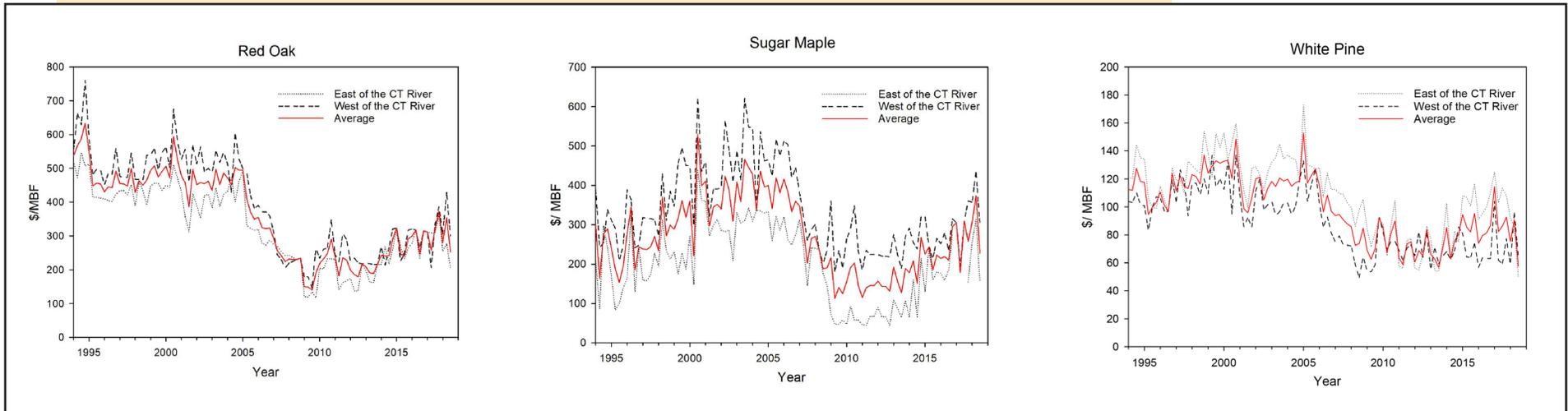
32. Lever, Inc. <https://leverinc.org/>

33. Lever Challenges. <https://leverinc.org/challenges/>

34. Foolhardy Hill Campground. <https://www.foolhardyhill.com/>

35. The Cruckfather, LLC. <https://thecruckfatherllc.com/>

Figure 4.3: Stumpage Price Trends Over Time (1994–2018) for Red Oak, Sugar Maple, and White Pine*



* Prices are adjusted for inflation and are represented in 2018 dollars. Note the differing y-axis scales.

Source: UMass Amherst, MassWoods. 2022. *Price Trends over Time by Species (1994–2018)*. <https://masswoods.org/stumpage/trends>.

well exceeds annual harvest levels, with a growth-to-harvest ratio of 12.7-to-1 estimated on timberlands in Massachusetts in 2008,³⁶ and a 6.8-to-1 growth to harvest ratio estimated in 2017.³⁷ Harvest levels have the potential to be sustainably increased in the region. Sustainable forestry guidance is provided in Massachusetts via the Department of Conservation and Recreation’s Working Forest Ini-

tiative (which includes the Forest Stewardship Program and For-esters for the Birds), climate-smart forestry practices identified by Mass Audubon, and the Exemplary Forestry approach developed by the New England Forestry Foundation, which balances climate mitigation, growing more and better-quality wood, and habitat needs for a region’s umbrella wildlife species.³⁸

36. Cretaz et al. 2010. *An Assessment of the Forest Resources of Massachusetts*. USDA Forest Service. Ratio estimated from 2008 Forest Inventory Analysis data. The U.S. Forest Service defines timberland as “forest land that is producing or is capable of producing crops of industrial wood over 20 cubic feet per acre, per year, and not withdrawn from timber utilization by statute or administrative regulation.”

37. Cardwell, Mary, et al. 2020. *Massachusetts State Forest Action Plan*. Department of Conservation and Recreation.

38. For more on Exemplary Forestry, visit <https://newenglandforestry.org/learn/initiatives/exemplary-forestry/>

Increasing Sustainably Harvested and Processed Wood in the Region

Increasing the amount of wood that is sustainably harvested and processed in the region could result in more businesses and jobs within the forestry, logging, and primary processing sectors. This could in turn provide additional tax revenue to towns. Additionally, sustainable timber harvests can be a valuable source of income for landowners, thereby reducing pressures to sell forest land for development and supporting continued ownership and stewardship of the land.

Poor harvesting practices such as high-grading, which removes the most valuable trees in the forest and leaves the rest, reduces the future value for wood production, reduces growth rates, damages the forest aesthetics and gene pool, increases vulnerability to disturbances such as invasive species, and reduces the long-term ability of the forest to sequester and store carbon.³⁹ Sustainable forestry means keeping forests healthy, dynamic, and productive for future generations. It addresses all of the resources provided by forests, including habitat, clean water and air, carbon sequestration, recreation, timber, jobs, and scenic beauty, and seeks to keep viable all of these options and opportunities.⁴⁰ While active management is not suitable for all lands, sustainable forestry can increase resilience to climate change through the enhancement of

diversity to the forest structure, management of invasive species and diseases, creation and improvement of wildlife habitat, and by enhancing the forest's capacity to sequester and store carbon.⁴¹ Having a healthy harvesting and processing infrastructure will help the region better respond to the changing conditions in the forests from climate change.

Increasing Local Markets for Wood Products

Increasing the percentage of wood that remains in the state for local and regional consumption could support primary processing facilities such as sawmills that are set up to sell to local markets, and small businesses and craftspeople who sell finished consumer products locally. The Buy Local movement has steadily grown in popularity in the region and offers an opportunity to increase the production and sale of local wood products in Massachusetts.

By using more wood from its own forests, Massachusetts would reduce costs and emissions associated with long-distance shipping, and would reduce environmental impacts from illegal logging or destructive practices in regions with less environmental oversight than Massachusetts, where wood is often imported from.⁴² There is a burgeoning green construction business sector in the region, which could tie into a Buy Local Wood movement for construction materials. The State Building Code allows for the use of ungraded

39. Perschel, Robert T., Alexander M. Evans, and Marcia J. Summers. 2007. *Climate Change, Carbon, and the Forests of the Northeast*. Forest Guild; Catanzaro, Paul and Anthony D'Amato. n.d. *High Grade Harvesting: Understand the Impacts, Know your Options*. University of Massachusetts, Amherst.

40. USDA Forest Service. 2005. *Diameter Limit Cutting and Silviculture in Northeastern Forests: A Primer for Landowners, Practitioners, and Policy Makers*; Smallidge, Peter J. *What is Sustainable Forestry?* Cornell Forestry Extension Program.

41. Hines, S.J. and A. Daniels. 2011. *Private Forestland Stewardship*. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center.

42. 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*. Harvard University Press.

SECTION 4: FORESTS AS ECONOMIC DRIVER

native wood produced by registered mills in the building of one- and two-story dwellings, barns, and sheds.⁴³

Mass Timber

A recent focus of the climate and sustainability movement, through initiatives like WoodWorks⁴⁴ and the New England Forestry Foundation's Forest-to-Cities Climate Challenge,⁴⁵ has been replacing energy-intensive structural building materials like steel and concrete with mass timber (large, strong, multi-layered building elements created by joining smaller pieces of lumber together). The 2021 International Building Code (IBC) allows the use of mass timber in structures up to 18 stories tall, and there are now more than 1,000 mass timber buildings completed or in design in the United States,⁴⁶ including the Olver Design Building at the University of Massachusetts, Amherst.

Replacing steel and concrete with long-lived wood products like mass timber has substantial potential climate benefits.⁴⁷ Trees, a renewable resource, remove carbon dioxide from the atmosphere through photosynthesis while growing. This carbon remains stored in wood, or products like mass timber, for decades after harvest—as long as the building stands, and often much longer.⁴⁸ An increased demand for mass timber in the area could support the forest products industry as well as sustainable forest management in the region. The 2020–21 Regional Dialogue on Incentivizing Mass Timber in Central New England and Eastern New York to



John W. Olver Design Building, UMass Amherst. Photo: Henry Art.

Reduce Climate Change was a year-long discussion among scientists, NGOs, and state policy staff from Massachusetts, New Hampshire, Vermont, and New York that agreed on a blueprint for incentivizing the use of mass timber in the region as a way to address climate change, sustainable building issues, economic development, and sustainable forestry goals.⁴⁹ With support from a U.S. Forest Service Wood Innovations grant, the New England

43. Mass.gov. 2022. Massachusetts State Building Code – 780 CMR. <https://www.mass.gov/massachusetts-state-building-code-780-cmr>

44. Woodworks. <https://www.woodworks.org/why-wood/sustainability/>

45. New England Forestry Foundation. 2022. Forests-to-Cities Climate Challenge. <https://foresttocities.org/>

46. Mass Timber Regional Dialogue. 2021. What is Mass Timber? <https://www.masstimmerregionaldialogue.com/what-is-mass-timber>

47. National Alliance of Forest Owners (NAFO). <https://www.forestcarbondataviz.org/>

48. Build It With Wood. <https://builditwithwood.org/>

49. Mass Timber Regional Dialogue. 2021. <https://www.masstimmerregionaldialogue.com/>

Forestry Foundation commissioned an assessment of the potential for a mass timber mill in New England, which concluded that regional mass timber production could be competitive in the U.S. Northeast market.⁵⁰ Analysis done by the University of Massachusetts Amherst in their wood construction lab in the Olver Design Building (the largest modern institutional wood building in the East), has shown that eastern hemlock and white pine grown in Western Massachusetts can be used to make mass timber panels. A current project is producing eastern hemlock wood panels for use in Boston's first mass timber building in the summer of 2022.

Wood Energy for Home Heating

An estimated 10.8% of homes (2,759) in the 21-town region heat with wood, compared to 12.3% in Franklin County and 4.4% in Berkshire County (2020 estimates).⁵¹ These numbers are high compared to the state as a whole—about 1.3% of all homes in the state use wood as a heating source. In the Partnership region, the use of wood for heating homes is the third most common method, after gas and fuel oil; about 40% of homes (10,166) use gas as a heating source, and about 38% (9,777) use fuel oil. Other methods used in the region include electricity (8%), coal or coke (0.3%) and solar energy (0.3%).⁵² Around 13,000 rural homes in Massa-

chusetts experience energy insecurity every year, and many people rely on wood banks to heat their homes during the colder months. Wood banks distribute firewood to people in need of energy, often utilizing logs from town utility work, and rely on volunteers to split, stack, and dry firewood for distribution. There had been no wood banks located in the Partnership region until the town of Buckland received a \$113,000 state grant in October 2022 to purchase equipment, such as a processor and splitter, to establish one (other wood banks can be found in Athol, Goshen, Montague, and Petersham). With the high percentage of homes in the region that use wood for heat, this new wood bank will likely be of great benefit to the town and region.

Wood Building Insulation

Using low-quality wood to make sustainable building insulation has a nearly \$1 billion market in Europe, and the U.S. is opening its first wood insulation mill in central Maine.⁵⁴ This technology has many environmental advantages over energy intensive fiberglass, plastic, or rock wool insulation, which currently make up most building insulation. Building insulation cannot be economically shipped long distances, so locally grown and manufactured wood insulation may be a potential new market in the Partnership region.

50. Poyry and New England Forestry Foundation. 2017. *Assessing the Wood Supply and Investment Potential for a New England Engineered Wood Products Mill*.

51. U.S. Census Bureau, 2015–2019 American Community Survey 5-Year Estimates.

52. Ibid.

53. Medoza, Julian. October 28, 2022. *Buckland Plans New Wood Bank with \$113k Grant*. Greenfield Recorder.

54. Go Lab, Inc.'s Timber HP program. <http://timberhp.com>



Rafting on the Deerfield River near Zoar Gap, Rowe. Photo: Henry Art.

Natural Resource-based Tourism and Outdoor Recreation

Tourism is an important component of the economy in Berkshire and Franklin Counties and in the Partnership region. In 2018, visitors to Berkshire and Franklin Counties spent roughly \$535 million in expenditures, generating \$16 million in local tax receipts.⁵⁵ The majority of spending occurred in Berkshire County, which attracts an estimated 2.6 million visitors a year.⁵⁶ Travel-generated employment for both counties amounted to 4,400 jobs, with a total payroll of \$137.6 million. Tourism-related expenditures and employment within the two counties represented approximately 2.6% of expenditures and 3.5% of employment statewide.⁵⁷

55. Massachusetts Office of Travel & Tourism, 2019 Annual Report (published May 2020).

56. Housatonic Heritage. 2021. Berkshire Visitors Bureau. <https://housatonicheritage.org/Places/berkshire-visitors-bureau-the-berkshires-in-western-massachusetts/>

The Massachusetts Office of Travel and Tourism provides state funds to Regional Tourism Councils (RTCs) through its Regional Grant Program. In 2019, \$362,964 in grants were allocated to the Berkshire RTC and \$176,360 to the Franklin RTC. The program requires that RTCs match all grants with a minimum of one-to-one nongovernmental funds.

Scenic beauty is a principal reason visitors come to the region, and nearly 90% of visitors engage in some form of outdoor recreation during their stay.⁵⁸ Visits to museums and historic sites are another popular activity (81% of visitors), and performing arts are

57. Massachusetts Office of Travel & Tourism, 2019 Annual Report (published May 2020).

58. Fanto, Clarence. Berkshire Eagle, Dec. 14, 2021. *The Average Age of Berkshire County Tourists is Younger than You Think—11 Years Younger, Actually.*

also a draw (52%).⁵⁷ The average age of visitors has decreased in recent years, and there has been an increase in families with children visiting the region.⁵⁸

The Partnership region provides an array of outdoor recreation options for visitors and residents on state-owned lands, municipal, non-profit, and land trust properties, and on private properties that allow for public access. Activities include bird watching, hiking, cross-country skiing, snowshoeing, hunting, snowmobiling, kayaking, canoeing, tubing, fishing, swimming, camping, and mountain biking. Maintaining properties and balancing recreational use demands remains a challenge for state, town, and other conservation agencies to sustain. Growing and enhancing the network of recreational offerings will require a strategy for ensuring maintenance is sustainable over the long term.

The Partnership region contains segments of three long-distance hiking trails, including the Appalachian National Scenic Trail (AT), which sees 2 to 3 million visitors on its various stretches from Georgia to Maine each year. Recreation companies like Berkshire East Ski Resort and Zoar Outdoor in Charlemont also contribute greatly to the recreational assets of the region. It is somewhat unclear how the pandemic has affected these companies. Crab Apple Whitewater, Inc., a rafting company located in Charlemont, noted that they usually take about 15,000 guests down the

Deerfield River each season, but that these numbers were heavily affected by the COVID-19 pandemic—the company had about 5,500 guests in 2020, which increased to 9,500 in 2021, and is expected to be about 11–12,000 in 2022, still lower than pre-pandemic numbers.⁵⁹ Berkshire East, on the other hand, noted that they had a slightly higher number of visitors than average following lockdown, which they credited to the fact that they are able to provide activities in an outdoor space that allows for social distancing.⁶⁰

Potential Impacts of Increasing Forest-Based Tourism in the Woodlands Partnership Region

Potential advantages of increasing forest-based tourism in the region include stimulating local economies by bringing in outside dollars, benefits to recreation and tourism businesses as well as a variety of other businesses, and increased tax revenues to towns.⁶¹ Tourists to rural areas are often looking for a broader experience that combines outdoor recreation with high-quality accommodations, shopping, and cultural opportunities.⁶² This type of tourism potentially supports the preservation and enhancement of rural communities and places, which can attract more visitors and benefit existing residents.⁶³ The beauty of the natural environment plays a key role in drawing visitors to rural areas.

Participants at Partnership outreach meetings in 2013 and 2014

57. Fanto, Clarence. Berkshire Eagle, Dec. 14, 2021. *The Average Age of Berkshire County Tourists is Younger than You Think—11 Years Younger, Actually.*

58. Ibid.

59. Frank Mooney, Crab Apple Whitewater, Inc. 2022. Personal correspondence.

60. Melissa Roberts, Berkshire East Ski Resort. 2022. Personal correspondence.

61. Reeder, Richard J., and Dennis M. Brown. 2005. *Recreation, Tourism, and Rural Well-Being.* United States Department of Agriculture Economic Research Service. Economic Research Report Number 7.

62. Ibid.

63. Reilly, Catherine J., and Henry Renski. 2007. *Place and Prosperity.* Maine State Planning Office. Prepared for Governor's Council on Maine's Quality of Place.

SECTION 4: FORESTS AS ECONOMIC DRIVER

expressed the need to better market the region to tourists; participants were also interested in having a visitor center where local wood products could be marketed. Keeping recreational tourists in the area longer to support local businesses, improving tourism infrastructure, and improving access to some recreational sites were also identified as needs. At the same time, some communities were concerned about how an influx of tourists would impact the character of their town, and were concerned that some towns don't have the capacity and infrastructures to deal with emergencies, traffic, and other issues that may arise from more visitors.

While increased access to and promotion of natural amenities can lead to increased tourism and economic growth, the integrity of the area's natural resources must be protected to sustain a healthy tourism industry into the future.

Recreation: Assets in the Partnership Region

The Franklin Regional Council of Governments completed a recreational assets inventory and mapping project in 2021, focused on the Partnership region. Recreational sites were inventoried by town, with acreage, public access information, handicapped accessibility, and specific recreation types tabulated. Sites included state- and town-owned recreational areas, wildlife management areas, and properties owned by land trusts, as well as campgrounds, school grounds and athletic fields, playgrounds, picnic areas, and boat launches. 185 recreational sites were identified in the region, covering approximately 93,393 acres. The public has access to a diverse array of outdoor recreational opportunities through these sites.

As part of the project, broad issues and needs were identified concerning recreational resources in the region. This included needs for:

- Trail maintenance to improve issues like degraded trails and inconsistent or faded trail markings
- Improvements to and expansion of parking areas
- Paving and signs at some boat launches
- More public restrooms and waste management facilities
- Additional Americans with Disabilities Act (ADA) accessible recreational facilities
- Improvements to playgrounds
- More on-site information available for visitors
- Linkages of trails into trail networks where appropriate
- Online maps and consistent signage for state properties managed by Department of Fish and Wildlife and Department of Conservation and Recreation
- More information about recreation opportunities, rules, regulations, and accessibility on town websites
- Better cellular service in some areas
- Improved options for using public transit to reach recreational sites, such as shuttling from parking lots

Marketing the Northern Berkshire Mountains AND the Hilltowns

BY WHIT SANFORD

Berkshire County has a thriving tourism and second home industry that includes the arts, recreation, and hospitality sectors. Western Franklin County does, too.⁶⁴ At issue is the different marketing capabilities of each county.

Berkshire County has a powerful marketing program for its part of the Berkshires,⁶⁵ especially because the county's name is synonymous with the mountain range, and it has long been a place recognized for its arts and cultural venues that have attracted tourists and second home owners to the region.

This is not true of the Hilltowns. For the most part, tourists pass through West County on their way to the Berkshires—these towns are not part of the marketing program of the Berkshire County Tourism Bureau, and therefore do not enjoy its specific benefits (with the exception, perhaps, of Charlemont, the outdoor recreation hub of northwest Massachusetts).

More importantly, Franklin County, one of the poorest areas of the state, has a different approach to marketing its region. It focuses on promoting communities in its three sub-regions—West County (Shelburne Falls and Charlemont), Upper Connecticut River Valley (Greenfield and Deerfield), and North Quabbin (Orange and Athol). Each has different strengths and landscapes.

The Hilltowns have their own unique scenic beauty. They are more bucolic, with rivers to run and fish, and farms and farmers' markets to visit. They host Berkshire East, Zoar Outdoors, and Crab Apple Whitewater, have myriad trails to hike and explore, are chock-a-block with fine restaurants and welcoming B&Bs, and host a vital and unique creative sector with two internationally known theater companies,⁶⁶ many arts organizations, and remarkable artists, craftspeople, and musicians.

West County could be a new model for rural development where the geography, topography, and natural resources do not specifically identify them as a "place." Instead, the people and creative, agricultural, recreational, and hospitality sectors make the region a destination where visitors can relax and enjoy the peace of rural living. Done properly, tourism and second home development could preserve the region's natural resources base, rural culture and heritage, and boost its economy.

64. Locally known as West County or the Hilltowns.

65. In fact, the Hilltowns are geologically part of the Berkshires. Leyden, Colrain, Shelburne, Conway, Charlemont, Heath, Buckland, Hawley, Ashfield, Rowe, and Monroe are part of the Berkshire Hills. <https://en.wikipedia.org/wiki/Berkshires>.

66. Double Edge Theatre in Ashfield: doubleedgetheatre.org and Piti Theatre Company in Shelburne Falls: ptco.org.



Historic home in Ashfield. Photo: Sophie Argetsinger.

Center People and Place in the Woodlands Partnership



Whit Sanford has been involved with the Woodlands Partnership since its inception, serving on the Partnership Advisory Committee beginning in 2015, then serving as a Board member until 2022. Although no longer serving on the Board, Sanford continues to be actively involved with the Partnership, attending meetings, doing outreach, and drafting written materials, and she remains a strong, outspoken supporter of the Partnership.

Sanford has lived in the Partnership region for over 30 years, since moving to Conway from a rural region of the Catskills in the nineties. More recently, she has been enjoying life as a resident of Shelburne Falls, noting, “I love the mountain landscape ... [Shelburne] has everything I love: the rural culture, the environmental qualities, the recreational amenities—all the things that make life wonderful! I particularly love living in the village ... the quality of the architecture, and the fact that I can walk down Main Street and see and interact with people I know.” Sanford has always enjoyed rural life and the landscape of rural places, and enjoys spending her free time gardening and biking.

“I’ve been active in environmental issues for most of my life, and as time has gone by, I’ve gotten more interested in cultural issues,” says Sanford, noting the need for economic development in rural areas. “I call myself a ‘rural conservationist’ now ... rural [economic] development and environmental efforts really have to be synchronized in order to keep a place rural and not suburbanized or urbanized.” Sanford believes in preserving place, and all the elements that go into making up the certain character and quality that is unique to a place. To do so, conservation and development need to go hand in hand.

Sanford sees the Woodlands Partnership as “a singular opportunity for us to work, over time, to preserve the rural values that we have, and to not only protect the environmental resources of the region (particularly the forests), but the cultural resources.” Sanford says, “I’m a believer that agriculture is part of what we need to preserve, and we need to help our farm communities by allowing for the growth of the economy.” Sanford emphasizes the key importance of finding ways to involve the public (“just plain old people”) in the Woodlands Partnership as much as possible, so that people can trust that the Partnership is working for them. She says, “Rural conservation and [economic] development is the key to helping people—not townships, not the state or federal government—but people, to take action on behalf of this place. The more we can talk with farmers and main street businesses, the better off we’ll be.”

Now retired, Whit has worked as the director of a folklife center in the Catskills and for Opus 40, an outdoor sculpture park in the Catskills, served on the board of the Catskills Center for Conservation and Development, was a founding member of the Catskills Forest Association, served as the co-director of the Connecticut River Watershed Council, worked as a planner for the Franklin Regional Council of Governments, and served on the board of the Greater Shelburne Falls Area Business Association.

Potential Economic Development Projects for the Region:

A List Compiled by the Woodlands Partnership Natural Resource-Based Economic Development Standing Committee

After meeting five times over the course of 2021, the Natural Resource-Based Economic Development Committee, chaired in 2021 by Board member Andrew Kawczak of the Hoosic River Watershed Association, voted to include the following potential activities on a list of job-creating activities or projects that could be pursued by the Woodlands Partnership in the coming years.

Potential Projects and Programs for Further Study

NOTE: All of these ideas *would require additional evaluation and assessment* for: usefulness, market forces and prices, transportation, energy, and manufacturing costs, environmental and safety issues, sustainability, employment value, funding, and finally, Woodlands Partnership and community acceptance.

PROJECTS RELATED TO SUSTAINABLE FORESTRY AND WOOD PRODUCTS

- Supporting existing sawmills and forest products businesses in the region
- Protecting and promoting rural jobs among foresters, loggers, and sawmill operators
- Creating or piloting a forest viability program that would include business advising and succession planning for woodland owners⁶⁷

67. Vermont Farm & Forest Viability Program: <https://www.vhcb.org/viability>

68. Note: Much of the current fiber for disposable paper is now coming from boreal forest that are hundreds of years old and their harvest is releas-

PROJECTS RELATED TO WOOD RESIDUE

- Fuel, e.g., direct heat in wood processing facilities
- Wood mulch production
- Animal bedding production
- Oriented Strand Board (OSB) (low quality plywood) raw stock and production
- Raw stock and production for engineered laminated beams
- Small wood items (e.g., dowels, stakes)
- Disposable wood items (e.g., matches, toothpicks, chopsticks)
- Raw material for fiber for disposable paper products (e.g., paper towels, tissues, toilet paper, paper bags, egg cartons, disposable diapers)⁶⁸
- Some combination of the above to utilize all parts of wood residue

PROJECTS RELATED TO TOURISM AND RECREATION

- Demonstration forests with educational outreach
- Glamping (i.e., glamour camping)
- Full-service RV/trailer camping (sewer, electricity, water hookups available)
- Mountain biking events (with appropriately constructed and maintained trails)

ing large amounts of carbon into the atmosphere, especially from soils. Committee Chair: Personal Communication with William Moomaw, Professor Emeritus of International Environmental Policy at the Fletcher School, Tufts University.



Cranston's Tree Farm, Ashfield. Photo: Emily Johnson.

Summary and Key Findings

- Forests play an important role in the region's economy and have done so for centuries. A focus on rural economic development could benefit the region's communities and forestry industry, and support the sustainable management of forests.
- Response to public outreach shows strong support for pursuing natural resource-based economic development consistent with the Partnership region's rural character, which could serve as a model for other rural regions experiencing similar issues.
- Over the last 10–15 years, jobs within the wood product and paper manufacturing industries declined in the state and the Partnership region. At the same time, Massachusetts imports 98% of its wood products from out of state. An opportunity exists to increase the amount of wood that is sustainably harvested, processed, and used within the state and region, resulting in business and job growth, reduced transportation costs, reduced carbon footprint and environmental impacts, and improved forestry.
- The Partnership region has a higher concentration of employment in forest product jobs than the state, representing an opportunity to build upon the industry in the region. Funding and technical assistance could provide support for the forest products industry, could help develop more local markets for low-grade wood and other wood products, and could assist with the marketing efforts of wood product businesses.
- Forests provide a wide range of ecosystem services that have tremendous economic value. Support and technical assistance in accessing or developing ecosystem services markets, such as carbon markets, could provide job growth, increase income to landowners, provide an incentive to sustainably manage forests, and contribute to forest products businesses.
- Increasing forest-based tourism could result in an influx of dollars into the local economy, support for recreation and tourism businesses, an increase in local tax revenues, and improved recreational amenities for residents. There is a need for better marketing of the region and improved tourism infrastructure.

SECTION FIVE

Addressing Municipal Financial Stability: Impacts to Local Services and Taxes

ONE OF THE GOALS of the Woodlands Partnership is to support the financial health and sustainability of communities in the Partnership region. As many municipalities in the region struggle to balance budgets, how can this initiative benefit the Partnership towns? This section analyzes the potential impacts on and benefits to municipalities, specifically addressing municipal services, tax revenue impacts, and overall municipal finance.

Buildings in downtown North Adams.
Photo: Sophie Argetsinger.



Covered road bridge, entering Leyden. Photo: Lisa Hayden

Municipal Services Impacts: Public Safety and Roads

Several potential outcomes of the Partnership’s anticipated federally designated funding for the Partnership region are the establishment of demonstration forests and a forest information and technical resource center (See more about the evolving vision for a Woodlands Partnership Forest Center in Section 7). Additionally, some private landowners choosing to place a Conservation Restriction (CR) on their land may allow for public access to their property. These conservation and forestry-related initiatives could increase the number of visitors to the region, along with potential efforts to market the region and improve access to existing outdoor recreational sites including State Forests and Parks.

As discussed in Section 4: Forests as an Economic Driver, tourism contributes to the economy by bringing in outside dollars to the region. In 2018, tourism generated \$16 million in local tax

receipts within Berkshire and Franklin Counties and supported 4,400 jobs. Tourism also helps support local businesses, which in turn pay taxes to municipalities. More coordinated marketing of the region has been identified as a need, which could help attract more visitors and keep them in the region longer. Some towns in the Partnership region do not have many existing businesses, however, or lack the water and sewer infrastructure needed to support an increase in economic activity. For these towns, an increase in visitors to outdoor recreational areas will not result in an increase in tax revenues but may require additional town services such as trash pick-up, road maintenance, and emergency response. Infrastructure to support tourism, such as public restrooms, ATMs, parking, signage, and other forms of public information, is also limited in many towns.

An increase in visitors to the Partnership region, particularly

tourists who are engaging in outdoor recreation activities, could also result in an increase in demand for emergency services. Because of the volunteer nature of many of the region’s fire departments and ambulance services, the cost of providing these services would not necessarily increase. However, finding enough volunteers to cover the increase in calls could place a strain on municipalities, many of which are already in need of more volunteers and rescue equipment such as All-Terrain Vehicles. The region also has a specialized rescue team made up of volunteers. Training for members is funded through the Western Region Homeland Security Advisory Council, which allocates funds from the U.S. Department of Homeland Security.

Forest fires started by campfires and other human activities could also increase. In 2020, there were a total of 134 tree, brush, or grass fires reported in Berkshire and Franklin Counties.¹ According to the Massachusetts Department of Conservation and Recreation’s Bureau of Forest Fire Control, roughly 9 out of 10 forest fires in the region are started by human activities. The Bureau provides aid and assistance to municipalities with forest fire prevention, detection, and suppression on state and private lands. During the 2014 public outreach for the original Partnership Plan, the need for supplies, such as ATVs to assist in search and rescue and fire equipment for back-country fires, and training for volunteers was identified. The Bureau administers several U.S. Forest Service programs that provide funding, equipment, and training to town fire departments for forest fire suppression. DCR Bureau of Forest Fire Control staff identified an existing need for more funding and staff support for providing training to town

1. Massachusetts Fire Incident Reporting System. County Profiles. 2020 Fire Data Analysis.



Fire training structure, Volunteer Fire Station, Clarksburg. Photo: Sophie Argetsinger



Cows on a farm in Heath. Photo: Sophie Argetsinger

volunteers, which would only increase if more volunteers were needed in the region.

An increase in traffic on the region's roads may result in the need for more policing. The roads along the Deerfield River in Charlemont, Florida, and Monroe provide a current example. Over the past decade, traffic along Zoar Road and River Road in these towns has increased steadily as the Deerfield River has become a popular destination for rafting, kayaking, and tubing. While several outfitter companies located off of Route 2 in Charlemont utilize their own vans and buses to shuttle their patrons, many more people come to the region on their own to access the river at various points. Winding, narrow roads that typically carry a few hundred cars a day suddenly carry between

1,000–2,000 cars a day on weekends during the summer months. Speeding can be a problem, and parking areas become overcrowded, resulting in cars parked alongside the road. Litter, trespassing on private property to gain access to the river, lack of toiletting facilities, and unsafe river use are also major issues along the river.

In 2013, the Charlemont Police Department raised funds for a river patrol to be stationed at the Zoar Picnic Area on Zoar Road. Brookfield Renewable Energy LP matched the town funds to help support the patrol. The town of Monroe has also identified the need for a police presence on weekends in the summer to address the influx of visitors, and at a 2022 Select Board meeting with the Partnership discussed the possible need for speed bumps in strategic locations.

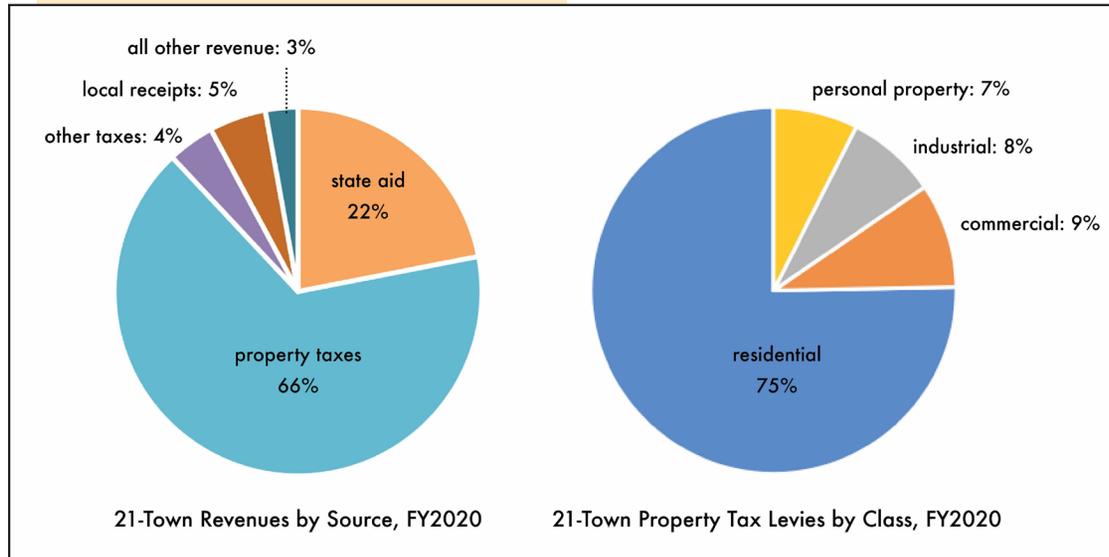
Additional traffic on the region's rural roadways may also lead to a need for increased road maintenance and infrastructure projects to accommodate larger amounts of traffic. Many towns in the region already struggle to maintain roads within their budgets. Spending on public works is the second largest budget expenditure for most towns, after education.

Tax Revenue Impacts

Property taxes make up a significant percentage of town revenue in the Partnership region; in fiscal year (FY) 2020, 66% of general fund² revenue came from property taxes (see Figure 5.1). Several communities skew this figure: Clarksburg and North Adams both relied on property taxes for only about 30–40% of revenue

². The general fund is used to account for most financial resources and activities governed by the normal town meeting or city council appropriation process.

Figure 5.1: Municipal Tax Revenue



Source: MA Department of Revenue, Division of Local Services. Data Analytics and Resources Bureau, General Fund Revenue and Expenditure Reports and Tax Levy By Class Reports (Schedule A), 2020.

in FY 2020, while the share of State Aid was significantly higher in these communities, as well as in New Ashford and Savoy. Most of the 21 towns relied on property tax revenues for 60% or more of their total revenue, with State Aid generally accounting for less than 20% of revenue (town-by-town information can be found in Appendix A).

Given the rural nature of the region, most of the 21 towns rely heavily upon residential property taxes compared to commercial, industrial, and personal property taxes. In FY 2020, 75% of prop-

3. The Hoosac Wind Power Project in Florida and Monroe is the largest wind farm in Massachusetts, with 19 wind turbines that provide enough electricity to power 10,000 homes annually. Iberdrola Renewables, Hoosac Wind Power Project fact sheet. <http://iberdrolarenewables.us/pdf/hoosac-fact-sheet.pdf>

erty tax revenue in the Partnership region was from residential taxes (see Figure 5.1). There are several communities that receive the majority of property tax revenue from commercial and /or industrial uses, affecting the average for the 21 towns. These communities include Rowe, Monroe, and Florida, which receive tax revenue from the utility companies that operate dams and a pumped storage facility along the Deerfield River to generate electricity; Florida and Monroe also receive tax revenue from wind energy farms located in these communities.³ These communities received 75% or more of property tax revenue from these sources. In contrast, 17 towns received 75% or more of property tax revenue from residential land uses, with

a total of five towns relying on residential taxes for 90% or more of property tax revenue.

Many towns expressed concern during early public outreach for the Woodlands Partnership about the potential loss of property tax revenue from placing land under Conservation Restrictions (CR). Because a CR permanently removes the development rights from the land, the land is no longer valued for its potential for residential development. A 2015 analysis of assessed values within 13 of the 21 towns⁴ in the region shows that, on average, land with a CR

4. The 13 towns included are Ashfield, Buckland, Charlemont, Colrain, Conway, Hawley, Heath, Leyden, Monroe, North Adams, Rowe, Shelburne, and Windsor. The remaining seven towns had insufficient data to include in the analysis.

SECTION 5: MUNICIPAL FINANCIAL STABILITY

(not enrolled in Chapter 61) is valued at roughly 32% of the value for all land in a town (see Table 5.1). Land enrolled in the Chapter 61 program, which assesses land at its current use—either forestry, agriculture, or open space and recreation—is valued at roughly 3% of the Per Acre Assessed Value of all land in a town, on average.

If land *not* currently enrolled in the Chapter 61 program were to be protected with a CR, then a town would likely experience a loss in property tax revenue.⁵ However, the CR developed for the Woodlands Partnership in 2017 (see Appendix C) is focused on encouraging active forest management. It is assumed, therefore, that many of the property owners who may be interested in pursuing a CR through the Partnership would already be enrolled in the Chapter 61 program for active forest management,⁶ and in those cases, the town would not see a loss in tax revenue when the land is placed under a CR.

Unlike a Conservation Restriction, the Chapter 61 program does not provide permanent protection for the land, which can be converted to another use if a town chooses not to exercise its right of first refusal and if back taxes are paid. If forested land is transferred from Ch. 61 into a CR, there would be no further local tax impact, and these woodlands may be low-hanging fruit in promoting conservation, since property owners would already be savvy about both forest management plans and tax benefits.

An increase in forestry and wood-product businesses in the region could translate to more commercial, industrial, or personal

5. Mount Grace Land Conservation Trust has a policy of paying property taxes on all land owned by the organization, even though it is exempt from paying property taxes as a non-profit. Although an added expense for a small organization with limited budget, such policies, if viable to implement, may improve community relations by demonstrating support for local municipi-

Table 5.1: Analysis of Assessed Values for Land Under Different Levels of Protection in 13 of the 21 Towns within the Region

	TOTAL ACREAGE	TOTAL ASSESSED LAND VALUE	PER ACRE ASSESSED LAND VALUE
ALL LAND*	227,274	\$798,646,256	\$3,514
LAND UNDER A CR	10,391	\$11,630,891	\$1,119
LAND UNDER CH. 61	15,232	\$1,369,460	\$90

* Includes State-owned land.

Source: MassGIS Level-3 parcel data and town assessor data (multiple fiscal years), accessed February 2015.

pal economies. Mt. Grace Land Conservation Trust. 2022. Conserved Lands. <https://www.mountgrace.org/visit/conserved>

property tax revenues for municipalities. Types of businesses that might be supported through an increase in forestry activities include forestry and logging businesses, sawmills, wood and paper product manufacturers, and artisans. Towns with few or no commercial tourism-related businesses may benefit from the increased forestry-related business expansions to benefit their tax base.

6. Ch. 61A is for landowners interested in agriculture or forestry and Ch. 61B for owners pursuing open space/recreation.



Burnett Pond, Savoy Mountain State Forest, Savoy. Photo: Sophie Argetsinger.

Payment in Lieu of Taxes Reimbursement

In FY 2020, an average of 22% of municipal revenue in the Partnership region came from State Aid. Included in this revenue source are payments to towns for state-owned land, known as Payment in Lieu of Taxes, or PILOT. Massachusetts General Law establishes reimbursement payments to towns and cities for tax-exempt state-owned land for the tax revenues lost. A formula based on property value and the latest 3-year state-wide average tax rate is used to determine the payment to each town. The Department of Revenue’s Bureau of Local Assessment estimates the fair market value of state-owned properties every four years, and cities and towns receive their payments annually every November.⁷

Since FY 1996, there has been a shortfall in the appropriation of

PILOT payments, resulting in reimbursements well below 100% statewide. In 2020, over \$45 million was needed to fully fund the program statewide, but only \$30 million was appropriated, resulting in a \$15 million shortfall. In FY 2021, communities in the Partnership region were reimbursed a total of \$990,867, a rate of \$12.35 per acre on eligible state-owned land. These payments fell \$498,433 short of what the region would have received if the state had fully funded PILOT payments to communities (see Table 5.2). PILOT payments per acre vary considerably by town, ranging from \$2.99 per acre in Monroe to \$39.89 per acre in North Adams.

In most towns, PILOT payments for state-owned land make up a small percentage of the State Aid⁸ being received. In FY 2021,

7. Cherry Sheet Manual. Massachusetts Department of Revenue, Division of Local Services. <https://www.mass.gov/doc/cherry-sheet-manual/download>

8. State Aid including Unrestricted General Government Aid, Chapter 70 payments, and PILOT payments.

Table 5.2: FY 2021 PILOT Payments and Shortfalls in the 21 Towns

TOWN	TOTAL STATE-OWNED LAND (ACRES)	STATE-OWNED LAND VALUE	100% PILOT PAYMENT*	ACTUAL PILOT PAYMENTS	ACTUAL PILOT PAYMENTS PER ACRE	PILOT SHORTFALL
Adams	5,564	\$7,399,100	\$108,915	\$72,391	\$13.01	-\$36,524
Ashfield	627	\$1,319,100	\$19,417	\$12,905	\$20.58	-\$6,512
Buckland	135	\$252,100	\$3,711	\$2,468	\$18.28	-\$1,243
Charlemont	2,059	\$1,993,500	\$29,344	\$19,505	\$9.47	-\$9,839
Cheshire	4,896	\$11,630,300	\$171,198	\$113,786	\$23.24	-\$57,412
Clarksburg	3,660	\$1,980,500	\$29,153	\$19,375	\$5.29	-\$9,778
Colrain	3,229	\$4,430,600	\$65,218	\$43,347	\$13.42	-\$21,871
Conway	3,248	\$4,789,500	\$70,501	\$46,860	\$14.43	-\$23,641
Florida	5,492	\$3,756,800	\$55,300	\$37,757	\$6.87	-\$17,543
Hawley	8,487	\$6,044,200	\$88,971	\$59,136	\$6.97	-\$29,835
Heath	915	\$462,500	\$6,808	\$4,526	\$4.95	-\$2,282
Leyden	901	\$3,101,400	\$45,653	\$30,343	\$33.68	-\$15,310
Monroe	2,626	\$801,600	\$11,800	\$7,843	\$2.99	-\$3,957
New Ashford	3,271	\$3,236,600	\$47,643	\$31,666	\$9.68	-\$15,977
North Adams	2,195	\$8,950,100	\$131,745	\$87,566	\$39.89	-\$44,179
Peru	6,693	\$5,061,800	\$74,510	\$49,522	\$7.40	-\$24,988
Rowe	422	\$721,600	\$10,622	\$7,059	\$16.73	-\$3,563
Savoy	12,596	\$8,441,800	\$124,263	\$82,590	\$6.56	-\$41,673
Shelburne	73	\$244,300	\$3,596	\$2,390	\$32.74	-\$1,206
Williamstown	7,010	\$16,714,900	\$246,043	\$163,531	\$23.33	-\$82,512
Windsor	6,141	\$9,843,000	\$144,889	\$96,301	\$15.68	-\$48,588
21 Towns	80,240	\$101,175,300	\$1,489,300	\$990,867		-\$498,433

* Calculated using the statewide average tax rate 2020–2022 of \$14.72 per \$1000.

Sources: Total State-Owned Land acreage provided by Ben Smith, Executive Office of Energy and Environmental Affairs; State Owned Land Valuations (2020); Municipal Cherry Sheets (2020).

only about 3% of State Aid came from PILOT payments for the Partnership region. However, there were nine towns where PILOT payments made up a significant percent (>10%) of State Aid in FY 2021, and PILOT payments made up over 20% of State Aid to the following towns: Hawley (approximately 53% of \$112,387 in Aid); Leyden (approximately 25% of \$120,221 in Aid); and Windsor (approximately 41% of \$236,959 in Aid).⁹

A December 2020 report by State Auditor Suzanne Bump highlighted the current shortcomings of the PILOT program for state-owned lands, due to chronic underfunding and mechanisms that are disadvantageous to more rural portions of the state.¹⁰ Because PILOT reimbursements are calculated partly based on property values, communities with stagnant, decreasing, or slowly increasing property values, largely in the western and central portions of the state, have seen reductions in PILOT payments over time.¹¹ Meanwhile, many communities in the eastern part of the state have seen an increase in PILOT payments as property values have risen, meaning that affluent urban and suburban communities in eastern Massachusetts tend to be the largest recipients of PILOT reimbursements.¹² In order to help reduce these inequalities, the Auditor's report makes several recommendations, including:

- Strengthening the PILOT program as a whole by increas-

9. MA Department of Revenue, Division of Local Services. Final Municipal Cherry Sheet Estimates, FY 2021.

10. Futterman, Noah. 2020. *PILOT Programs Undermined by Lack of Funding and Tax Rulings, Report Finds*. Mass.gov

11. Bump, Suzanne M. 2020. *The Impact of the State-Owned Land PILOT and Solar Taxation Policies on Municipalities, Executive Summary*. Mass.gov

12. Ibid.

ing appropriations to fully fund the program for state-owned lands;

- Adding a “hold harmless” provision to the program that would guarantee communities do not see a reduction in reimbursements over time even if property values decline;
- Adjusting how reimbursements are calculated so that valuation of lands is more equitable among municipalities; and,
- Including additional state-owned properties in the program such as courthouses and correctional facilities.¹³

State Sen. Adam Hinds (D-First District, Berkshire, Franklin, Hampshire, and Hampden counties) and Auditor Bump sponsored a bill in 2021 (S.1875/H. 2831) addressing these issues, which aims to “ensure that communities receive fair compensation from the Commonwealth for untaxed state-owned land within their boundaries.”¹⁴

The Municipal Financial Sustainability Standing Committee of the Woodlands Partnership voted unanimously on Sept. 13, 2021, to recommend to the Partnership Executive Committee that members of the Board meet with elected officials to raise concern about the inequities and inadequacies of the current PILOT formula for rural towns, advocate for reforms, and authorize the Committee

13. Office of the State Auditor. 2020. *Recommendations: State-Owned Land PILOT*. Mass.gov

14. DeLuca, Zack. 2021. *Local, State Officials Talk Disproportionate Impact of PILOT Programs on Western Mass. Communities*. The Greenfield Recorder, 7/23/21. The latest status of Bill S.1880 is listed on 3/29/2021 as ‘Referred to the [Senate] committee on Revenue.’ <https://malegislature.gov/Bills/192/S1875>

SECTION 5: MUNICIPAL FINANCIAL STABILITY

to investigate suggestions for revising the PILOT formula, in order for the program to better support the financial stability of municipalities in the 21-town region. The Executive Committee subsequently accepted this recommendation and raised the issue of PILOT formula reform with several state legislators during meetings in 2021 and 2022.

Sen. Hinds also filed S.1880: “An Act to create a forest carbon incentive program to enhance carbon storage on private timber lands.” This bill would add a Forest Resilience Program into MGL Chapter 61 (Forest Tax Law) which would allow landowners to choose a 20-year plan that focuses on carbon storage and climate resilience and would fund landowners and the town for enrollment. This bill, or similar measures, could focus sustainable forestry on verified climate resilience practices and help bring revenue into the region.¹⁵

15. The latest status of Bill S.1880 is listed on 3/29/2021 as ‘Referred to the [Senate] committee on Revenue.’ <https://malegislature.gov/Bills/192/S1880>



The Federal government also provides Payment in Lieu of Taxes (PILT) payments to local governments to help offset losses in property taxes due to non-taxable Federal lands within their boundaries. These payments can help local governments carry out services such as firefighting and police protection, construction of public schools and roads, and search-and-rescue operations. The payments are made annually for tax-exempt Federal lands administered by the Bureau of Land Management, the National Park Service, the U.S. Fish and Wildlife Service (all agencies of the Interior Department), the U.S. Forest Service (part of the U.S. Department of Agriculture), and for federal water projects and some military installations. Currently North Adams is the only community within the 21-town region that has federally owned land (21 acres).



Hawley Town office (left); Cheshire Town Hall (right). Photos: Lisa Hayden.



Rowe School and Pelham Lake Park, Rowe. Photo: Ed Silva.

Community Finances

The overall financial health of the communities within the Partnership region should be considered when evaluating the potential impacts of increased conservation, tourism, and forestry. Towns in the region have little room to absorb a loss in tax revenue from placing land under a CR, unless new revenue comes from elsewhere. They also have limited capacity to increase spending on policing, road maintenance, or other costs associated with an increase in visitors to the region. A stable source of revenue needs to be identified to help municipalities provide these services.

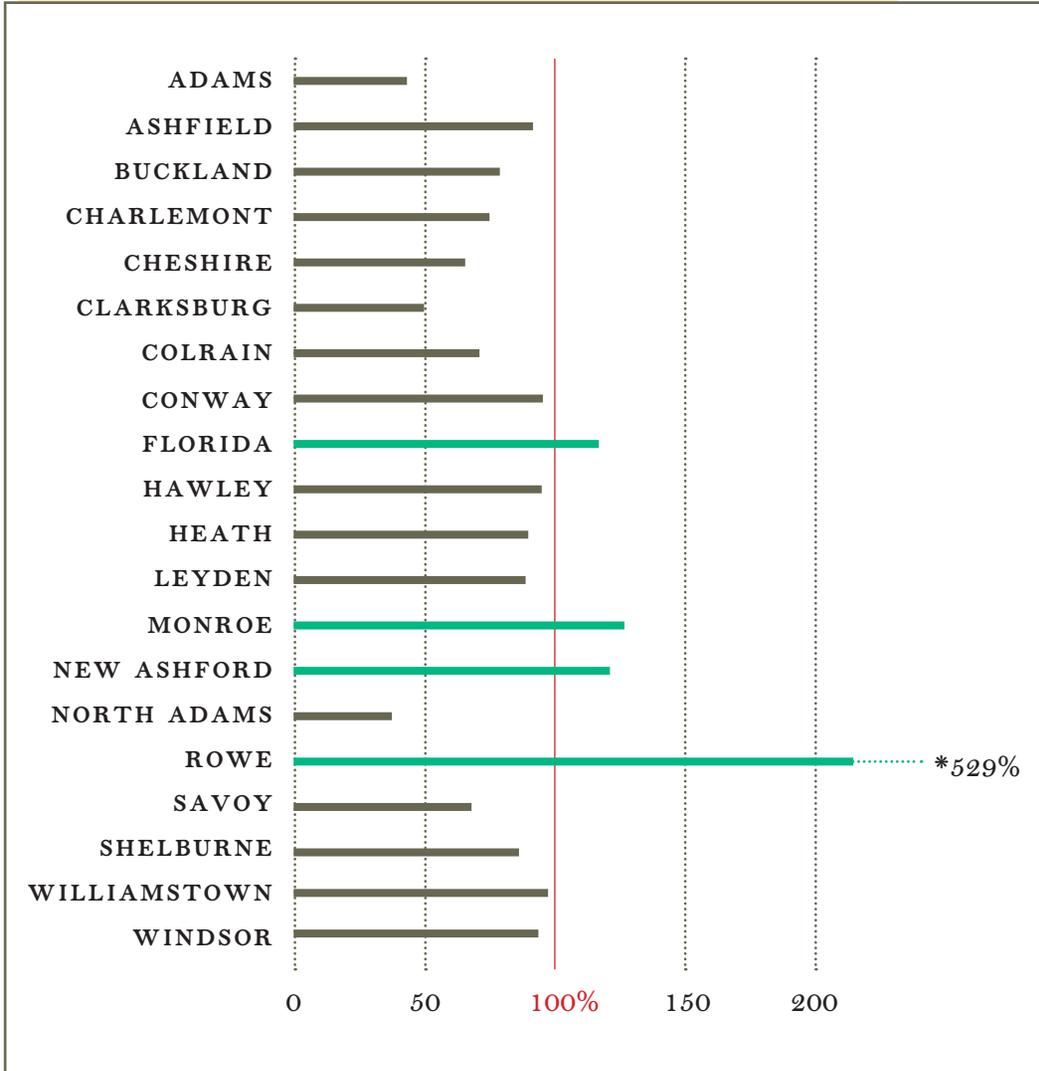
As discussed above, most towns in the region rely heavily upon residential property taxes for revenue and have limited ways to earn revenue from other sources. Figure 5.2 displays each town's per capita equalized value, representing the full and fair cash value of all taxable property in the town divided by the town's population, as a percentage of the State average (or 100%). The figure indicates that the value of taxable property for 16 of the 21 towns in the region is below the state average. Property taxes are the largest source of revenue for most of the towns in the region. Lower property values, combined with lower wages and incomes in the

region (discussed in Section 2), make it difficult for towns to raise property taxes without placing further financial burden on their residents. Furthermore, the amount that taxes can be raised each year is limited by tax levy constraints imposed by Proposition 2½, and increases beyond the yearly limits require an override vote by the town, both at a town meeting and by election ballot.

Currently, towns spend the most on education, followed by public works (see Figure 5.3). On average, in FY 2020 communities spent 49% of their budget on education and 14% on public works. Very little of town budgets were spent on police (5%) and fire (2%), which reflects the small population of most communities and the volunteer nature of fire departments.

Towns can get reimbursed for some public works expenses through the State Chapter 90 program. This program reimburses municipalities for capital improvement projects for road construction, preservation, and improvements that create or extend the life of capital facilities. The funds can be used for maintaining, repairing, improving, or constructing town and county ways and bridges that qualify under the State Aid Highway Guidelines issued by the

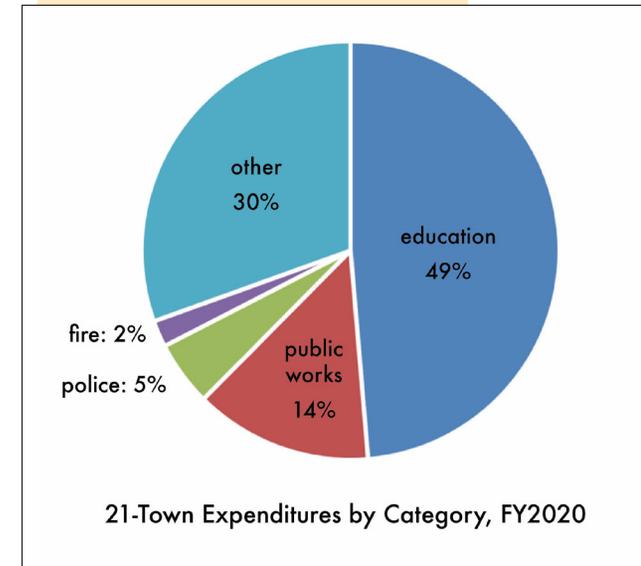
Figure 5.2: 2012 Equalized Per Capita Taxable Property Value as a Percent of the State Average



* Rowe has an Equalized Value per capita that is 529% of the State average due to the presence of a pumped storage facility.

Source: Massachusetts Department of Revenue, Division of Local Services Municipal Databank.

Figure 5.3: Town Expenditures



Source: MA Department of Revenue, Division of Local Services. Data Analytics and Resources Bureau, General Fund Revenue and Expenditure Reports (Schedule A), 2020.

Public Works Commission. Items eligible for Chapter 90 funding include roadways, sidewalks, right-of-way acquisition, shoulders, landscaping and tree planting, roadside drainage, street lighting, and traffic control devices.

Each municipality in Massachusetts is granted an annual allocation of Chapter 90 reimbursement funding based on roadway miles (city- or town-accepted), population, and employment. In FY 2021, Chapter 90 reimbursement allocations ranged from \$43,120 in New Ashford, to \$435,324 in North Adams, with an average allocation of \$203,815 per town (see Table 5.3).¹⁶

American Rescue Plan Act (ARPA) payments

The American Rescue Plan Act (ARPA) was a \$1.9 trillion economic stimulus bill passed by Congress on March 11, 2021 in response to the COVID-19 pandemic. Included in the bill was a provision for aid to be provided to state, local, and tribal governments to help these entities respond to the economic impacts of the pandemic. \$3.4 billion was provided to municipalities and counties in Massachusetts.¹⁷ The amounts allocated to towns in the Partnership region can be found in Table 5.4.

In Berkshire County, the planned uses for ARPA payments in the parks/recreation category are as follows:¹⁸

- \$200,000 to allow Mass Audubon to repair ecological, trail,

16. Chapter 90 Program. <https://www.mass.gov/chapter-90-program>

17. Mass.gov. 2022. About COVID-19 Federal Funds. <https://www.mass.gov/info-details/about-covid-19-federal-funds>

18. Parnass, Larry. 2021. *Here's what Berkshire County is Getting in 'Ear-marks' from the Legislature's \$4 billion ARPA Plan.* The Berkshire Eagle, Dec. 3, 2021. https://www.berkshireeagle.com/news/local/what-berkshire-county-getting-covid-relief-money-state/article_ff1fc002-546d-11ec-b48f-8322c5e058ab.html

Table 5.3: FY2021 Chapter 90 Apportionments

TOWN	FY 2021 CH. 90 APPORTIONMENT	FY 2021 PUBLIC WORKS EXPENDITURES*
Adams	\$287,324	\$2,538,682
Ashfield	\$294,555	\$1,850,100
Buckland	\$184,999	\$1,439,929
Charlemont	\$179,999	\$695,732
Cheshire	\$200,252	\$878,203
Clarksburg	\$74,542	\$334,880
Colrain	\$318,708	\$821,674
Conway	\$264,761	\$2,201,186
Florida	\$162,146	\$607,026
Hawley	\$175,120	\$840,626
Heath	\$208,934	\$1,262,442
Leyden	\$142,604	\$1,592,643
Monroe	\$65,278	\$288,714
New Ashford	\$43,120	\$125,016
North Adams	\$435,324	\$3,943,812
Peru	\$144,138	\$479,269
Rowe	\$142,143	\$774,020
Savoy	\$197,375	\$591,832
Shelburne	\$208,361	\$886,283
Williamstown	\$300,276	\$2,446,161
Windsor	\$250,163	\$971,117
21-Town Total	\$4,280,122	\$25,569,347

*Includes general fund public works expenditures and capital projects.

Source: MassDOT Chapter 90 Program; MA Department of Revenue, Division of Local Services. Data Analytics and Resources Bureau, General Fund Revenue and Expenditure Reports and Capital Fund Reports (Schedule A), 2021.

SECTION 5: MUNICIPAL FINANCIAL STABILITY

and forest damage caused by extreme weather at the organization’s Pleasant Valley property in Lenox.

- \$200,000 to the Berkshire Regional Planning Commission and 1Berkshire to establish an outdoor recreation website for Berkshire County and adjoining regions.
- \$50,000 for facility upgrades to Clarksburg State Park.
- \$35,000 for facility upgrades at Natural Bridge State Park.
- \$35,000 for facility upgrades at Savoy Mountain State Forest.

Federal Infrastructure Bill

The \$1.2 trillion Bipartisan Infrastructure Law (BIL) was signed into law by President Biden on November 15, 2021.¹⁹ Included in the bill were funds targeting environmental issues and climate change, including investment in public transit, a network of electric vehicle chargers, clean energy transmission, resiliency in the face of droughts, floods, and wildfires, and legacy pollution cleanup.²⁰ Massachusetts was awarded \$9.5 billion in federal infrastructure funds, to be disbursed over 5 years.²¹ This funding will include \$106.5 million for a resiliency program, \$63.5 million for electric vehicle infrastructure, \$9.3 million for a carbon reduction program,²² \$2.5 million in energy efficiency conservation block grants, and \$367.6 million for environmental remediation.²³

19. The White House. *Biden Administration Releases Bipartisan Infrastructure Law Guidebook for State, Local, Tribal and Territorial Governments*. Statements and Releases, Jan. 31, 2022. <https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/31/biden-administration-releases-bipartisan-infrastructure-law-guidebook-for-state-local-tribal-and-territorial-governments/>

20. Ibid.

21. *Baker-Polito Administration Outlines Bipartisan Infrastructure Law Funding for Massachusetts*. Mass.gov, Feb. 3, 2022. <https://www.mass.gov/news/baker-polito-administration-outlines-bipartisan-infrastructure-law-funding-plans-for-massachusetts>

22. Staff Reports. 2022. *Baker Outlines \$9.5B in Investment from Federal Infrastructure Bill*. iBerkshires, Feb. 3, 2022. <https://www.iberkshires.com/story/67160/Baker-Outlines-9.5B-in-Investment-From-Federal-Infrastructure-Bill.html>

23. Mass.gov. 2022. *Baker-Polito Administration Outlines Bipartisan Infrastructure Law Funding for Massachusetts*. Feb. 3, 2022. <https://www.mass.gov/news/baker-polito-administration-outlines-bipartisan-infrastructure-law-funding-plans-for-massachusetts>

Table 5.4: ARPA Payments by Town

TOWN	ARPA ALLOCATION AMOUNT (2021)
Adams	\$838,395
Ashfield	\$179,716
Buckland	\$193,637
Charlemont	\$129,056
Cheshire	\$327,508
Clarksburg	\$171,447
Colrain	\$173,854
Conway	\$196,044
Florida	\$74,838
Hawley	\$34,959
Heath	\$72,745
Leyden	\$74,838
Monroe	\$12,037
New Ashford	\$23,341
North Adams	\$1,332,431
Peru	\$87,294
Rowe	\$40,716
Savoy	\$70,651
Shelburne	\$192,276
Williamstown	\$778,106
Windsor	\$90,643

Source: U.S. Treasury ARPA Allocations, May 25, 2021. https://41g41s33vddd2vc05w415s1e-wpengine.netdna-ssl.com/wp-content/uploads/2021/05/US_Treasury_NEU_Allocation_May_25_2021.xlsx

Many of the energy and environmental infrastructure programs included in the BIL are new, and the MA EOEEA will need further guidance from the federal government before finalizing a list of qualifying programs.²⁴ Regional Transit Authorities in Massachusetts are expected to receive \$591 million for modernization, maintenance, fleet upgrades, and replacement of facilities and vehicles, and funds will also be used to improve the commuter rail, freight rail, and intercity rail systems in Massachusetts, including federal-state partnership grants for the modernization of the Northeast Corridor.²⁵ An \$8 million expansion of the Ashuwilltcook Rail Trail (bike path) is planned between Adams and North Adams,²⁶ and funds for numerous bridge replacement and repair projects have already been allocated (see Table 5.5).²⁷

24. Mass.gov. 2022. *Baker-Polito Administration Outlines Bipartisan Infrastructure Law Funding for Massachusetts*. Feb. 3, 2022. <https://www.mass.gov/news/baker-polito-administration-outlines-bipartisan-infrastructure-law-funding-plans-for-massachusetts>

25. Ibid.

26. Staff Reports. 2022. *Baker Outlines \$9.5B in Investment from Federal Infrastructure Bill*. iBerkshires, Feb. 3, 2022. <https://www.iberkshires.com/story/67160/Baker-Outlines-9.5B-in-Investment-From-Federal-Infrastructure-Bill.html>

27. Mass.gov. 2022. *The \$3 Billion Bridge Program*. <https://www.mass.gov/news/baker-polito-administration-outlines-bipartisan-infrastructure-law-funding-plans-for-massachusetts>

Table 5.5: BIL-Funded Bridge Projects in the 21-Town Region

TOWN	PROJECT	FUNDING
Adams	Quality St. bridge over Hoosic River	\$4,584,860
Charlemont	East Oxbow Rd. bridge over Oxbow Brook	\$3,323,503
Cheshire	Sand Mill Rd. bridge over Dry Brook	\$1,920,760
Colrain	Route 112 bridge over North River	\$428,272
Colrain	Adamsville Rd. bridge over Vincent Brook	\$3,310,826
Conway	North Poland Rd. bridge over Poland Brook	\$3,284,850
Heath	Jacksonville St. bridge over West Branch Brook	\$1,637,130
North Adams	Greylock Bridge (Route 2) over Hoosic River	\$17,769,440
North Adams	Brown St. bridge over Hoosic River	\$945,192
Rowe	Cyrus Stage Rd. bridge over Potter Brook	\$1,729,717
Williamstown	Main St. bridge over Hemlock Brook	\$1,888,123

Source: Mass.gov. 2022 *The \$3 Billion Bridge Program*. <https://www.mass.gov/news/baker-polito-administration-outlines-bipartisan-infrastructure-law-funding-plans-for-massachusetts>



Peru Public Library (left); Windsor Town Hall (right). Photos: Sophie Argetsinger.

Summary and Key Findings

- Growing local businesses, sustaining the region’s workforce, population, and rural way of life, and bringing outside dollars into the region all have the potential to be supported by focusing resources on the protection of the region’s forests, supporting working forests and forest-related businesses, and increasing tourism in the region.
- An increase in visitation and active forest management may require more road maintenance, emergency response capacity, and tourism or business infrastructure. Many towns in the region operate on a tight budget and would benefit from a stable source of revenue to help pay for these municipal services.
- PILOT payments to towns for tax-exempt state-owned land vary from year to year, and do not make up the difference in tax

revenue loss experienced by towns. The Municipal Sustainability Committee and Executive Committee of the Woodlands Partnership have voted to advocate for an updated PILOT formula that more equitably and sufficiently addresses reimbursement to rural communities.

- Increasing land conservation in the region with Conservation Restrictions could result in tax revenue loss for towns if the land is not currently enrolled in the Chapter 61 “current use” program for forestry. The model CR developed by Franklin Land Trust for the Woodlands Partnership, however, focuses on working woodlands, which would appeal to landowners already enrolled in Chapter 61 for active forest management, resulting in no tax revenue loss to towns.

SECTION SIX

An Act of Congress for a Special Designation

THE CENTERPIECE of the Woodlands Partnership vision is attainment of a Special Federal Designation, matched by the Commonwealth of Massachusetts, which would recognize the unique values that come together in the 21 towns of the Northern Berkshires and Hilltowns region. Such a designation, which would require Congressional approval, would need to go beyond the 2019 Shared Stewardship Framework between the State and U.S. Forest Service to provide seed funding for the Partnership Fund so that sustainable financing (through a trust fund) can be operationalized, as envisioned in the state enabling legislation.

This Special Designation would recognize the Partnership region as an important area and create a new model for forest conservation and natural resource-based economic development. The proposed designation would not create a National Forest, nor would it result in the adoption of the Weeks Act by the state, a requirement to create a National Forest. Rather, the objective of the Special Federal Designation is to enable and support a partnership among the people, nonprofits, businesses, and towns with the Commonwealth and the U.S. Forest Service, primarily the State & Private Forestry and Research & Development branches. This Special Federal Designation would recognize the Partnership region as a crucially important forested region—particularly in an era of rapid climate change—and create a new model for forest conservation and natural resource-based economic development.

Throughout the course of the planning process, public input and conversations with stakeholders shaped the elements that a potential Federal Designation would need to include. This framework, intended to guide the drafting of Federal legislation, as well as the key issues and concerns identified for the region, are outlined in this section.

Frost on Mt. Greylock, Adams. Photo: John Phelan.



Wildflower field, Mt. Greylock, Adams. Photo: Joe Nowak.

Key Issues and Concerns

Landowners, municipal leaders, foresters, and others identified key issues and concerns related to a Federal designation including:

- Potential loss of local tax revenues for land in Federal or State ownership
- Potential impact on municipal services such as road maintenance or provision of emergency response services for visitors
- Lack of reliable Payment in Lieu of Taxes (PILOT) to support town services for existing publicly owned lands
- Need for the process to be locally driven and supported
- Lack of information about actual incentives or support that could be provided to the towns, private landowners, and forest-based businesses by the U.S. Forest Service and/or the State
- Need to understand how sustainable the Woodlands Partnership will be, given the budgetary challenges faced by the Federal government
- Need for the State to better manage and maintain their own forests and recreational facilities
- Need for reduced regulations to support sustainable forestry
- Need for flexible Conservation Restrictions that allow landowners to decide whether a parcel should be managed to provide forest products (lumber, firewood, etc.), habitat protection, and /or recreational opportunities, and level of public access
- Need for towns to be able to review and comment on any legislation proposed for the Federal Designation to determine if they want to participate



Black bear, Rowe. Photo: Sophie Argetsinger.

Framework

In response to the Key Issues and Concerns, the following elements form the basis of the Framework that would guide the drafting of Federal legislation to create a new model for forest conservation and natural resource-based economic development through a Special Federal Designation for the Partnership region.

1. All 21 towns would be eligible for participation but would need to “opt in” in order to receive incentives and to allow private landowners to access funding for Conservation Restrictions (CRs).
2. At the outset, it is envisioned that the vast majority of CRs will be applied to lands currently enrolled in the MA Chapter 61 tax abatement program. Since these lands at present pay a reduced tax assessment based on their use as managed forest lands, the Woodlands Partnership purchase of CRs will have minimal, if any, impacts on municipal tax bases.
3. State and Federal incentives or payments for forest CRs with willing sellers only—no eminent domain and no Federal right of first refusal.
4. Flexible CRs based on a model CR (see Appendix C) that allow for forest management, habitat protection, passive recreation, agricultural activities, or a combination of those activities that are held by the State, town, and /or a local land trust.
5. Provision of tax incentives or technical assistance programs for sustainable forestry practices to private landowners and towns, including preparation of forest stewardship plans.
6. Promotion of forestry, forestry-related manufacturing, and /or research for new technologies related to forest-based products by providing State and Federal incentives (e.g., tax credits, grants, etc.).
7. Provision of incentives/funding by the State and /or the U.S. Forest Service to improve tourism infrastructure (recreational trails, access roads, campground facilities),

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collaborative marketing of the region, tourism business training, and other initiatives.

8. Development of a Visitor/Education/Technical Resource Center (Forest Center) to provide: (1) public education about forests, forest management, and the ecological services that forests provide; (2) technical assistance to private landowners to increase sustainable forest management practices; (3) research and development for wood products and to address climate change and invasive species; (4) a showcase for local wood products; and (5) for tourism services.

9. The Forest Center building could be staffed and maintained by a partnership of the U.S. Forest Service and / or the State under a long-term lease. The building and associated land could be owned by the State, a town, or a private individual.

10. Land for a Demonstration Forest could be leased from the State, a town, or private landowners.

11. Creation of a notification process to municipalities for new CRs on forested land funded by the U.S. Forest Service and / or State agencies and an approval process for towns when the amount of permanently protected open space exceeds 40% or more of the land area of the town.

12. Establishment of “Municipal Cooperative Agreements” that provide annual grants to participating towns to support municipal services or operations such as road maintenance or emergency response related to tourism.



Sunrise, Mt. Greylock, Adams. Photo: Joe Nowak.

A New Model

The proposed model focuses on privately owned forests. One element of the model is to conserve important forest areas using Conservation Restrictions (CRs or easements). Willing landowners could sell their development rights under a CR, which permanently removes the right to develop a property but preserves the right

to conduct forestry operations, farming, logging, trail creation, or the protection or creation of wildlife habitat. Landowners of qualified projects may be paid an amount close to or at the appraised value of the development potential of their land. This would keep land in private ownership and on the tax rolls while providing the

landowner with funding to invest as they see fit. Land with a CR can be sold or passed on to another private owner. For towns, tax revenues collected on land with a CR would, in most cases, be similar to revenues collected from land enrolled in Chapter 61, 61A, or 61B. Forest management practices for land with a CR in many cases would be the same as those called for under Chapter 61. Designation under this model would not provide for eminent domain powers by the U.S. Forest Service or result in additional regulations. CRs would be held by the State, a town, and /or a qualified local or regional land trust.

There are several other elements of the proposed model in addition to conservation of forests. The Partnership could serve as a focal point to increase technical assistance to private landowners through the U.S. Forest Service, State & Private Forestry, as well as Research & Development branches as well as the state. This technical assistance would be focused on increasing sustainable forestry management practices and would address climate change and invasive species and pests that could threaten forests in the region.



American bittern, Rowe. Photo: Chris Selmi Hyytinen

SECTION SEVEN

What's Next? Funding the Woodlands Partnership for the Future

AFTER A DECADE of collaborative and dedicated work to build the concept of the Woodlands Partnership by and for the people who live, work, and recreate in Northwest Massachusetts, many involved believe the initiative has reached a critical juncture. The most pressing priority for the next decade—or at least the next five years—is to identify and obtain a source of sustainable core funding for operations and staff.



Members of the Woodlands Partnership Board take part in a hybrid board meeting in 2022, Charlemont. Photo: Sophie Argetsinger.

Budget and Staff Capacity Needs

Without routine annual state or federal funding for operations, the Partnership's Administrative Agent has needed to focus on applying for and administering state and federal U.S. Forest Service (USFS) grants in order to launch fledgling programs. The USFS has been a committed partner in making funding opportunities available, but still requires the normal process of contracting, financial, and performance reporting that applies to competitive grants. Projects also must be tailored to meet existing criteria for various USFS programs. This significant grant project management work for the Agent competes with the need for broader strategic planning with the Board and Committees, creation of programs to meet core mission priorities and support for public outreach, communications, and education.

Thus, the Board Executive Committee and members of the Budget and Finance Committee have identified the highest immediate need is to advocate for:

1. Routine or annual funding to support the hiring of an Executive Director and key support staff with a plan for providing a stable salary and benefits package over a 3–5 year period, in order to attract and hire well qualified candidates to be in place before the Agent contract ends (to occur in June 2025). The Budget and Finance Committee has estimated that about \$125,000 to \$200,000 annually will be required to achieve this goal.

Other priorities include:

2. Obtaining clarity from the Commonwealth of Massachusetts on how to operationalize the Woodlands Partnership Fund and the Investment Trust Fund that were created in the enabling legislation, but with no funding yet allocated for these purposes.
3. Despite institutional barriers in a federal agency seeking

SECTION 7: WHAT'S NEXT?

legislative authority, the eventual goal would be to seek federal Congressional action to authorize the U.S. Forest Service to appoint a voting member of the Partnership Board, in order to fulfill the vision of state, federal, and local jurisdictions fully participating in the Partnership. The USFS currently invites a liaison to attend Board Executive Committee meetings, but it is a non-voting role.

In order for the Partnership to grow, and expedite progress on several Committee priorities at the same time, additional staff resources will also be required. The following additional staff roles and functions have been identified:

- *Communications and public relations coordinator*: Support the Education, Outreach, and Research Committee to create website, blog, or Story map content; engage in social media to promote the Woodlands Partnership and its goals; support educational webinars; and coordinate and host events including forest walks on various topics related to conservation, climate change, and forest stewardship.
- Community relations and outreach to stakeholders:
 - *Municipal circuit rider*: Act as a liaison and sounding board for member town needs and priorities, which could include: seeking broader participation from community

and social service agencies to support initiatives such as acquiring broadband for rural areas; coordinating emergency fire and medical response among towns; addressing job creation and rural poverty issues; and projects yet to be identified.

- The Executive Committee has also identified a goal to enhance outreach to Indigenous Peoples of the Northwest Massachusetts region and to invite their participation in the Partnership. Efforts to begin a dialogue with representatives of various tribal groups has begun and grant funding has been requested to support incorporation of traditional ecological knowledge into programs. This work has also spurred discussions about the proposed change of the Partnership's name.
- *Grant writer*: Grant writing, coordination with potential partners and administration of grants received for Partnership priorities. This role could also include working with the Budget and Finance Committee on a fundraising plan and calendar of grant deadlines to address highest priority programs. Eventually the Partnership may consider developing a Friends or membership program to attract private and foundation donors in addition to government grants.



Volunteers take part in a tree planting event organized by the Partnership in 2022 at South River Meadow, Conway. Photo: Lisa Hayden.

Partnership and Committee Goals and Project Priorities in Development

Following the creation of the Partnership by state law, the action of towns to join, and signing of the state-federal framework for cooperation, over the course of 2021—the first year of work with the Administrative Agent—Board leaders set about organizing volunteer Board members to serve on the Standing Committees, meet regularly, and begin to coordinate priorities.

Recognizing that support for the Executive Committee and five other Standing Committees (named in the enabling law) is a major core function requiring ongoing staff support for public posting, scheduling, minutes, and records, the Agent hired a part-time Assistant under the existing state contract.

A high-priority goal identified by the Education, Outreach, and Research Committee of the Board is the need for a redesigned and updated website for the Woodlands Partnership that will highlight compelling information for the public to learn about the region and the Partnership's mission and programs. An important focus

of the Agent in early 2023 will be completing review of a website redesign for the Woodlands Partnership to be completed in conjunction with a Virtual Forest Center web portal, funded by state and federal grants to help connect woodland owners and municipal leaders to resources to better care for and manage their woodlands now and into the future (see sidebar on page 100 for descriptions of recent grants that have advanced the Partnership's mission).

Signature Project: Envisioning a Forest Center to Celebrate and Enhance the Region's Forests

From the regional deliberations that formed the Woodlands Partnership, one idea emerged as a prominent, though ambitious, goal. Opinions coalesced around the need for a central location to bring together people and resources to support and promote not only the Woodlands Partnership itself, but, more importantly, the forest resource on which all of its goals are centered.

Multi-Year Grants Received by New England Forestry Foundation acting as Administrative Agent on behalf of the Woodlands Partnership

GRANTS RECEIVED IN 2021

\$60,000 USFS Urban and Community Forestry three-year project—“Rivers Run Through It: Restoring Floodplain Forest and Riparian Buffers in Mohawk Trail Woodlands Partnership Town Centers and River Junctions”

- Fund a student team to create a program for towns in the Partnership region to identify and begin implementation of climate-smart floodplain forest restoration sites primarily in downtowns, village centers and other high-impact areas of human use across the Mohawk Trail geography, starting with the Deerfield River watershed and continuing to apply the approach in the Hoosic River watershed.
- Coordinate at least four demonstration sites for tree-planting that represent the rivers’ intersections with the built environment and human alteration of natural systems and the planting of at least 150 climate-adapted trees.

\$60,000 Massachusetts Executive Office of Energy & Environmental Affairs Woodlands Partnership regional grant

- In 2022, the state grant funded a pilot riparian restoration site at South River Meadow in Conway, where approximately 65 trees and shrubs were planted with deer protection; the grant also provided funding for ongoing watering during the summer drought.
- Includes public outreach regarding community stewardship goals and climate resilience planning for a half dozen municipally owned forests.

GRANTS RECEIVED IN 2022

\$100,000 USFS State & Private Forestry three-year grant—“Forest-Centered Stewardship for the Future of Northwest Massachusetts”

This grant provides support for ongoing multi-organization efforts to make Northwest Massachusetts a leader in preparing for climate change including:

- Establishment of climate-informed forestry demonstration sites at Town Forests in member municipalities where education and outreach events can be hosted and climate-smart forestry practices can be piloted: 1 demonstration forest in each county with monitoring and research plots; 6 woods walks, 3 webinars
- Development of a suite of online resources or “Virtual Forest Center” connecting diverse forest owners to stewardship assistance as a precursor to a physical Forest Center
- Forest Center space needs /programmatic planning in 2024
- Reaching out to under-represented Indigenous communities and stakeholders to invite their participation and perspectives



Colin Mettey, a forester, demonstrates to volunteers how to install a deer herbivory protection tube around a newly planted tree sapling. Riparian restoration tree planting event at South River Meadow, Conway, 2022. Photo: Lisa Hayden.

on the Partnership, incorporate traditional ecological knowledge into programs and focus on diversity, equity, inclusion and justice issues by the Board.

\$100,000 State Municipal Vulnerability Preparedness 2-year grant to Town of Rowe and multiple partners, including the following activities:

- Rowe climate-informed open space / recreation plan
- Planning, design, and launch of Virtual Forest Center (branded with Woodlands Partnership website update), which will include an easy entry point for landowners to take the next step in learning about their options and town resources for climate-informed stewardship
- Funding for the Ohketeau Center of Ashfield to implement a Community Liaison Model to recruit scholars, Indigenous ecologists, foresters, culture bearers, and Tribal historians to assist in implementing plans, focus groups, and workshops in consultation with grant partners including the Woodlands Partnership.

In other current funding efforts underway in 2022, the Agent has submitted a *\$1.1 million Congressionally Directed Spending (CDS) request for the Partnership*, of which a portion is being considered, which could include some combination of the following priorities:

- \$540,000 for Implementing Climate Forestry Practices on Private Family Woodlands and Town Forests: Practices to promote climate resilience and store more carbon in the forest could be applied on privately owned and municipal forests in which a climate-informed stewardship plan has been prepared by a licensed, trained forester working with owners to accomplish their ownership goals.
- \$250,000 for a Woodlands Partnership Next Generation Climate Forestry Crew: Internship / workforce development program to recruit job candidates from underserved and rural communities and provide training in climate-smart stewardship skills.
- \$220,000 Conservation Due Diligence Grant Fund and Circuit Rider: \$150,000 to towns / local conservation organizations for due diligence (survey, appraisal, title search, closing costs) to complete forest conservation restriction projects via state and federal funds; \$70,000 for Conservation Circuit Rider to work on projects across town borders.
- \$100,000 for Forest Climate Fellowship: 1-year U.S. Forest Service Fellowship (salary/living stipend for PhD candidate or post-doc) based in the Partnership region to coordinate with U.S. Forest Service, State and Private Forestry and the Partnership Board to identify demonstration sites for climate resilience forestry and carbon-focused management, including \$15,000 for an educational display or Story Map to explain regional applications of climate resilience research and identify projects for the Woodlands Partnership Next Generation Climate Forestry Crew.

SECTION 7: WHAT’S NEXT?

Thus, the vision to create a Forest Center was born. As it is described in the Partnership enabling legislation:

A multi-purpose center, known as the “Mohawk Trail Forest Center” to provide tourism services, technical assistance to forestry and tourism businesses and forest landowners, technical assistance on implementing sustainable forest management practices, technical assistance with selling carbon credits from private and municipal forests credits, research and development, marketing, public education and space for the Administrative Agent.

Through discussions at community meetings and with the Advisory Committee, the concept of a visitor center for the Partnership region evolved into a center that would not only provide information to visitors about the region, but would also provide educational programming, be a clearinghouse for technical assistance for landowners, and be a showcase for local wood products and site for promoting Local Wood. Table 7.1 denotes some of the functions that the center could serve.

Meanwhile, on the Berkshire County side of the Partnership region, a project has picked up steam to create an Outdoor Educational Center at Greylock Glen, with groundbreaking on a new building that will house a large gathering space, café, and educa-

tion center in 2022. This project received Partnership regional grants from the Executive Office of Energy & Environmental Affairs to create educational kiosks explaining the important role of forests in protecting people—and the need for people to protect and care for forests.

Highlights of the Greylock Glen Visitor / Outdoor Education Center in Adams, Massachusetts include:

Table 7.1: Potential Visitor/Educational/Technical Resource Center (Forest Center)

POTENTIAL FUNCTIONS, PROJECTS, OR RECOMMENDATIONS	PARTNERS*
Provide information to visitors and residents about the outdoor recreation and nature-based activities in the region, as well as local accommodations and businesses.	Berkshire Chamber of Commerce, Franklin County Chamber of Commerce, Mohawk Trail Association, MOTT
Provide technical assistance to landowners about forest management (see also, Technical Assistance / Research and Development).	DCR, USFS S & PF, UMass Extension
Create educational exhibits and materials about the forests of the region and sustainable forestry practices (see also, Economic Development).	DCR, USFS S & PF, FLT, UMass Extension
Develop educational programming for schools about the forests of the region and their benefits, including sustainable forestry practices, ecosystem services and tourism.	DCR, USFS S & PF, Williams College, MCLA
Display local wood products with information about where each product came from and who made it.	DCR, USFS R&D, FCCC, BCC, wood product businesses and artisans
Use local wood and /or mass timber in the construction or renovation of the forest center.	EOEEA, DCR, local landowners and wood product businesses

*For a key to abbreviations used for potential partners, refer to Table 7.5 on page 106.

WE MUST PROTECT THE FOREST

Stewardship

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Overuse & Misuse



This photo of Mount Greylock from the early 1900's shows heavy clear cutting. It also shows one of the effects of overuse. Three major landslides occurred during a single storm in August of 1901 because there were not enough trees to hold the soil in place.

Development

Forests are threatened by development pressure for homes and businesses. But there are ways we can live WITH nature. Green Infrastructure (GI) and Low Impact Development (LID) strategies design communities with connected, healthy forests, smart stormwater management, and higher property values.

Invasive Species

As the climate warms and our winters get shorter, more pests are able to survive and threaten our forests. Emerald Ash Borer and Hemlock Woolly Adelgid are two insects that were not a problem before but they have no natural predators here and are now killing trees across the Northeast. Bittersweet and multiflora rose are examples of plants that are able to thrive in our warmer climate and they are outcompeting native plants for sunlight, space, and resources. Reducing climate change is one tool for controlling some invasive species.



Sustainability

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Appropriate Use



Forests can and should be used appropriately to combat climate change, provide ecosystem services such as clean air and water and summer cooling, and bolster the local economy. Programs such as Climate-Smart Forestry and Foresters for the Birds help foresters to work with landowners toward forest conservation goals while maintaining a natural resource-based economy.

Eco-Tourism

Forests provide excellent opportunities for year-round eco-tourism for visitors from around the world. Spring maple syrup season, summer camping and hiking, fall leaf "peeping", and winter skiing and snowshoeing are some of the activities that draw visitors to our forests.




How You Can Help

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Volunteerism



If you enjoy spending time in the forest, consider volunteering. Helpers are always needed for trail maintenance and clearing, invasive plant removal, and monitoring.

Education

The more people who know about the importance of forests, the more likely these amazing places are to survive.



Co2 Reduction

If we really want to help forests, and all ecosystems on the planet, we'll need to slow climate change by decreasing the amount of greenhouse gases we put in the atmosphere and increasing the amount of greenhouse gases that are taken out.

Transportation- Reduce and phase out the amount of fossil fuels, like gasoline and diesel, that we burn through transportation with alternate fuel vehicles, public transportation, and walking or biking.

Energy- Reduce and phase out the amount of fossil fuels we burn for energy, like natural gas and oil with alternate energy such as solar, wind, and geothermal.

Protecting Land- Conserve and restore land to enhance the ability of forests to store carbon and protect us from the worst impacts of climate change.

Food- Tackle our carbon footprints by supporting sustainable plant-based diets, food production, and reducing food waste.

Advocacy- Use our voices to push critical policies and legislation that address and fight climate change and help communities adapt to its existing impacts.

Talk about it - Discuss, learn, and engage with each other to act on climate change together.

GREYLOCK GLEN
EDUCATION

Educational Kiosk at Greylock Glen Center, funded by an EOEEA/Partnership grant.

- Goal for educational programs, camping, an outdoor amphitheater, and an environmentally friendly lodge with conference facilities
- Site includes 1,063 acres of woodlands, open fields, wetlands,

mountain streams, ponds, and waterfall

- Trails used by hikers, naturalists, skiers, snowshoers, mountain bikers, and snowmobiles

- Programming will include speakers, films, and environmental education

- Field study opportunities for nearby educational institutions including public schools and MCLA

- The Performing Arts Amphitheater will offer concerts, plays, festivals, and other events to appeal to visitors and local residents alike

To complement, and not compete with, the Greylock Glen center, the Partnership's Executive Committee in 2021–22, has begun to focus on a Frank-

lin County site for a Forest Center in the eastern half of the Woodlands Partnership region. The Partnership has been welcomed to give input into programming at the Greylock Glen Center, which has used three Partnership small grants to help develop signage and curriculum for the center.

Board Chair Henry Art, a professor emeritus at Williams

SECTION 7: WHAT’S NEXT?

College, who is aware of the strength of the region’s academic institutions, has developed several focused student research projects to advance Partnership goals. The first of these was a fall 2021 semester study and needs assessment conducted by two Williams College students (Sabrine Brismeur and Abigail Matheny) to bring the Forest Center concept into greater focus. The resulting 94-page report, “Envisioning the MTWP Forest Center,” included results of more than 20 interviews with Board members and local residents and stakeholders and initial exploration of potential sites where a physical Forest Center could be located. As a result of their research, the students recommended “the following uses: a tourism/visitor center, public education center, conservation area, and forestry assistance center.”

The students prioritized locations “directly on Route 2 and along the Deerfield River, since they have the greatest potential for drawing in visitors passing through the area,” and their analysis highlighted possible Center locations for additional evaluation (see Table 7.2).

In the Partnership’s first 2015-era Plan, there were also several specific locations suggested for the center, listed in Table 7.3. It is important to note that these are ideas, and more study is needed to determine the feasibility and appropriateness of using any of these locations.

There was general consensus that the center should be located either on Route 2 or within easy access from Route 2. It could be housed within an existing building or a newly constructed building. There was strong desire to make the center a showcase of local wood, including as part of the construction or renovation of a building for the center. The idea of housing the center within a school, such as the Mohawk Trail Regional School in Buckland, was also

Table 7.2: 2021 Student Project Forest Center Site Suggestions

TOWN	LOCATION
Florida	Whitcomb Summit, off Rt. 2
Charlemont	Hall Tavern Farm
Charlemont	Mohawk Trail State Forest
Charlemont and Hawley	Berkshire East

Table 7.3: 2015 Forest Center Site Suggestions

TOWN	LOCATION
Buckland	Mohawk Trail Regional High School
Charlemont	Charlemont Inn
New Ashford	Former Brodie Mountain Ski Area
Savoy	Former Shady Pines Campground

suggested as a way to better leverage the educational component of the center.

To date, the Partnership Board has not yet voted to formally endorse the concept of the Forest Center, or any specific location, deciding to first prioritize securing long-term funding to sustain the Woodlands Partnership as an entity. However, the Board did vote in June 2022 to authorize the Education, Outreach, and Research Committee and the Natural Resource-Based Economic Development Committee to move forward in focusing needs and next steps for the Forest Center concept.

In the meantime, funding for the Board to conduct a study to further identify space needs and programmatic functions for the proposed Forest Center in the 2024 timeframe has been included

in the latest USFS three-year grant awarded in September 2022. This detailed study may clarify what characteristics need to be present at an ideal site. Funding to develop outreach resources for towns and private woodland owners through a web-based Virtual Forest Center (VFC) will also be launched as part of a two-year state grant.

Should the Partnership Board decide to move forward with a center building, the following steps, as outlined by the Williams College student study, would likely be involved in design and construction of a free-standing Forest Center:

1. Consulting company to conduct a needs assessment
2. Purchase or lease of a property lot*
3. The hiring of a design /architecture and construction team
4. Clearing, leveling, or maintenance of the property area*
5. Purchase of locally sourced construction materials
6. Furnishing and decorative purchases
7. LEED or equivalent accreditation
8. Heating, electricity, water, waste disposal, etc.
9. The hiring of a museum consultant for exhibits
10. Staff or contracted employee salary and wages

**Not applicable if housed in an existing building.*

Demonstration Forest

Another key project envisioned by Partnership leaders has been establishment of a demonstration forest in the region that could serve as both an educational tool and a research laboratory. Visitors, school groups, landowners, and residents could learn about forests and various forestry practices. Partnerships between the schools

in the region, including the UMass Amherst Forestry Program, or other academic and research partners, could result in stimulating research and training opportunities for students interested in careers in the forestry industry. Forestry businesses could benefit from demonstrations on new logging techniques and equipment.

Several themes about the ownership structure of a demonstration forest emerged from the early public outreach for the Woodlands Partnership including:

- The U. S. Forest Service could partner with a private landowner to focus on education, research, and technical assistance for private forest landowners.
- Existing State Forest land could be utilized for a demonstration forest and could serve as a model for improved State Forest management in the region, a need that was repeatedly expressed throughout public meetings.
- Even without establishment of a formal new demonstration forest site, existing conserved forests, whether private or public, could be the site of organized efforts to host woods walks and other educational programs for private family forest owners, forestry professionals and town and state forest managers, focused on climate change resilience, managing for carbon storage and wildlife habitat and overall ecological health. Many outreach and education programs support and encourage peer learning among landowners, such as opportunities for owners to share their stories and experiences in caring for their land, and by hosting events on their own wooded property. The Partnership could support and help coordinate these landowner programs.

In the 2015 Partnership Plan, several specific locations were suggested as possible sites for a demonstration forest, listed in

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Table 7.4. There has also been discussion about whether a Forest Center should be co-located near an existing or potential demonstration forest, or whether a network of several forests participating in demonstration activities could be developed under the Partnership umbrella. As with the Forest Center, these sites require more study as to their feasibility and appropriateness for a demonstration forest.

In recent 2022 developments, USFS funding will support work by Mass Audubon and numerous partners to launch a pilot Forest Climate Resilience Program by creating monitoring plots to be established in town forests that have received climate-informed forest stewardship plans. Thus these sites are expected to enable

Table 7.4: 2015 Demonstration Forest Site Suggestions

TOWN	LOCATION
Adams	Greylock Glen
Charlemont	Mohawk Trail State Forest
Heath	Town-owned conservation land
Williamstown	Partner with Williams College to utilize Hopkins Forest

natural resource professionals, landowners and the public to tour and learn about climate planning and applied science from these sites.



Forester Alex Barrett (right) talks about an emerald ash borer inoculation project at Pelham Lake Park, Rowe, in 2022. The project was funded by a Woodlands Partnership grant. Photo: Lisa Hayden.



Hiker on the Triple-R Brooks Trail, Taconic Trail State Forest, Williamstown. Photo: Henry W. Art.

Recommendations and Potential Future Projects

Throughout the planning process for the Woodlands Partnership, local residents and stakeholders participating at Advisory Committee meetings, Board meetings, and regional public meetings have been asked how a potential special designation could benefit the Northwest Massachusetts region. Specifically, participants were asked to provide suggestions in the following focus areas:

- Economic development projects
- Technical assistance for landowners
- Assistance to municipalities
- Conservation priorities
- Potential locations for a demonstration forest and /or a forest-focused visitor center

On the following pages is a compilation of additional potential projects and recommendations, which emerged from the multi-year planning process, as well as from baseline research conducted to complete this Partnership Plan. It is envisioned that many of these recommendations could be pursued (and in some cases *are* being pursued) whether a Special Federal Designation is adopted or not, but that a more fully realized partnership with the U.S. Forest Service could provide much needed funding and resources to move these initiatives forward. The Board and its Standing Committees, working with member municipalities and other partners, will continue to review and evaluate the feasibility of these projects over the coming decade.

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Table 7.5: Partner Organization Abbreviation Key*

BCC	Berkshire Chamber of Commerce
BNRC	Berkshire Natural Resources Council
BRPC	Berkshire Regional Planning Commission
DCR	Massachusetts Department of Conservation and Recreation
DCS	Division of Conservation Services
EOEEA	Massachusetts Executive Office of Energy and Environmental Affairs
FCCC	Franklin County Chamber of Commerce
FLT	Franklin Land Trust
FRCOG	Franklin Regional Council of Governments
MCLA	Massachusetts College of Liberal Arts
MOTT	Massachusetts Office of Travel and Tourism
MWI	Massachusetts Woodlands Institute
USFS NSF	United States Forest Service National Forest System
USFS R&D	United States Forest Service Research and Development
USFS S&PF	United States Forest Service State and Private Forestry
UMass	University of Massachusetts

**Potential partners are referred to by the abbreviations in this key in the tables of possible future projects on the following pages.*



Basalt boulders at a campsite in Mohawk Trail State Forest, Charlemont. Photo: Sophie Argetsinger.

Economic Development in the Region

POTENTIAL PROJECT OR RECOMMENDATION	POTENTIAL PARTNERS
Forest Products	
Build local markets for wood products, including those made from low-grade wood. Develop a marketing campaign for locally produced wood products, modeled on successful Buy Local food campaigns.	EOEEA, DCR, USFS R&D, UMass, MWI
Provide incentives for new forest products business start-up costs and for upgrades to equipment at existing businesses.	DCR, USFS R&D
Provide technical assistance to forest product businesses including training on low-impact logging techniques and portable sawmills, and marketing and business plan development.	DCR, USFS R&D
Conduct a study of the local wood industry to determine equipment, infrastructure, and marketing needs and strategies to address them, and explore opportunity for wood banks to utilize local wood for home repairs.	DCR, UMass
Conduct education and outreach to landowners and the public about the benefits of forest management and sustainable forestry practices.	DCR, USFS S&PF, FLT, UMass Extension
Tourism	
Provide funding for outdoor recreation tourism infrastructure improvements, including accessible trail development and maintenance, public restrooms, parking, signage, and maps.	EOEEA, DCR, USFS NFS
Work with local and regional partners on collectively marketing the region. Bring together tourism and outdoor recreation businesses to develop travel packages, and provide training and business assistance, potentially through a regional multi-purpose Forest Center.	DCR, MOTT, county CDC's business associations and chambers of commerce
Ecosystem Services	
Provide assistance to interested landowners with accessing carbon markets and other ecosystem markets as applicable. Provide education and training for foresters and landowners on best practices in forest management for carbon sequestration and storage and other ecosystem services.	DCR, USFS S&PF, USFS R&D

Economic Development in Specific Towns

During earlier community meetings, participants were given the opportunity to identify specific economic development projects that would benefit their town. Following are the town-specific projects identified.

TOWN	POTENTIAL PROJECT OR RECOMMENDATION
Adams	Create a campground and visitor center at Greylock Glen. Great progress has been made on this goal with groundbreaking of an Education Center expected in 2022.
Charlemont	Work with the Regional Health Agent and the DEP to obtain water quality records of existing public water supplies in town to develop strategies for increasing the water supply needed in the village center to support new development and redevelopment related to tourism.
	Determine a funding source to pay for police during the rafting season on the Deerfield River.
	Improve and create visitor amenities such as parking, public restrooms, ATMs, and trash collection.
	Create a visitor/education/technical resource center (Forest Center) in one of the vacant downtown buildings. The town of Charlemont was the location for several potential Center sites recommended in the Dec. 2021 Williams College student report.
	A bike path (perhaps next to Rte 2) from Shelburne Falls through Charlemont on to Mohawk Trail State Forest.
Cheshire	Create links from the rail trail to conservation lands and extend the trail north. Establish demonstration forests on several town forests for local landowners, residents, and tourists and establish a virtual forest center ahead of a physical center.
Monroe	Develop a designated paid parking area for Deerfield River users, with restrooms and possibly a food stand. Rafting companies could pay for reserved parking spaces and the facility could provide revenue to the town.
North Adams	Develop a North Adams entrance to the Mt. Greylock State Reservation.
	Complete design and pursue construction of a bike/pedestrian path that will serve as an extension of the Ashuwillticook Rail Trail linking the city with Adams to the south and Williamstown to the west.
Savoy	Re-open and expand the Shady Pines campground.
	Provide assistance for trail development and maintenance.
	Create improved or additional signage to highlight attractions, tourism, and recreation in Savoy such as fishing, hiking, hunting, and snowmobiling.
Williamstown	Provide planning and implementation assistance to connect existing trails.
	Complete design and construction for a bike/pedestrian path in Williamstown that will lead to future extension of the Ashuwillticook Rail Trail in North Adams. <i>To be completed 2022.</i>

Technical Assistance / Research and Development in the Region

POTENTIAL PROJECT OR RECOMMENDATION	POTENTIAL PARTNERS
Conduct research and provide technical assistance to landowners and foresters on invasive species control, climate change impacts and adaptation, and emerging best practices in forest management.	DCR, USFS Northern Institute of Applied Climate Science, Mass Audubon, New England Forestry Foundation, The Nature Conservancy, BRPC, FRCOG, and MWI, licensed and trained consulting foresters
Provide funding and assistance to landowners for writing sustainable forest management plans.	DCR, USFS S&PF, licensed consulting foresters
Conduct research on new wood product technology.	DCR, USFS R&D, UMass
Improve the forest management of the State forests, including road, trail, and facility maintenance.	DCR, USFS S&PF

Municipal Assistance in the Region

POTENTIAL PROJECT OR RECOMMENDATION	POTENTIAL PARTNERS
Provide maintenance assistance for town-owned and State Forest gravel roads.	DCR, USFS S&PF
Provide funding for equipment and training for fire departments and first responders related to tourism.	DCR, USFS S&PF, EOEEA



View from Whitcomb Hill, on Route 2 in Florida. Photo: Sophie Argetsinger.

Land Protection in the Region and in Specific Towns

When asked about land protection priorities in their town or the region as a whole, the following priorities emerged:

- Forest areas surrounding water bodies
- Wildlife corridors and BioMap2 Core Habitat
- Recreation corridors and trails

Town-specific land protection projects and priorities were also identified during the community meetings, shown in the following table.

TOWN	POTENTIAL LAND PROTECTION PROJECTS AND PRIORITIES
Colrain	Green River Valley
	West Branch of the North River / North River Watershed
Heath	Funding and technical assistance to manage Town-owned conservation land— <i>Forest Stewardship Plan complete; climate update due in 2022</i>
Rowe	Re-establish communications with Yankee Rowe regarding the future of the approximately 2,000 acres of forested land surrounding the former nuclear power plant site. This land is not currently protected.
Savoy	Hiking corridors
	The old Shady Pines campground
	Areas surrounding sensitive water bodies
Shelburne	Old growth forests
	Wildlife corridors along the eastern part of town



Bald eagles in Charlemont. Photo: Hunter Gibson.



Mill River in winter. Photo: Sophie Argetsinger.

Conclusion

The Executive Committee of the Woodlands Partnership Board, echoing its earlier Advisory Committee, recommends a Special Federal Designation for the Partnership region of Northwest Massachusetts. This Special Designation would recognize the region as an important area of the Commonwealth and create a new model for forest conservation and natural resource-based economic development. A primary purpose of a State and Special Federal Designation would be to obtain additional financial and technical resources for the Northern Berkshires and Hilltowns region.

The community and regional meetings held for this project identified the need and desire for additional assistance to:

1. Increase natural resource-based economic development;
2. Improve the fiscal stability of municipalities;
3. Support sustainable forestry practices; and
4. Conserve forest land.

This chapter summarizes the many projects and recommendations that the Partnership can pursue with annual stable support from state and federal partners.

APPENDICES



Porcupine in Rowe. Photo: Hunter Gibson.

Appendix A: Town-by-Town Demographic and Economic Data

POPULATION

TOWN	2010	2020	2010-2020 CHANGE	2010-2020 % CHANGE
Adams	8,485	8,166	-319	-3.8
Ashfield	1,737	1,695	-42	-2.4
Buckland	1,902	1,816	-86	-4.5
Charlemont	1,266	1,185	-81	-6.4
Cheshire	3,235	3,258	23	0.7
Clarksburg	1,702	1,657	-45	-2.6
Colrain	1,671	1,606	-65	-3.9
Conway	1,897	1,761	-136	-7.2
Florida	752	694	-58	-7.7
Hawley	337	353	16	4.7
Heath	706	723	17	2.4
Leyden	711	734	23	3.2
Monroe	121	118	-3	-2.5
New Ashford	228	250	22	9.6
North Adams	13,708	12,961	-747	-5.4
Peru	847	814	-33	-3.9
Rowe	393	424	31	7.9
Savoy	692	645	-47	-6.8
Shelburne	1,893	1,884	-9	-0.5
Williamstown	7,754	7,513	-241	-3.1
Windsor	899	831	-68	-7.6
21-town total	50,936	49,088	-1848	-3.6
Massachusetts	6,547,629	7,029,917	482,288	7.4

Source: 2010, 2020 U.S. Decennial Census

POPULATION MEDIAN AGE

TOWN	MEDIAN AGE 2020
Adams	46.3
Ashfield	52.6
Buckland	50.7
Charlemont	50.9
Cheshire	49.9
Clarksburg	48.3
Colrain	50.9
Conway	50.6
Florida	48.5
Hawley	52.6
Heath	51.9
Leyden	51.5
Monroe	49.7
New Ashford	51.9
North Adams	40.7
Peru	48.4
Rowe	49.4
Savoy	49.1
Shelburne	51.3
Williamstown	39.3
Windsor	50.3
21-town range	39.3-52.6
Massachusetts	39.4

Source: 2020 U.S. Decennial Census

POPULATION PROJECTIONS

TOWN	CENSUS 2020	PROJECTION 2030	PROJECTION 2040	2020–2040 CHANGE	2020–2040 % CHANGE
Adams	8,166	8,442	8,375	209	2.6
Ashfield	1,695	1,571	1,417	-278	-16.4
Buckland	1,816	1,739	1,595	-221	-12.2
Charlemont	1,185	937	716	-469	-39.6
Cheshire	3,258	2,688	2,243	-1,015	-31.2
Clarksburg	1,657	1,698	1,714	57	3.4
Colrain	1,606	1,290	1,042	-564	-35.1
Conway	1,761	1,847	1,741	-20	-1.1
Florida	694	879	931	237	34.1
Hawley	353	366	379	26	7.4
Heath	723	508	408	-315	-43.6
Leyden	734	570	511	-223	-30.4
Monroe	118	140	148	30	25.4
New Ashford	250	174	153	-97	-38.8
North Adams	12,961	12,425	12,185	-776	-6.0
Peru	814	913	911	97	11.9
Rowe	424	468	517	93	21.9
Savoy	645	680	678	33	5.1
Shelburne	1,884	1,702	1,560	-324	-17.2
Williamstown	7,513	8,035	8,853	1,340	17.8
Windsor	831	861	791	-40	-4.8
21-town total	49,088	47,913	46,868	-2,220	4.5

Source: UMass Donahue Institute Population Projections. <http://www.ppp.donahue-institute.org/>

INCOME (2020)

TOWN	MEDIAN HOUSEHOLD INCOME	PER CAPITA INCOME	% HOUSEHOLDS BELOW POVERTY LEVEL
Adams	\$54,297	\$33,252	11.12
Ashfield	\$69,064	\$43,520	0.06
Buckland	\$58,642	\$32,646	0.16
Charlemont	\$56,348	\$31,488	7.87
Cheshire	\$67,209	\$35,334	0.10
Clarksburg	\$65,901	\$34,765	0.08
Colrain	\$59,568	\$31,294	0.09
Conway	\$102,431	\$50,912	0.02
Florida	\$63,650	\$31,156	0.11
Hawley	\$60,886	\$33,428	0.09
Heath	\$58,116	\$35,187	0.09
Leyden	\$61,803	\$36,692	0.07
Monroe	\$51,540	\$29,806	0.07
New Ashford	\$88,329	\$44,723	0.11
North Adams	\$41,631	\$25,966	0.20
Peru	\$70,827	\$35,928	0.09
Rowe	\$51,374	\$29,824	0.07
Savoy	\$60,731	\$35,437	0.08
Shelburne	\$63,234	\$39,881	0.08
Williamstown	\$88,088	\$38,480	0.08
Windsor	\$90,664	\$49,455	0.06
Massachusetts	\$86,725	\$78,458	9.4

Source: Esri enriched data layers

EMPLOYMENT AND WAGES

TOWN	AVERAGE MONTHLY EMPLOYMENT	AVERAGE WEEKLY WAGES	TOTAL WAGES
Adams	1,584	\$951	\$78,316,183
Ashfield	193	\$637	\$6,388,405
Buckland	492	\$702	\$17,953,681
Charlemont	395	\$625	\$12,827,526
Cheshire	551	\$960	\$27,497,109
Clarksburg	172	\$871	\$7,785,980
Colrain	251	\$670	\$8,747,966
Conway	197	\$770	\$7,885,547
Florida	61	\$983	\$3,118,408
Hawley	8	\$656	\$272,891
Heath	50	\$379	\$984,149
Leyden	32	\$508	\$845,071
Monroe	12	\$415	\$258,995
New Ashford	11	\$664	\$94,973
North Adams	5,315	\$900	\$248,692,778
Peru	50	\$462	\$1,201,090
Rowe	109	\$1,069	\$1,201,090
Savoy	51	\$562	\$1,491,192
Shelburne	436	\$805	\$18,250,162
Williamstown	3,430	\$1,142	\$203,712,889
Windsor	61	\$614	\$1,946,818
21-town total	13,461	N/A	\$654,332,386
Massachusetts	3,327,190	\$1,609	\$278,456,113,180

Source: Massachusetts Executive Office of Labor and Workforce Development, ES-202 Data

APPENDIX A: DEMOGRAPHIC AND ECONOMIC DATA

ANNUAL LABOR FORCE

TOWN	2015	2016	2017	2018	2019	2020	2015-2020 CHANGE	2015-2020 % CHANGE
Adams	4,245	4,178	4,208	4,191	4,109	3,924	-321	-7.6
Ashfield	1,120	1,122	1,148	1,167	1,169	1,094	-26	-2.3
Buckland	938	938	970	982	972	932	-6	-0.6
Charlemont	631	634	655	663	662	651	20	3.2
Cheshire	1,928	1,932	1,940	1,924	1,910	1,777	-151	-7.8
Clarksburg	868	865	870	880	904	877	9	1.0
Colrain	974	975	997	1,017	1,021	989	15	1.5
Conway	1,182	1,188	1,197	1,226	1,228	1,146	-36	-3.0
Florida	416	415	412	415	420	408	-8	-1.9
Hawley	208	210	216	218	218	206	-2	-1.0
Heath	359	360	371	377	376	361	2	0.6
Leyden	473	471	482	496	493	470	-3	-0.6
Monroe	76	75	78	79	74	71	-5	-6.6
New Ashford	137	146	140	141	138	127	-10	-7.3
North Adams	6,106	6,006	5,995	6,009	6,073	6,026	-80	-1.3
Peru	507	501	501	501	500	463	-44	-8.7
Rowe	154	158	163	167	165	165	11	7.1
Savoy	391	387	393	396	386	361	-30	-7.7
Shelburne	1154	1152	1175	1194	1181	1158	-4	0.3
Williamstown	3223	3283	3345	3440	3292	3182	-41	-1.3
Windsor	495	483	490	491	485	435	-60	-12.1
21-town total	25,585	25,479	25,746	25,968	25,776	24,823	-762	-3%

Source: Massachusetts Executive Office of Labor and Workforce Development, Labor Force and Unemployment Data.

UNEMPLOYMENT RATE (AVERAGE ANNUAL)

TOWN	2010	2015	2020
Adams	9.7	6.4	10.1
Ashfield	5.6	3.1	5.6
Buckland	4.2	3.4	5.4
Charlemont	7.1	4.4	9.4
Cheshire	8.3	5.6	7.8
Clarksburg	8.6	5.4	7.8
Colrain	8.3	5.2	7.2
Conway	5.1	3.4	5.2
Florida	9.0	6.3	6.6
Hawley	5.2	4.3	4.4
Heath	7.8	3.9	5.5
Leyden	5.2	4.0	4.7
Monroe	6.5	5.3	4.2
New Ashford	4.4	4.4	7.1
North Adams	11.0	7.4	10.2
Peru	4.8	4.7	6.5
Rowe	8.5	3.9	10.9
Savoy	10.1	6.6	8.6
Shelburne	8.4	5.4	8.3
Williamstown	7.2	4.7	6.1
Windsor	7.4	4.4	6.9
21-town total	8.5	5.6	8.7
Massachusetts	8.1	4.8	9.4

Source: Massachusetts Executive Office of Labor and Workforce Development, Labor Force and Unemployment Data.

JOBS IN THE FOREST PRODUCTS INDUSTRIES
(MASSACHUSETTS)

YEAR	FORESTRY AND LOGGING	WOOD PRODUCTS MANUFACTURING	PAPER PRODUCTS MANUFACTURING
2001	200	6,436	35,182
2002	198	5,957	32,285
2003	164	5,938	29,959
2004	235	6,846	28,250
2005	262	6,884	26,455
2006	286	6,744	24,623
2007	249	6,134	24,576
2008	222	5,170	22,436
2009	215	4,356	19,476
2010	215	4,416	19,106
2011	224	4,484	18,362
2012	250	4,514	17,611
2013	261	4,728	17,067
2014	344	4,832	16,456
2015	318	5,064	16,022
2016	346	5,173	15,750
2017	352	5,102	15,608
2018	273	5,229	15,410
2019	363	5,371	14,742
2020	351	7,197	20,018

Source: Massachusetts Executive Office of Labor and Workforce Development, ES-202 Data.

Forestry and Logging Industries North American Classification System (NAICS) codes: Forestry and logging (113), Timber tract operations (1131), Forest nursery and gathering forest products (1132), Logging (1133), Support activities for forestry (1153). Wood Products Industries NAICS codes: Wood product manufacturing (321), Sawmills and wood preservation (3211), Plywood and engineered wood product manufacturing (3212), Other wood product manufacturing (3219), Millwork (32191), Wood container and pallet manufacturing (32192), All other wood product manufacturing (32199). Paper Products Industries NAICS codes: Paper manufacturing (322), Pulp, paper, and paperboard mills (3221), Paper mills (32212).

STATE LAND OWNERSHIP IN THE PARTNERSHIP REGION

TOWN	ACRES OWNED
Adams	5,564
Ashfield	627
Buckland	135
Charlemont	2,059
Cheshire	4,896
Clarksburg	3,660
Colrain	3,229
Conway	3,248
Florida	5,492
Hawley	8,487
Heath	915
Leyden	901
Monroe	2,626
New Ashford	3,271
North Adams	2,195
Peru	6,693
Rowe	422
Savoy	12,596
Shelburne	73
Williamstown	7,010
Windsor	6,141
Total	80,240

Source: Acreage provided in 2022 by Ben Smith, Executive Office of Energy and Environmental Affairs.

MUNICIPAL LAND OWNERSHIP IN THE PARTNERSHIP REGION

TOWN	ACRES OWNED
Adams	750
Ashfield	111
Buckland	65
Charlemont	33
Cheshire	670
Clarksburg	33
Colrain	166
Conway	6
Florida	0
Hawley	5
Heath	356
Leyden	14
Monroe	0.19
New Ashford	3
North Adams	1,667
Peru	0
Rowe	1,344
Savoy	0
Shelburne	636
Williamstown	295
Windsor	4
Total	6,156

TOWN	ACRES OWNED
Dalton	1,674
Deerfield	695
Greenfield	432
Hancock	0.12
Longmeadow	0.79
Northampton	537
South Deerfield	16
Total	3,355

Source: MassGIS (Bureau of Geographic Information), Commonwealth of Massachusetts EOTSS. Layer: Protected and Recreational Open Space (2021).

ANNUAL MBF* PLANNED FOR HARVEST, 2006–2014

TOWN	2018	2019	2020	2021	2022	TOTAL
Adams	—	335	—	—	314	649
Ashfield	827	227	747	823	292	2,916
Buckland	1,269	163	160	155	—	1,746
Charlemont	123	28	306	165	100	722
Cheshire	243	—	901	1061	388	2,593
Clarksburg	—	—	337	200	100	637
Colrain	682	307	836	741	509	3,075
Conway	563	262	508	687	293	2,314
Florida	—	160	100	—	389	649
Hawley	482	908	76	216	324	2,005
Heath	245	2,760	299	200	1098	4,602
Leyden	252	28	38	316	522	1,156
Monroe	—	68	—	—	26	94
New Ashford	125	120	—	80	—	325
North Adams	42	260	—	110	203	615
Peru	86	559	19	335	43	1,043
Rowe	—	215	312	—	—	527
Savoy	268	—	50	748	136	1,201
Shelburne	456	250	160	135	100	1,101
Williamstown	143	301	452	606	300	1,802
Windsor	—	250	217	418	147	1,022
21-town total	5,807	7,200	5,519	6,996	5,273	30,796

*Thousand Board Feet.

Source: Massachusetts Department of Conservation and Recreation Cutting Plans.

Appendix B: Municipal and Regional Grants Awarded from the Massachusetts Executive Office of Energy & Environmental Affairs Within the Woodlands Partnership Region

FORESTRY GRANTS

YEAR	GRANTEE	PROJECT	PROJECT DESCRIPTION	GRANT AMOUNT
2022	Clarksburg	Town Land Survey and Forest Plan	Boundary survey for an 80-acre town property and completion of a sustainable forestry stewardship plan.	\$20,000
2022	Massachusetts Forest Trust	Chainsaw Safety Training; Demonstration Forestry	Providing chainsaw and harvesting safety training to woodland owners and first responders; monthly demonstration forestry tours.	\$18,200
2021	New England Forestry Foundation	Riparian Restoration and Climate Forest Plans	Outreach to locate sites, design, and plant riparian trees at demonstration sites across the Partnership region; completion of 2 town forest plans and upgrades to 2 existing town forest plans to new climate forestry plans (matched with \$60,000 in USFS funding).	\$60,000
2021	Rowe	Climate Forest Plan	Climate forest plan implementation on the Town Forest including installation of hemlock wooly adelgid plots to be monitored by an adjacent school, mapping of an old growth site and inoculation of ash trees.	\$20,000
2021	Williamstown	Tree Planting	Planting of climate adapted trees on the Town Common (cost for the trees only - planting is being done with local matching funds).	\$20,000

OUTDOOR RECREATION GRANTS

YEAR	GRANTEE	PROJECT	PROJECT DESCRIPTION	GRANT AMOUNT
2022	Heath	Winter Sports Grooming Equipment	Purchase of snow grooming equipment for cross-country skiing, snow-shoeing, and winter biking on a new trail system developed through 2020 and 2021 grants.	\$15,000
2022	New Ashford	Hiking Trail Expansion	Work with DCR to expand the currently limited hiking access from New Ashford to Mt. Greylock State Reservation.	\$20,000
2022	Peru	Restoration of Pierce Scenic Way	Rehabilitation of drainage along season road to reduce erosion and allow hunting and fishing access on a Wildlife Management Area. Matched by town grant.	\$20,000
2022	Rowe	Trail Improvement and Education Project	Marking trails and adding maps and educational materials to 5 recently installed kiosks in a Town Forest; building a 300-foot boardwalk to improve access.	\$20,000
2022	Rowe and Heath	Regional Trail Location and Design	Planning a new regional trail from downtown Shelburne Falls through a mountainous region north of Route 2 to Mohawk Trail State Forest; documentation of land ownership along most scenic route.	\$40,000
2022	Shelburne	Open Space Plan and Baseball Field Renovations	Preparation of a climate-focused Open Space and Recreation Plan with a focus on climate resilience; renovation of the town ballfield for safe use and use as a winter skating rink.	\$20,000
2021	Charlemont	Signage	Design and installation of educational and regulatory signage related to rafting at various locations.	\$20,000
2021	Hawley	Rescue ATV	Acquisition of an ATV with tracks for 4-season rescue on state and other open space properties in Hawley.	\$17,000
2021	Heath	Regional Trail Connection	Completion of Phase III of a regional trail network including the design and construction of trails connecting the Town Forest with the Cata-mountain State Forest trails.	\$20,000
2021	New Ashford	Beaver Pond Trail	Design and construction of a trail around Beaver Pond on the slopes of Mt Greylock.	\$20,000

APPENDIX B: WOODLANDS PARTNERSHIP GRANTS

OUTDOOR RECREATION GRANTS (CONT.)

YEAR	GRANTEE	PROJECT	PROJECT DESCRIPTION	GRANT AMOUNT
2021	North Adams	Adventure Trail	Completion of design work and property research on a section of North Adam’s Adventure Trail.	\$20,000
2021	Peru	Woods Road Improvements	Completion of gravel road improvements to allow access to MassWildlife property in town.	\$20,000
2020	Ashfield	Ashfield Lake Restoration and Boat Access	Design and construction of access stairs on the shore of the lake where non-motorized boats are launched; restoration of this heavily eroded area with stabilization and plantings.	\$20,000
2020	Heath	Trail Connection between Town and State Forests	Purchase of an 11-acre parcel for conservation and passive recreation; construction of a trail that will connect the 350-acre Town Forest with the 1,300-acre Catamount State Forest.	\$20,000
2020	New Ashford	Creating Trail Access to Mt. Greylock	Creation and improvement of trails and parking along a town road to connect New Ashford to the State Reservation for the first time.	\$20,000
2020	North Adams	Creating and Marketing a City-wide Trail Map	Inventory of trails on all ownerships (state, NGO, private, city); creation and marketing of a comprehensive trail map for the City to draw more tourists for hiking and walking.	\$20,000
2020	Rowe	Town Forest Education Project	Building and installation of 6 kiosks at entrances to the 1,200-acre Town Forest; development and production of a trail map and forest educational materials for posting in the kiosks.	\$20,000
2020	Shelburne	Town Center Trail Connection to the Mohawk-Mohican Trail	Designs for a trail connection along a steep section along the Deerfield River to allow residents and tourists to hike from downtown to the long-distance Mohawk-Mohican Trail. Construction can then occur via federal trail funding.	\$20,000

ECONOMIC DEVELOPMENT GRANTS

YEAR	GRANTEE	PROJECT	PROJECT DESCRIPTION	GRANT AMOUNT
2022	Lever, Inc.	Wood Processing Center	Expansion of the wood processing center at Hall Tavern Farm in Charlemont. Creation of a business plan, marketing plan, website, and long-term management.	\$60,000
2021	Lever, Inc.	Mohawk Trail Entrepreneurial Challenge II	Completion of the Mohawk Trail Entrepreneurial Challenge II to focus on forestry-based and wood-using business start-ups.	\$60,000
2020	Lever, Inc.	Mohawk Trail Entrepreneurial Challenge	Creation of a support network for entrepreneurs within the Partnership region looking to launch or expand innovative businesses; help for the most promising new businesses to launch.	\$65,000

OTHER GRANTS

YEAR	GRANTEE	PROJECT	PROJECT DESCRIPTION	GRANT AMOUNT
2022	Adams	Greylock Glen Outdoor Center Exhibits	Design and execution of exhibits at Greylock Glen focused on the benefits of the region's forests and benefits of building with wood.	\$20,000
2021	Adams	Greylock Glen RFR	Assistance with completion of the RFR process to select food vendors, education vendors, and outdoor recreation vendors for Greylock Glen.	\$20,000
2021	Ashfield	Recycling Center	Construction of a 12 x 12 recycling center building using local wood and the creation of educational materials about the benefits of local wood.	\$16,500
2020	Adams	Forests and Climate Education	Completion of education design for kiosks at trail heads at the Greylock Glen Conservation Area; preliminary designs for the Forest Center that is envisioned for the Mohawk Trail Woodland Partnership.	\$20,000

Appendix C: Model Conservation Restriction

GRANTOR:

GRANTEE:

ADDRESS OF AFFECTED PROPERTY:

FOR TITLE SEE:

FOREST CONSERVATION RESTRICTION

Address: 000 Street/Road, Municipality, MA

I, [*Owner's Legal Name*], with an address of [000 Street/Road, Municipality, Massachusetts, 00000, hereinafter "Grantor" which term in each instance shall mean the Grantor and Grantor's heirs, legal representatives, successors and assigns, for consideration paid of [XXX] Dollars (\$000,000.00), the receipt and sufficiency of which is hereby acknowledged, does hereby grant, with QUITCLAIM COVENANTS, in perpetuity and for conservation purposes as set forth in, dedicated and subject to Article 97 of the Amendments to the Massachusetts Constitution, a Conservation Restriction (hereinafter "CR") as provided in Massachusetts General Laws (hereinafter "G.L.") Chapter 184, Sections 31, 32, 33, to the Franklin Land Trust, Inc., a Massachusetts non-profit corporation having the power to acquire interests in land in accordance with said General Laws, with a principal office in Shelburne, Massachusetts, and a mailing address of P.O. Box 450, Shelburne Falls, Massachusetts 01370, its permitted successors and assigns ("Grantee"), and to the [Municipalities Name, a Massachusetts municipal corporation with an address at Address of Municipality, acting by and through its Conservation Commission established pursuant to Mass. General Laws Chapter 40, Section 8C,], its suc-

cessors and permitted assigns (hereinafter "Grantee"), upon land located in the Town of [XXX], [XXX] County, Massachusetts, containing approximately [XXX] +/- acres, said land being described in Exhibit [X], and shown in Exhibit [Y], excepting the parcel of land shown in Exhibit [Z], prepared by [XXX], recorded in Franklin County Registry of Deeds Book [XXXX] Page [XX] and described in Exhibit [X]. All exhibits attached hereto and incorporated herein by reference (hereinafter "Premises").

This purchase has been funded [add "in part" if only partially funded with USFS funds] through the United States Department of Agriculture, Forest Service.

This Conservation Restriction is defined in and authorized by Sections 31–33 of Chapter 184 and Section 8C of Chapter 40 of the General Laws and otherwise by law. Its purpose is to assure that the Premises will be retained in perpetuity predominately in their natural, scenic and forested condition, and to prevent any use of the Premises that will significantly impair or interfere with the conservation values of the Premises. The Premises contain unusual, unique or outstanding qualities the protection of which in their predominately natural or open condition will be of benefit to the public.

I. PURPOSE

The purpose of this CR is to retain the Premises in perpetuity for the purposes and protections set forth in and subject to Article 97 of the Amendments to the Massachusetts Constitution; to carry out the purposes of the XXX Forestry Program administered by the United States Forest Service; to retain the Premises in its natural, scenic, and open condition; to protect and promote the con-

servation of biological diversity, forests, soils, natural watercourses, ponds, wetlands, water supplies, and wildlife thereon; to protect the natural resources of the Premises; to protect and enhance the natural resource value of abutting and nearby conservation areas; to protect the scenic qualities of the open space resources of the Premises; to allow passive recreational use; to encourage sustainable and sound management of the forest resources, and to encourage the long-term professional stewardship of these resources in a manner consistent with Best Management Practices (BMPs), applicable local, state and federal law, and in conformance with an approved Forest Stewardship Plan.

The Grantor and the Grantee agree that all boundaries, natural features and man-made structures existing on the Premises at the time of the execution of this CR, as well as the specific conservation values of the Premises, shall be documented in a report to be on file in the offices of the Grantee (“Baseline Documentation Report”). This Baseline Documentation report shall consist of documentation that the Grantor and the Grantee collectively agree provides an accurate representation of the condition and the conservation values of the Premises at the time this CR is recorded and which is intended to serve as an objective information baseline for monitoring compliance with the terms of this CR.

This Conservation Restriction is intended to prevent any use of the Premises that will impair or interfere with the conservation values of the Premises. The public benefits resulting from conservation of the Premises include, without limitation:

A. Preserves Working Landscapes. The Premises protect approximately XXX acres of forestland and open land currently being managed for forest wood products and wildlife habitat. This land has been managed responsibly for over XX years, and under a chap-

ter 61 forest management plan for XX years, and contains primarily second growth red oak, white pine, hemlock, sugar maple, red maple, white ash and black cherry.

B. Expansion of Conserved Forest Blocks. The Premises help to protect significant interior forest blocks, linking the XXX acre XXX State Forest with the XXX acre XXX Wildlife Management Area .

C. Protection of Wildlife Habitat. The Premises contain high quality habitats, which includes, Biomap2 Core Habitat, Supporting Natural Landscape, Living Waters Core Habitat, and Critical Supporting Watershed as designated by NHESP. The Premises includes significant wildlife habitat, providing breeding and feeding areas suitable for grouse, turkey, migratory songbirds, moose, deer, bear, coyote, and freshwater fish and invertebrate species.

D. Water Resources. The Premises contains XXX Brook, a major tributary to the Deerfield River. The Premises also lies with the XXX drinking water well zone for the Town of XXX.

E. Recreational Resources. The Premises contains....

F. Carbon Sequestration. The Premises supports the carbon sequestration in forests and wood products which helps to offset sources of carbon dioxide to the atmosphere, from activities such as deforestation, forest fires, and fossil fuel emissions. Sustainable forestry practices can increase the ability of forests to sequester atmospheric carbon while enhancing other ecosystem services, such as improved soil and water quality.

G. Agricultural Resources. The Premises contains XX acres of agricultural fields, including XX acres of prime and state important soils, managed for agricultural products and XXX acres of Prime Forest Soils.

II. PROHIBITED USES

In order to carry out the purposes set forth in Article I above, the Grantor shall refrain from and will not permit any activity that will be inconsistent with the aforesated purposes of this CR. Except as set forth in “RESERVED RIGHTS,” Article III, below, Grantor covenants that the Premises will at all times be held, used and conveyed subject to and not in violation of the following prohibitions on, above and below the Premises:

A. Constructing, placing, or allowing any temporary or permanent building, residential dwelling, tennis court, ball field, bench, well, septic or sewerage disposal system, artificial water impoundment, roadway, asphalt or concrete pavement, landing strip, mobile home, swimming pool, billboard or other advertising display, antenna, paved parking area, utility or telecommunication pole, tower, conduit or line, windmill, wind turbines, satellite dish, above or underground storage tanks, or any other temporary or permanent structure or facility on, below, or above the Premises; and

B. Mining, excavating, dredging, or removing from the Premises of soil, loam, peat, gravel, sand, rock, or other mineral resource or natural deposit, or alteration of any natural contours or features whatsoever, including the excavation of holes, the dislocation or removal of stone walls, cellar holes, granite fence posts, or other features on the landscape; and

C. Archeological surveys or investigations except under an Archeological Field Investigation Permit issued by the State Archeologist authorized pursuant to G.L. Chapter 9, Section 26A and associated regulations; and

D. Placing, filling, storing or dumping on the Premises of soil, snow, sand, rock, mineral or ore, refuse, trash, equipment, mobile

home, trailer, vehicle bodies or parts, rubbish, debris, junk, waste, tillage or other substance or material whatsoever; and

E. Storage, stockpiling, or use of hazardous materials, petroleum products, pesticides and herbicides, manure, fertilizers, or any other materials, except as provided for in the Reserved Rights; and

F. Cutting, removing or otherwise destroying trees, grasses, shrubs or other natural vegetation, except as provided for in the Reserved Rights; and

G. Planting of any exotic invasive, or nuisance species, and the purposeful introduction of species prohibited by federal and state laws and regulations, such as those species included in the "Massachusetts Prohibited Plant Species List" published by the Massachusetts Department of Agricultural Resources, or as identified in a similar, professionally acceptable publication available in the future, except as provided for in the Reserved Rights and as recommended in a Forest Stewardship Plan and/or a USDA Farm Conservation Plan “Conservation Plan”; and

H. Commercial or industrial use of any kind, including but not limited to commercial camping, commercial fishing, hunting or trapping, and other commercial recreational activities, except as provided for in the Reserved Rights; and

I. Tillage of soil and grazing or sheltering of livestock, including horses, except as provided for in the Reserved Rights; and

J. Activities detrimental to drainage, flood control, water conservation, erosion control or soil conservation, or archaeological conservation; and

K. The use, parking, or storage of motorcycles, motorized trail bikes, snowmobiles, and all other motor vehicles, except as nec-

essary by the police, firefighters, or other governmental agents in carrying out their lawful duties and mobility assistance devices for disabled persons, except as provided for in the Reserved Rights; and

L. Conveyance of a part or portion of the Premises, as compared to conveyance of the Premises in its entirety, which is allowed; and

M. Any subdivision of the Premises including but not limited to the subdivision of the Premises under G.L. Chapter 41, Section 81K et seq.; or the use of the Premises or any portion thereof to satisfy zoning requirements, or to calculate permissible building density or lot yield, or to transfer development rights, or for purposes of subdivision or development of the Premises or any other property, whether or not such property is owned by the Grantor or is adjacent to the Premises. This paragraph should not be construed to prohibit agreements to resolve bona fide boundary disputes or ambiguities, with the prior written consent of the Grantee, which consent shall not be unreasonably withheld; and

N. Any other use of the Premises or activity that would materially impair the conservation interests protected by this CR or that is prohibited by federal, state or local law or regulation, or that is inconsistent with the intent that the Premises remain in its natural condition, or that is otherwise inconsistent with the purposes of this CR; and

O. The conversion of forest land to non-forest land, except as provided for in the Reserved Rights.

III. RESERVED RIGHTS

Notwithstanding the provisions of Article II above and subject to and in accordance with applicable laws, regulations and bylaws,

Grantor reserves the following rights, uses and activities on the Premises, but only to the extent that such acts and uses do not materially impair the purposes of this CR:

A. *Improvements.*

1. The maintenance, use, and repair of existing driveways, farm roads, fences, bridges, culverts, gates and stone walls, identified in the Baseline Documentation Report and the approved Forest Stewardship Plan for the Premises; and the construction, relocation, or replacement of like improvements necessary in conducting permitted activities on the Premises, provided such new construction, relocation, or replacement shall be identified in the approved Forest Stewardship Plan or Conservation Plan for the Premises, or approved by Grantee in each instance in accordance with Article IV, below; and

2. Woods Roads and Log Landings: The maintenance, use and repair, or discontinuance of, existing unpaved woods roads identified in the Baseline Documentation Report and the approved Forest Stewardship Plan for the Premises, substantially in their present condition; and the construction, relocation, replacement of new unpaved woods roads and log landings [and, if necessary, the importation of soil, gravel, sand, rock or other mineral resource or natural deposit (hereinafter “road building materials” to construct such roads] for forestry purposes with a travel surface not to exceed twelve (12) feet in width, provided such new unpaved woods roads and log landings are in the approved Forest Stewardship Plan for the Premises and any required Forest Cutting Plan described in Article III.H, below, are consistent with Forestry Best Management Practices (BMPs), [and, if necessary, that

imported road building materials are only used when insufficient resources are available for excavation or extraction on the Premises.]. The approved Forest Stewardship Plan for the Premises must demonstrate (1) that the road improvements are necessary to provide reasonable forest management access to the Premises, (2) that the system of existing woods roads and log landings is not reasonably adequate, [(3) that the natural deposits on the Premises are suitable for extraction or excavation and use as road building materials], and (4) that such road improvements and construction activities do not materially impair the purposes of this CR. Upon discontinuance of any unpaved woods roads, Grantor shall restore the roadbed, bridges, culverts and any disturbed abutting areas to a natural state, with even contour and in such a manner so as not to cause erosion, in order that re-forestation and re-vegetation may occur. Such restoration of woods roads shall be in accordance with Forestry BMPs and the approved Forest Stewardship Plan for the Premises. [Soil, sand, gravel and other materials may be placed on, moved to, and added to the Premises for the purposes described in this Paragraph III. A. 2. provided BMPs are used to prevent the introduction of species that are not native to the region (see II. G. above) and that such action is included in an approved Forest Stewardship Plan for the Premises]; and

3. Trails: The maintenance, use, and repair, or discontinuance of, existing unpaved trails identified in the Baseline Documentation Report and the approved Forest Stewardship Plan for the Premises, substantially in their present condition; and the construction, relocation, replacement of new unpaved trails, provided such new unpaved trails shall not have a travel sur-

face that exceeds (5) five feet in width and are described in the approved Forest Stewardship Plan for the Premises and

4. Any maintenance, use, repair, construction, relocation, replacement, or

discontinuance of improvements, woods roads, farm roads, or trails under this Article III.A shall be designed, located and constructed in a manner that will minimize negative impacts to water quality, soil conservation, wildlife conservation, cultural resources, and is not wasteful of the natural resources of the Premises, or detrimental to the purposes of this CR.

[Note: Paragraph B below will only be included on a case-by-case basis, and only when it is determined that the Premises has the capacity to provide the materials necessary to carry out “Improvements” identified in III. A. above in a manner that would minimize any impacts from excavation on the purposes of the CR.]

B. *Excavation.* Excavation or extraction of soil, gravel, sand, rock or other mineral resource or natural deposit from the Premises solely for use in the construction, repair, maintenance or relocation of unpaved woods roads and trails on the Premises, provided that:

1. The Grantor’s proposal for any such excavation or extraction and associated use shall be included in the Forest Stewardship Plan for the Premises, and shall not be permitted unless such excavation or extraction and associated use are deemed compatible with and in support of forest management and are described in the approved Forest Stewardship Plan; and

2. No excavated or extracted material shall be removed from the Premises; and

3. No excavation or extraction shall be permitted from within the filter strips associated with rivers, streams, lakes, ponds, or wetlands described in the Forestry BMPs, or within five hundred feet (500') of any vernal pool identified in the approved Forest Stewardship Plan; and 4. Grantor shall restore all areas affected by said excavation or extraction to a state that reasonably matches and blends in with the natural topography and condition. Said restoration to a state blending with the natural topography and condition shall include, but not necessarily be limited to, the grading of cut banks to a natural angle of repose, the spreading of topsoil over the affected areas, the stabilization of the affected and adjacent areas against erosion, and the re-vegetation of affected areas with native plant species or conservation grass seed mix. Any topsoil removed during excavation or extraction shall be stockpiled onsite and used in the restoration of affected areas. Extraction and excavation must be conducted in accordance with Forestry BMPs.

C. *“Compatible Non-Forest Uses.”* Maintaining, mowing and grazing of existing pasture, grassland, fields (including hay production), meadows, and shrubland; grazing and pasturing of animals, and raising of crops; and, provided that:

1. The activities are conducted within the areas identified in Exhibit XX as Existing Compatible Non-Forest Uses Areas and those areas containing Prime Agricultural Soils or Prime Forest Soils, so long as these areas are not more than the majority of the acreage being conserved in the CR, and attached hereto and incorporated herein, the Baseline Documentation Report, and the approved Forest Stewardship Plan and/or Conservation Plan for the Premises; and

2. Any activities with the potential to affect water quality and soil erosion shall be described in a USDA Natural Resources Conservation Service Conservation Plan for the Premises (hereinafter “Conservation Plan”) approved by the conservation district for the locality in which the Premises is located, provided further that (a) the Conservation Plan is approved by Grantee pursuant to Article IV, below; and (b) the Grantor submits a copy of this CR with the proposed Conservation Plan to the conservation district; and (c) the Conservation Plan is not inconsistent with the Purposes of this CR; and

3. The activities are carried out in accordance with sound agricultural management practices, and do not occur within 100 feet of any stream or wetland, unless such activities are identified in the landowners approved Conservation Plan and carried out in accordance with said Conservation Plan; and

4. The activities shall be conducted in a manner that minimizes to the maximum extent practicable any adverse effects on the natural resources on the Premises, including but not limited to any watercourse or wetlands on the Premises; and

5. The reasonable use of pesticides, herbicides, manure and fertilizers within the existing agricultural areas is limited to the extent necessary to conduct agricultural activities identified in the Conservation Plan for the Premises, provided that such use does not occur within wetland buffer zone unless such activity is carried out in accordance with the Conservation Plan and is based on best management practices, and is in conformance with manufacturer’s directions; and 6. No structures are erected; and

D. *Recreational Activities.* Non-motorized recreational activities

such as hiking, horseback riding, snowshoeing, cross-country skiing, bird watching, nature study or research, trapping, hunting and fishing and motorized outdoor recreational activities limited to snowmobiling, as otherwise allowed by law, provided that such uses do not materially alter the landscape and are carried out in a reasonable manner that does not impair the purposes of this CR.

E. Archaeological Resources. The conducting of archaeological activities, including without limitation survey, excavation and artifact retrieval, following submission of an archaeological field investigation plan and its approval in writing by Grantee and the State Archaeologist of the Massachusetts Historical Commission (or appropriate successor official), and subject to approval by the Grantee in accordance with Article IV, below.

F. Signs. The erection and maintenance of non-electronic signs no larger than two (2) square feet in size, with respect to hunting, trespass, trail access, historical, cultural, and ecological interests, identity and address of the occupants, sale of the Premises, the Grantee's interest in the Premises, and the protected conservation values, and in addition, one sign no larger than X feet by X feet to advertise Grantor's products;

G. Vegetation Management. The ordinary improvement and maintenance of landscape features of the Premises, including trimming, maintaining or replacing trees, shrubs or other plantings, and the de minimis dispersal and/or piling of these organic materials on the Premises; removing diseased or insect damaged trees or vegetation, removing limbs and trees that are a hazard to private property or public or private health or safety; controlling or eliminating insect infestations or invasive plant species, and cutting, mowing, or replacing grasses and other vegetation in accordance with estab-

lished horticultural practices. The use or application of pesticides, herbicides, insecticides and fungicides, shall be allowed to carry out the activities authorized in this paragraph, provided that: (i) such substances are used in a way that minimizes impacts to and contact with non-target species, streams, vernal pools, wetlands, lakes and any other water bodies on the Premises, (ii) such use does not occur within 100 feet of any stream or wetland, and (iii) such use is based on prudent and sound silvicultural and horticultural principles, as applicable, in conformance with manufacturer's directions, and in accordance generally accepted "Best Management Practices", as outlined in the Massachusetts Forestry Best Management Practices Manual by David Kittredge and Michael Parker, (or successor document). All activities under this section must be described in the approved Forest Stewardship Plan and/or Conservation Plan or obtain the approval of the Grantee in accordance with Article IV hereof.

H. Forestry. Long term forest management activities including cultivation and harvesting of timber and non-timber forest products including tree cutting, maple sugaring, agro-forestry, wildlife habitat improvement, water quality management, recreational management, soil conservation, and other forestry-related activities, provided that:

- a. Grantors, or others permitted by Grantors, conduct sound silviculture on the Premises in accordance with generally accepted "Best Management Practices", as outlined in the Massachusetts Forestry Best Management Practices Manual by David Kittredge and Michael Parker, (or successor document), including removing of brush, pruning, selective de minimis cutting for non-commercial use and cutting to prevent, control or remove hazards, disease, insect or fire damage, or

to preserve the present condition of the Premises, including vistas, woods roads, fence lines and trails and meadows (as shown in the Baseline Documentation Report);

b. The cutting of trees for personal use, pursuant to the Forest Cutting Practices Act under M.G.L. Chapter 132 (or successor statute) to provide non-commercial forest products for personal use, *below* a volume of XX cords or XX,000 board feet (XX mbf) per year and where no wood leaves the Premises and is not sold. Such use is permitted, provided that the cutting is not inconsistent with the purposes of this Conservation Restriction.

c. The cutting and harvesting of trees for commercial timber production or for personal use equal to or above XX cords or XX,000 board feet (XX mbf) and no more than 50 cords or 25,000 board feet (25mbf) per year, pursuant to the Forest Cutting Practices Act under M.G.L. Chapter 132 (or successor statute) and in accordance with a 10-year Forest Stewardship Plan prepared by a Massachusetts licensed professional forester, and designed to protect the conservation values of the Premises, including, without limitation, water quality, water features, scenic views, and wildlife habitat.

d. The cutting and harvesting of trees *at volumes equal to or above 50 cords or 25,000 board feet (25 mbf)* but only if carried out with a Forest Cutting Plan prepared by a licensed forester and in accordance with a 10-year Forest Stewardship Plan prepared by a Massachusetts licensed professional forester, and designed to protect the conservation values of the Premises, including, without limitation, water quality, water features, scenic views, and wildlife habitat.

e. All Forest Stewardship Plans and any amendments to said

Plans shall reference this Conservation Restriction and support the purposes of this Conservation Restriction and be submitted to the Grantee for review but this review shall not require any approvals by the Grantee. No provisions in the Forestry Stewardship Plan or the Cutting Plan shall change the meaning or terms of this CR, and in the case of any conflict between this CR and the Stewardship Plan or the Cutting Plan, the CR shall govern.

f. Premises remain private land and nothing herein shall be construed to be subject to National Environmental Policy Act (NEPA) or the National Forest Management Provisions for allowing public right to appeal management actions.

I. *Temporary Forestry Related Structures.* Constructing or placing temporary structures for forestry related uses including but not limited to portable saw mill, firewood processor, shelters for equipment, or sugarhouse. For the purposes of this section, a temporary structure is defined as a structure that does not have a permanent foundation, or does not substantially alter or otherwise affect the soil profile, but only with the written consent of the Grantee, which consent shall not be unreasonably withheld, conditioned or delayed provided it shall be reasonable for Grantee to withhold consent if the design or location of such structure, in its good faith judgment reasonably exercised, substantially impairs or interferes with the conservation values set forth herein. All such structures shall be for use for materials originating on the Premises, and use of such equipment is done in such a manner as to protect the scenic values, water quality, water features and conservation values of the Premises.

J. *Motor Vehicles.* The use of motorized or power-driven vehicles

for all forest management activities in the approved Stewardship Plan for the Premises, and by the Grantor, Grantor's invitees, or Grantor's employees and/or agents as necessary to carry out activities permitted under this CR, for access by Grantee as set forth in Article VI, hereof, and for access by police, fire, emergency, public works or other governmental personnel in carrying out their official duties.

K. Surveys and Boundaries. Conducting field and instrument surveys of the Premises and installing necessary and appropriate monumentation, including surveys to more accurately depict perimeter boundaries, stands or forestry boundaries, or other boundaries which may be needed to properly manage the Premises and carry out or abide by the terms of this CR; to enter into agreements to resolve bona fide boundary disputes or ambiguities, with prior notice and approval (Section IV.) to Grantee, which consent shall not be unreasonably withheld.

L. Legal Compliance. The exercise of any right reserved by the Grantor under this Article III shall be in compliance with the then-current Zoning By-Law applicable to the Premises, the Wetlands Protection Act (G.L. Chapter 131, Section 40) and all other applicable federal, state, and local laws and regulations. The inclusion of any reserved right in this Article III requiring a permit from a public agency does not imply that the Grantee or the Commonwealth takes any position on whether such permit should be issued.

M. Other Rights. Any activity not prohibited in Article II, or use not reserved herein is allowed only with the express written approval of the Grantee stating that such activity or use is not inconsistent with the purposes of the CR. Any request by Grantor for approv-

al to conduct, undertake or allow an activity or use not otherwise reserved shall be presented in accordance with Article IV, below.

IV. NOTICE AND APPROVAL: Unless otherwise provided herein or by law, the Grantor shall notify Grantee in writing, sent certified mail, return receipt requested, ninety (90) days before allowing or undertaking any uses or activities on the Premises which require the approval of the Grantee. Grantor shall also in the same manner notify the Grantee before allowing or undertaking any uses or activities which may impair the conservation interests found within the Premises or are contrary to the purposes of this CR. Notice from the Grantor shall describe the nature, scope, design, location, timetable, and any other material aspect of the proposed activity in sufficient detail to permit the Grantee to make an informed judgment as to its consistency with the purposes of the CR. Grantor shall submit to Grantee such plans and other information as Grantee shall reasonably require in determining whether the use or activity is consistent with the purposes of this CR. Grantor shall also provide the State Forester or his designated representative a copy of all notices. Approval from the State Forester is also required as indicated in above sections. All communications in this regard should be mailed to:

Conservation Commission
Town of XXXX
[Insert Appropriate Address]

with copies to:

Board of Selectmen
Town of XXXX
[Insert Appropriate Address]

and

To Grantee: Franklin Land Trust, Inc.
 P.O. Box 450
 Shelburne Falls, Massachusetts 01370

or, if said notice is returned to the sender as undeliverable, a good faith effort shall be made to ascertain a valid address and notice to be re-sent.

With respect to those activities or uses that require Grantee's approval, Grantee shall grant or withhold its approval in writing within ninety (90) days of receipt of Grantor's written request therefore. Grantee's approval may be withheld only upon a reasonable determination by the Grantee, that the action as proposed would be inconsistent with the purposes of this CR, would materially impair the conservation purposes to be protected by this CR, or would violate any statute, ordinance, bylaw, rule or regulation. Failure of Grantee to respond within ninety (90) days of receipt of written request from Grantor shall be deemed to constitute approval of Grantee, provided that: (i) the request sets forth the provisions of this paragraph relating to approval having been deemed given after the passage of time; and (ii) such activities are not prohibited in Article II or clearly contrary or detrimental to the purposes of this CR. If both of these provisos are not satisfied, Grantee approval cannot be assumed or claimed by the Grantor. In the event the activity proposed is necessary to address an emergency situation, either to avert environmental degradation, ecological damage or risk to public health and safety, Grantee shall respond forthwith and with all deliberate speed.

V. LEGAL REMEDIES OF THE GRANTEE

The rights hereby granted shall include the right to enforce this

CR by appropriate legal proceedings and to obtain injunctive and other equitable relief against any violations, including, without limitation, relief requiring restoration of the Premises to its condition prior to the time of the injury complained of (it being agreed that the Grantee will have no adequate remedy at law). The rights hereby granted shall be in addition to, and not in limitation of, any other rights and remedies available to the Grantee for the enforcement of this Conservation Restriction. Grantee agrees to cooperate for a reasonable period of time prior to resorting to legal means in resolving issues concerning violations provided Grantor ceases objectionable actions and Grantee determines there is no ongoing diminution of the conservation values of the Conservation Restriction.

A. Costs of Enforcement

Grantor covenants and agrees to reimburse to Grantee for all reasonable costs and expenses (including without limitation reasonable attorneys fees) incurred by the Grantee in enforcing this Conservation Restriction or in taking reasonable measures to remedy, abate or correct any violation thereof. The provisions of this paragraph shall not preclude any other remedies available at law or in equity.

B. Acts Beyond The Grantor's Control

Nothing contained in this Conservation Restriction shall be construed to entitle the Grantee to bring any actions against the Grantor for any injury to or change in the Premises resulting from causes beyond the Grantor's control, including but not limited to fire, flood, storm and earth movement, or from any prudent action taken by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Premises resulting from such causes. In the event of such an occurrence, the parties will co-

operate in the restoration of the Premises, if it is determined that restoration is desirable and feasible.

C. Non-Waiver

If for any reason there is a failure of the Grantee to enforce the terms of this CR, it shall not result in a waiver of the right to enforce.

VI. RIGHT OF ACCESS; INSPECTION

This Conservation Restriction does not grant to the Grantee, to the public, or to any other person or entity any right to enter upon the Premises, except as follows:

The Grantor hereby grants to the Grantee, or its duly authorized agents or representatives, the right to enter the Premises upon reasonable notice and at reasonable times, for the purpose of inspecting the Premises to determine compliance with or to enforce this Conservation Restriction. The Grantors also grant to the Grantee, after notice of a violation and failure of the Grantors to cure said violation, the right to enter the Premises for the purpose of taking any and all actions with respect to the Premises as may be necessary or appropriate to remedy or abate any violation hereof, including but not limited to the right to perform a survey of boundary lines.

VII. COSTS, TAXES, LIABILITY

A. Taxes

Grantor shall pay and discharge when due any and all real property taxes and other assessments levied by competent authority on the Premises.

B. Disclaimer of Liability

By acceptance of this conservation restriction, the Grantee does

not undertake any liability or obligation relating to the condition of the Premises pertaining to compliance with and including, but not limited to, hazardous materials, zoning, environmental laws and regulations, or acts not caused by the Grantee or its agents.

VIII. EXTINGUISHMENT, EMINENT DOMAIN, REVERSION OF FUNDS

The grant of this CR gives rise to a real property interest immediately vested in the Grantee which has a fair market value equal to the amount by which the CR reduces, at the time of the grant, the appraised fair market value of the Premises as if unrestricted. Such proportionate value of this CR at the time of the grant is [*Insert Percentage: i.e., ninety*] percent (??.%), which proportionate value shall remain constant.

A. Extinguishment

If circumstances arise in the future such as render the purpose of this Conservation Restriction impossible to accomplish, this restriction can only be terminated or extinguished, whether in whole or in part, by a court of competent jurisdiction under applicable law, after review and approval by the Massachusetts Secretary of the Executive Office of Energy and Environmental Affairs and the Secretary of the United States Department of Agriculture as provided in paragraph B below. If any change in conditions ever gives rise to extinguishment or other release of the Conservation Restriction under applicable law, then Grantee, on a subsequent sale, exchange, or involuntary conversion of the Premises, shall be entitled to a portion of the proceeds in accordance with paragraph B below, subject, however, to any applicable law which expressly provides for a different disposition of the proceeds and only after complying with the terms of any gift, grant or funding requirements.

Grantee shall use its share of the proceeds in a manner consistent with the conservation purpose set forth herein.

B. Reversion of Funds

The Grantee acknowledges that this CR was acquired with Federal funds under the XXX Forest Program), and that the interest acquired cannot be sold, exchanged, released, or otherwise disposed, except in accordance with the XXX Forest Program grant requirements, and unless the United States is reimbursed the market value of the CR at the time of disposal; provided, however, the United States Secretary of Agriculture may exercise discretion to consent to such sale, exchange, release or disposition upon the State's tender of equal valued consideration acceptable to the Secretary, or as the Secretary of Agriculture otherwise approves. If any change in conditions, including a taking by a public authority (other than the Commonwealth) under power of eminent domain, gives rise to extinguishment or other release of this CR under applicable law, Grantee shall be entitled to its proportionate share of the proceeds equal to the proportionate value of the CR, subject, however, to any applicable law which expressly provides for a different disposition of proceeds, and subject to the provisions of the XXX Forest Program and subject also to the terms of any gifts, grants or funding requirements. The Grantor and Grantee shall cooperate in recovering the full value of all direct and consequential damages resulting from extinguishment, provided that, if the public authority is The Commonwealth, the Grantor and Grantee shall pursue their remedies separately.

C. Proceeds

The recovery of proceeds by the Grantor and Grantee, if any, shall be governed by the proportionate value of the CR, as hereinabove defined, as determined by an appraisal at the time of the extinguishment.

If the conservation interests protected hereby are unaffected by the taking, and the only interest taken by public authority is the Grantor's interest, and recovered proceeds are awarded on the basis of the value of the Premises as restricted by this CR, then the proceeds from such taking shall be payable in their entirety to Grantor. Grantee shall use any proceeds in a manner consistent with this CR and the Forest Legacy Program.

D. Grantor/Grantee Cooperation Regarding Public Action

Whenever all or any part of the Premises or any interest therein is taken by public authority under power of eminent domain or other act of public authority, then the Grantor and the Grantee shall cooperate in recovering the full value of all direct and consequential damages resulting from such action. All related expenses incurred by the Grantor and the Grantee shall first be paid out of any recovered proceeds, and the remaining proceeds shall be distributed between the Grantor and Grantee in shares equal to such proportionate value. If a less than fee interest is taken, the proceeds shall be equitably allocated according to the nature of the interest taken. The Grantee shall use its share of the proceeds like a continuing trust in a manner consistent with the conservation purposes set forth herein. and in accordance with paragraph B above, subject however, to any applicable law which expressly provides for a different disposition of the proceeds and only after complying with the terms of any gift, grant or funding requirements.

X. RUNNING OF THE BURDEN; EXECUTION OF INSTRUMENTS; RUNNING OF THE BENEFIT; ASSIGNABILITY; BINDING EFFECT; AMENDMENT AND DURATION

A. Running of the Burden

The burdens of this Conservation Restriction shall run with the Premises in perpetuity, and shall be enforceable against the Grantor and the successors and assigns of the Grantor holding any interest in the Premises.

B. Running of the Benefit; Assignability

The benefits of this Conservation Restriction run to the Grantee, are not appurtenant to any particular parcel of land, and shall be in gross and shall not be assignable by the Grantee, except as follows: As a condition of any assignment, the Grantee shall require that the purpose of this Conservation Restriction continues to be carried out; and the Assignee, at the time of the assignment, is limited only to a government entity; is consistent with Article 97 of the Amendments to the Massachusetts Constitution, Section 170h(1) of the U.S. Internal Revenue Code of 1986, as amended, MGL c. 184 sec. 32, and the Forest Legacy Program; provided further that such entity has among its purposes the conservation and preservation of land or water and agrees to and is capable of enforcing the conservation purposes of this CR. Any such assignee shall have the like power of assignment.

C. Binding Effect

This CR and all terms and provisions hereof shall be deemed to run with the land and be binding upon the Grantor and Grantee, and the successors and assigns of both the Grantor and Grantee.

D. Amendment and Duration

This CR may only be amended by the Grantee, or amended by the parties, consistent with G.L. Chapter 184, Section 32, Article 97 of the Amendments to the Massachusetts Constitution, and the XX Forest Program. No amendment may be made that will be inconsistent with the purposes of this CR, affect its perpetual dura-

tion thereof, or adversely materially affect any of the conservation values of the Premises. Any such amendment shall be approved by the Secretary of the Massachusetts Executive Office of Energy and Environmental Affairs, the Secretary of the United States Department of Agriculture, and recorded with the Franklin Registry of Deeds where the land lies.

E. Execution of Instruments

The Grantee is authorized to record or file any notices or instruments appropriate to assuring the perpetual enforceability of this Conservation Restriction; the Grantor, on behalf of themselves and their successors and assigns, appoint the Grantee their attorney-in-fact to execute, acknowledge and deliver any such instruments on her behalf. Without limiting the foregoing, the Grantor and their successors and assigns agree themselves to execute any such instruments upon request.

F. Non Merger

The parties intend that any future acquisition of the Premises shall not result in a merger of the Conservation Restriction into the fee. The Grantor agrees that he will not grant title, and the Grantee agrees that it will not accept title, to any part of the Premises without having first assigned this Conservation Restriction to ensure that merger does not occur.

XI. SUBSEQUENT TRANSFERS

The Grantor agrees to incorporate by reference the terms of this CR in any deed or other legal instrument by which it divests the Grantor of any interest in the Premises, including, without limitation, a leasehold interest. Grantor further agrees to give written notice to Grantee of such transfer at least thirty (30) days prior to the date of such transfer. Grantor shall also provide the State For-

ester or his designated representative a copy of all such notices. Failure to do any of the above by the Grantor or Grantee, as the case may be, shall not impair this CR or its enforceability in any manner or the effectiveness of such transfer or leasehold interest.

XII. SEVERABILITY

If any Article or provision of this CR shall be held to be unenforceable by any court of competent jurisdiction, this CR shall be construed as though such section had not been included in it. If any Article or provision of this CR shall be susceptible of two constructions, one of which would render such Article or provision invalid, then such Article or provision shall be given the construction that would render it valid. If any Article or provision of this instrument is ambiguous, it shall be interpreted in accordance with the policies and provisions expressed in Article 97 of the Amendments to the Massachusetts Constitution, the requirements of the Forest Legacy Program established pursuant to Section 1217 of Title XII of the Food, Agriculture, Conservation and Trade Act of 1990, Public Law 101-624:104 stat. 3359, and G.L. Chapter 184, Section 32.

XIII. MISCELLANEOUS

A. Pre-existing Public Rights: Approval of this CR pursuant to G.L. Chapter 184, Section 32 by any municipal officials and by the Secretary of Energy and Environmental Affairs is not to be construed as representing the existence or non-existing of any pre-existing rights of the public, if any, in and to the Premises, and any such pre-existing rights of the public, if any, are not affected by the granting of this CR.

B. Excise Stamps: No Massachusetts deed excise tax stamps are required by G.L. Chapter 64D, Section 1, as the [Commonwealth] [Municipality] is a party to this instrument.

C. Matters of Record: This CR is conveyed subject to and together with matters of record at the Franklin Registry of Deeds.

D. Homestead: All Grantor's rights as to the estate of homestead as to the Premises described in Exhibit "A" are hereby waived and subordinated to this Conservation Restriction and particularly to Article VIII. B. above. Grantor specifically reserves the estate of homestead as to the XXX acres not herein conveyed.

E. Subordination: The Grantor shall record at the appropriate Registry of Deeds simultaneously with this CR all documents necessary to subordinate any mortgage, promissory note, loan, lien, equity credit line, refinance assignment of mortgage, lease, financing statement or any other agreement which gives rise to a surety interest affecting the Property.

XV. EFFECTIVE DATE

Conservation Restriction shall be effective when the Grantor and the Grantee have executed it, the administrative Approvals required by Section 32 of Chapter 184 of the General Laws have been obtained, and it has been recorded in the appropriate Registry of Deeds. The Grantee shall record this instrument in timely manner in the Franklin Registry of Deeds.

IN WITNESS WHEREOF, [*Insert Grantor's Name*] has/have caused these presents to be signed, acknowledged and delivered as [*Insert Grantor's Name*], this [] day of [], 202_.

[*Insert Grantor's Name*], as aforesaid

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF _____

On this [] day of [], 202_, before me, the undersigned notary public, personally appeared [Insert Grantor's Name], who provided to me through satisfactory evidence of identification, which was personal knowledge/a [] Driver's License, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that she/he signed it voluntarily for its stated purpose as [Insert Grantor's Name].

NOTARY PUBLIC
My Commission Expires _____

ACCEPTANCE OF CONSERVATION RESTRICTION

The undersigned Conservation Commission of the Town of [Insert Name of Municipality], pursuant to a VOTE taken at a Public Meeting duly held on _____, 202_, authorizing the acceptance of the foregoing Conservation Restriction, hereby accept said Conservation Restriction pursuant to Section 8C of Chapter 40 of the General Laws of Massachusetts.

By: _____
CHAIR
By: _____
By: _____
By: _____

By: _____

By: _____

APPROVAL AND ACCEPTANCE BY SELECT BOARD

I, _____, Clerk of the Town of [Insert Name of Municipality], hereby certify that at a public meeting of the [Insert Name of Municipality] Board of Selectmen duly held on _____, 202_, the Board voted to approve and accept the foregoing Conservation Restriction, pursuant to Section 32 of Chapter 184 and Section 8C of Chapter 40 of the General Laws of Massachusetts.

By: _____

CLERK

TOWN OF [Insert Name of Municipality]

ACCEPTANCE OF GRANT

The above Conservation Restriction accepted this ____ day of _____, 202_.

FRANKLIN LAND TRUST, INC.

By _____
Thomas S. Curren, Executive Director
For authority see Book 4678, Page 35.

THE COMMONWEALTH OF MASSACHUSETTS

Franklin, ss:

On this ____ day of _____, 202_, before me, the undersigned notary public, personally appeared Thomas S. Curren, Executive Director, proved to me to be the person whose name is signed above through satisfactory evidence of identification which was personal knowledge, and acknowledged to me that he signed it voluntarily for its stated purpose as Executive Director of the Franklin Land Trust, Inc., before me,

NOTARY PUBLIC
My Commission Expires_____

APPROVAL BY SECRETARY OF THE
MASSACHUSETTS EXECUTIVE OFFICE OF
ENERGY AND ENVIRONMENTAL AFFAIRS
COMMONWEALTH OF MASSACHUSETTS

Suffolk, ss:

The undersigned, [*Insert Name of EEA Secretary: i.e., Richard K. Sullivan*], Secretary of Executive Office of Energy and Environmental Affairs of the Commonwealth of Massachusetts, hereby certifies that the foregoing Conservation Restriction to the Town of [*Insert Name of Municipality*] has been approved in the public interest pursuant to Massachusetts General Laws, Chapter 184, Section 32.

Dated: _____, 202_

Richard K. Sullivan
Secretary of Energy and Environmental Affairs

COMMONWEALTH OF MASSACHUSETTS

Suffolk, ss:

On this day of _____, 202_, before me, the undersigned notary public, personally appeared [*Insert Name of EEA Secretary: i.e., Richard K. Sullivan*], who proved to me through satisfactory evidence of identification, which was personal knowledge of identity, to be the person whose name is signed on the proceeding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

NOTARY PUBLIC
My Commission Expires_____

EXHIBIT [A]
(*Metes and Bounds Description or Survey of the Premises*)

EXHIBIT [B]
(*Metes and Bounds or Survey Sketch of the Exclusion, if any*)

EXHIBIT [C]
(*Sketch of areas in compatible non-forest use, if any*)