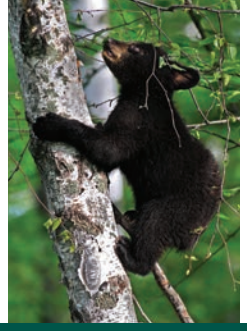



Stewardship Guide for Vermont Forest Landowners

VNRC
VERMONT NATURAL RESOURCES COUNCIL

Stewardship Guide for Vermont Forestland Owners

Prepared by the Vermont Natural Resources Council

Funding and general support for this publication was provided by:
U.S. Forest Service, State and Private Forestry
Vermont Housing and Conservation Board
The Daybreak Fund at the Vermont Community Foundation
The Adelard A. and Valeda Lea Roy Foundation
Vermont Natural Resources Council

Authors:

This guide was written primarily by Michael Snyder, Greenfire Enterprises, with contributions from Jamey Fidel, Vermont Natural Resources Council/Audubon Vermont, and tanamá varas, Dawn Land Farm.

VNRC would like to thank the following partners who reviewed and contributed to this document:

Deb Brighton, *Consultant*
Kate Forrer, *Vermont Woodlands Association*
Paul Hamlin, *Vermont Fish and Wildlife Department*
Lisa Sausville, *Vermont Coverts: Woodlands for Wildlife*
Andrea Shortsleeve, *Vermont Fish and Wildlife Department*
Mark Raishart, *Vermont Housing and Conservation Board*
Keith Thompson, *Vermont Department of Forests, Parks, and Recreation*

Audubon Vermont · Vermont Coverts Woodlands for Wildlife · Vermont Housing & Conservation Board, Vermont Farm & Forest Viability Program · Vermont Woodlands Association · Forests, Parks & Recreation Vermont, Agency of Natural Resources · Vermont Fish & Wildlife · Greenfire Enterprises

Valuable assistance was provided by Sarah Christopherson, Alex Connizzo, Mackenzie Dix, Stephi Drago and Evelyn Seidner with Vermont Natural Resources Council, and Tim Duclos, Steve Hagenbuch and Fen Levy with Audubon Vermont.

The authors relied on material from other VNRC documents and reports, and information that was readily available from the Vermont Agency of Natural Resources and other organizations to develop this publication.

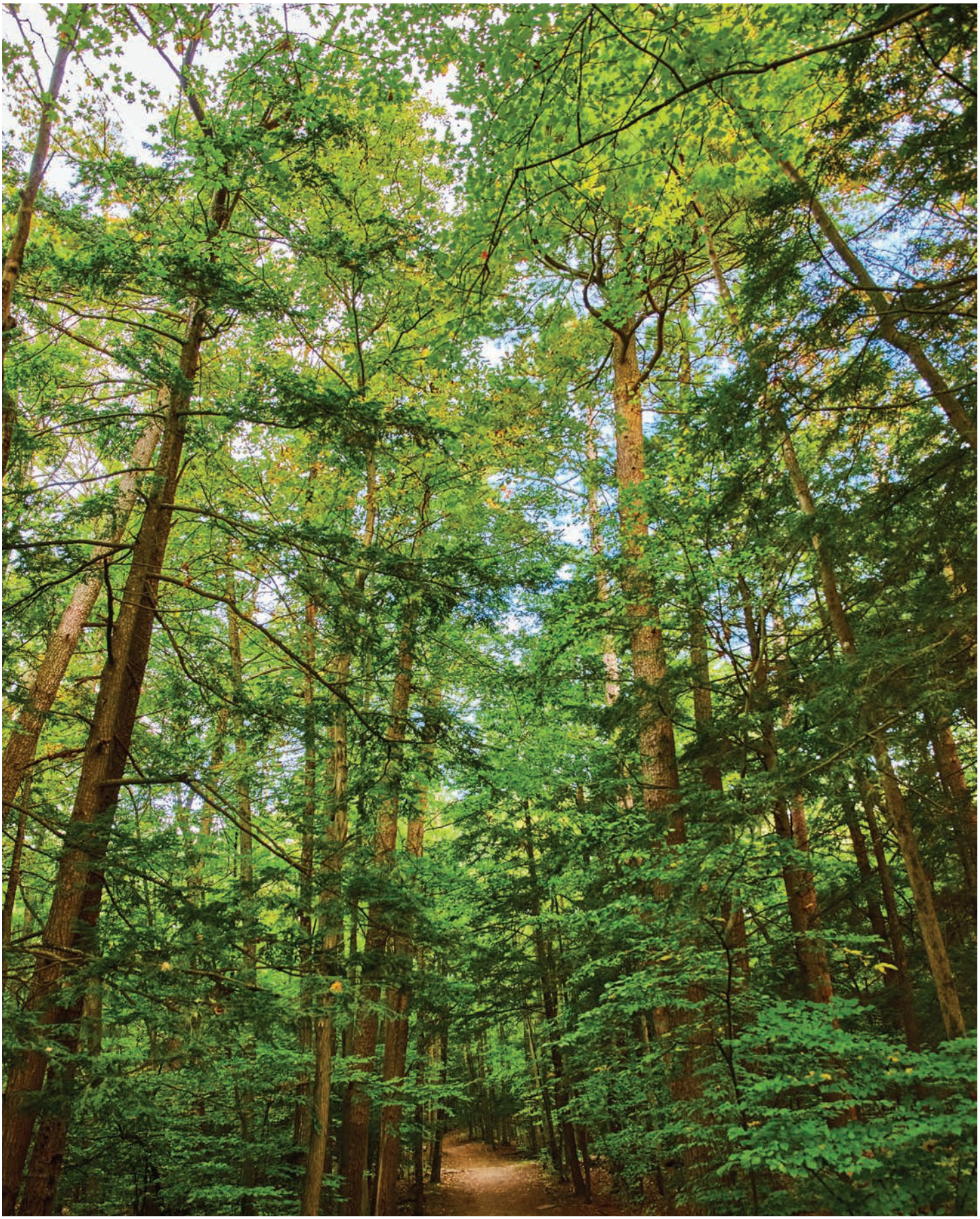
Photo credits appear by each photo in this publication. However, we would like to extend a very special thanks to Vermont photographer Blake Gardner for his generous contributions to this publication.

Cover photo:
Design: Tim Newcomb, Newcomb Studios
Printing: Accura Printing

February 2026

A digital version of this publication, including the most up-to-date list of references, publications and additional resources, is available online at www.vnrc.org/forestlandowners/guide

Table of Contents



Introduction

Welcome to the Stewardship Guide for Vermont Forest Landowners. *This guide invites you to explore the many possibilities for informed and empowered ownership and provides you with the information, resources, and inspiration you need to steward and manage your forestland responsibly and sustainably – in ways consistent with your own philosophies and values. Whether you have owned forestland for years and worked with a natural resource professional, or you are brand new to forest ownership, this guide has something for everyone.*

Embarking on Your Forestland Journey

Congratulations! You are the proud owner of Vermont forestland, joining a diverse community connected to these landscapes across generations. This land has sustained life for millennia—from the indigenous confederacy of the Wabanaki and other Native peoples who maintained reciprocal relationships with these forests, to the complex mosaic of communities who have valued these ecosystems in different ways over time. As you begin this journey with your own relationship to the land and your own values and goals for it, you enter a living history where your decisions will shape both ecological health and social relationships. Through attentive and informed ownership, you can provide countless benefits and value to and from your woodlands.

Vermont's forests are a vital part of our state's identity, providing numerous benefits. As a forest landholder in Vermont, you play a crucial role in conserving the state's natural heritage, promoting biodiversity, and maintaining the ecological underpinning of our landscapes.

Privately held forestland has for centuries provided wide-ranging and fundamental ecologic, economic, and cultural benefits. Think of the forest as "natural infrastructure" that supports our wildlife and biodiversity, water supply and quality, and our resilience to environmental challenges and threats like climate change and flooding by storing carbon and attenuating large volumes of water.

That's quite a lot and it doesn't even account for the $1.6 billion dollars in annual economic activity from forestry and the world-class outdoor recreation and tourism that forestlands support. As a forest landowner, you have a great opportunity to make a significant contribution to our wonderful state.

Nothing less than the vitality and health of our land, waters, and human communities stands to benefit from your thoughtful stewardship. It's not hard, but it's also not automatic. And here in Vermont, we are fortunate to have a top-shelf community of forest conservation practitioners and helpers to assist you. From ecologists, foresters, wildlife biologists, and hydrologists to planners and attorneys, you have access to cutting-edge expertise, experience, and customized assistance to chart your stewardship course.

So how can this guide be helpful? Well, with just about any conceivable purchase, one receives an owner's or operator's guide. Not so with forestland — arguably one of the most expensive and significant purchases a person ever makes, often coming with a dwelling. How we hold and use our forestland has massive implications for it, us, our neighbors, and the planet. Imagine operating something so grand and important without guidance!

As such, this guide is intended to serve as something of an owner's guide for forestland. It provides an overview of the value and importance of forests, the value and importance of forest stewardship, the opportunities

Marita Kavelashvili-Unsplash

and possibilities of stewardship activities, and the types of stewardship information and assistance services that exist in Vermont. Indeed, there are many resources and incentives available to suit your interests and further your goals. Ultimately, this guide is intended to empower landowners in decision making and to be a guide to the full range of information and assistance available.

Owning forestland in Vermont is a privilege and a responsibility. As a very wise person said, "It's not ours, it's just our turn."[1] As a forest landowner, you have the opportunity to make a positive impact on the land, contribute to the conservation of Vermont's natural heritage, and leave a lasting legacy for future generations.

This guide will walk you through pertinent steps and learning opportunities on a range of topics. By embracing stewardship principles and practices outlined in this guide, connecting with resources and professionals, and taking proactive steps to care for and enjoy your forest, you can ensure that your land remains a vibrant and resilient part of Vermont's landscape, culture, and livability.

Thank you for joining the community of forest stewards and for your commitment to the health and vitality of Vermont's forests.

How To Use This Guide

This guide is structured to first provide some background, context, and history of Vermont's people and forests. It also includes an overview of assessing current conditions, tips on getting to know your land, a primer on forest ecology, and a call for a land ethic of responsibility and inclusion. It then pivots to mechanisms for ensuring long-term stewardship and conservation, the importance of wildlife and habitats, and forest health. The guide then turns to a focus on planning and things you can do in stewarding your woods. At the end we provide a compendium of resources and supporting information.

We invite you to find what works best for you; we've written the guide with a certain logical sequence of information so you can certainly start at the beginning and work your way through the chapters in order. But we've tried to make the chapters stand on their own and so you can also just jump in wherever your interest takes you. If you have limited time, scan the table of contents and pick whatever jumps out at you.

1 Doug Duren of "Sharing the Land" in Richland County, Wisconsin

CHAPTER 1
Exploring the Meaning of Forest Ownership

As an owner of forestland in Vermont, you are on a journey of discovery, opportunity and responsibility. Forest ownership is more than just owning land; it's a profound connection to nature, community, and heritage – with real power to affect the future. Regardless of your reasons for acquiring your forestland, it represents a unique opportunity to steward a vital natural resource and contribute to Vermont's landscapes and communities.

Tim Stout

Vermont is Forest Strong: Celebrating the Many Values of Vermont's Forests

Vermont's forests are a cornerstone of the state's identity, culture, and economy. Beyond their aesthetic appeal, they provide a wealth of ecosystem and economic services, including clean air and water, wildlife habitat, carbon sequestration and storage, diverse recreational opportunities, and value-added forest products. Our forests are also deeply intertwined with Vermont's history, serving as the backdrop for generations of diverse approaches to land stewardship, land use, forestry practices, and community life.

The Importance of Forest Stewardship

Forest stewardship is an ethic of responsibility; it involves managing your forestland in a way that maintains its health and productivity while maintaining ecological, economic, and social values – things like biodiversity and forest health, timber revenues, and recreational access, for example. Stewardship is more than just managing trees or trails; it's a mindset that emphasizes the responsible care and conservation of forest ecosystems. As a steward of the land, you are part of — a member of — the forest community, not separate from it. You have the opportunity to protect and enhance the natural assets on your property, ensuring they can be enjoyed by future generations, both human and wild, and valued by residents and visitors alike, many of whom may not have the privilege or ability to own forestland themselves.

In practice, stewardship of Vermont's forestland encompasses a wide range of activities and pursuits aimed at promoting forest health, biodiversity, and sustainable use, while honoring diverse cultural relationships with the land. This includes integrating traditional ecological knowledge alongside scientific approaches, creating equitable access opportunities, and acknowledging the historical context of land ownership. Each action you take contributes to either the overall well-being or diminishment of the forest ecosystem; choose your actions thoughtfully!

By embracing stewardship principles, forest landowners can play a vital role in safeguarding the ecological integrity and resilience, the economic potential, and the cultural importance of Vermont's forests.

Your Land, Your Legacy: Exploring Values and Goals for Your Forestland

As a forest landowner, you have the opportunity to shape the future of your land and leave a lasting positive legacy for future generations. Every forest landowner has unique goals and priorities. You get to decide. But you likely can't do everything, and certainly not all in the same place on your land, and not without careful planning.

Reflect on your values, goals, and aspirations for your forestland. Do you want to enhance wildlife habitat? Improve forest health? Create and maintain trails? Generate periodic income from exemplary forestry? Do you want to create a more valuable estate for your family/heirs or ensure that it will be conserved into perpetuity? Or do you simply want to protect its scenic or wild beauty? Your stewardship decisions will not only impact the health and vitality of your forest but also contribute to the broader landscape of Vermont's forests and their many benefits to you and to future owners.

Defining clear objectives will guide your stewardship efforts efficiently and help you measure success realistically. Be sure to articulate your objectives when working with forest professionals. The following chapters will guide you through a process for establishing your objectives and creating a vision of your forestland stewardship.

CHAPTER 2

A Brief History of Forests and People in Vermont

To gain a sense of how our forests have come to be the way they are, we must first look back on the history of forests and people over time. The history of land holding and ownership and land use in what is now Vermont is a complex and evolving narrative, shaped by Indigenous traditions, European colonization, and the American Revolution. Vermont's unique history, nestled between the claims of New York and New Hampshire, and later its independent governance as the Vermont Republic, has resulted in a distinctive pattern of land ownership and use that still echoes today on our forested landscape.

George Bosworth via Vermont Historical Society

Indigenous Land Stewardship

The story of human relationships with the land in what we now call Vermont stretches back thousands of years, encompassing far more than simply who has owned or controlled these territories. Understanding this deep history is essential for contemporary landowners to appreciate their role in an ongoing story of human-land relationships and to inform their stewardship practices.

For millennia before European contact, the peoples of the Wabanaki Confederacy developed sophisticated systems of land stewardship throughout N'Dakinna, their homeland, which includes present-day Vermont and parts of New Hampshire, Maine, and southern Quebec. The indigenous view of land emerges from a fundamentally different worldview than European concepts of ownership. In the Wabanki perspective, humans are seen as part of the natural world rather than separate from or dominant over it. This relationship is based on principles of reciprocity, responsibility, and respect, where the land is understood as a living entity with which humans must maintain balanced relationships.

The tribes of the Wabanki developed complex systems of ecological knowledge through careful observation and interaction with the land over countless generations. This knowledge encompasses understanding of forest succession, wildlife behavior, plant communities, and watershed dynamics. For example, they practiced sophisticated forest management techniques including controlled burning to maintain certain habitat types, particularly to support important food sources like deer and berries. These practices helped create the mosaic of forest types that European settlers encountered upon arrival.

Traditional indigenous land stewardship operated on multiple spatial and temporal scales. At the landscape level, they understood and worked with entire watersheds, recognizing the connections between upland forests, valley bottoms, and waterways. This watershed-based approach informed seasonal movements and resource use patterns that maintained ecosystem health while supporting human communities. At more local scales, they developed sophisticated understanding of plant and animal relationships, including medicinal properties of plants, wildlife behavior patterns, and sustainable harvesting practices

The intergenerational transmission of this knowledge occurred through practical experience, oral traditions, and ceremonial practices. Stories, place names, and ceremonies all carried important ecological information while also maintaining cultural and spiritual connections to specific places. This knowledge system wasn't simply about resource use, but about maintaining appropriate relationships with all aspects of the natural world

The relevance of these traditional knowledge systems to contemporary forest management cannot be overstated. Indigenous understanding of forest dynamics, wildlife habitat needs, and sustainable harvesting practices offers valuable insights for current conservation challenges. For example, traditional knowledge about the role of fire in maintaining certain forest types has informed modern forest management

practices. Similarly, understanding of watershed relationships provides important perspectives for current efforts to maintain forest connectivity and protect water resources

For today's land holders, understanding this history provides important context for their own stewardship practices. The land they now legally own has been shaped by thousands of years of careful observation and management by Indigenous peoples. This knowledge continues to be held and practiced by contemporary Wabanki people, who maintain active relationships with these lands despite centuries of displacement and disruption

Colonial Land Claims and the New Hampshire Grants

By the early 1600s, European explorers had begun venturing into the region, and by the mid-1700s, competing European powers, particularly the French and the British, began to occupy North America. The French had initially claimed much of the land that includes modern-day Vermont, but after the French and Indian War (1754–1763), the British gained control.

In the 1740s, British colonial governor Benning Wentworth of New Hampshire began issuing land grants in the area, claiming it for New Hampshire. These "New Hampshire Grants" were sold to settlers to establish farms and homesteads in what was then largely a wilderness. At the same time, New York also claimed the region, leading to land disputes as New York authorities sought to nullify the New Hampshire Grants, issuing their own titles to the same parcels of land.

The Green Mountain Boys and the Fight for Independence

The conflicting land claims between New York and New Hampshire led to tensions among settlers. Those who had purchased New Hampshire Grants resented New York's attempt to enforce its claims, and this discontent gave rise to the Green Mountain Boys, a militia formed in the 1770s under the leadership of Ethan Allen. The Green Mountain Boys defended the land rights of settlers with New Hampshire Grants, resisting attempts by New York authorities to evict them. The most famous example of their defiance was the seizure of Fort Ticonderoga in 1775.

The Vermont Republic

In 1777, settlers declared Vermont an independent republic, rejecting both New York and British authority. Vermont's constitution, notable for being the first in the U.S. to outlaw slavery and grant universal male suffrage (including non-landowners), was also progressive in how it handled land ownership. For fourteen years, Vermont operated as an independent nation—issuing its own currency and land grants—until it joined the United States in 1791 as the 14th state. This period helped solidify Vermont's identity as a place that valued independence, fairness, and self-reliance. It also began a major shift in the basic relationship between people and the land and philosophies of land ownership and use.

Post-Revolution Land Development

As the new state of Vermont joined the Union, land ownership expanded, and the state's rolling hills and fertile valleys attracted farmers, loggers, and mill operators. More than 80% of Vermont's land was cleared for agriculture during the 1800s, with sheep farming becoming especially popular in the early 19th century. The practice of clearing large tracts of forest for pasture dramatically altered Vermont's landscape, leading to deforestation.

However, by the late 19th and early 20th centuries, many farms were abandoned as sheep farming declined and farmers migrated to the Midwest, where land was more fertile and available. Concurrently, the Industrial Revolution during this period provided opportunities for lucrative manufacturing jobs in New England cities. There was a second "mass migration" of Vermont's population from rural farms as they moved to cities in pursuit of the wages and steady income available in factories and the urban growth they spurred. The extensive abandonment of farms resulted in reforestation of Vermont, as former farmland naturally returned to woods. By the mid-20th century, much of Vermont had re-emerged as a forested landscape, and the state's identity shifted once again to embrace its natural beauty and rural charm.

A Note on Historical Patterns of Wildlife Habitats and Populations

As the extent, nature, and condition of Vermont's forests, and human population changed over time, there were significant corresponding changes in wildlife habitats and populations. Deforestation activities of the 1800s not only altered the landscape, but also the composition of wildlife in the area. Species that require fields or open spaces (e.g. red fox, woodchuck) increased dramatically, and others such as the bobolink expanded into to the state during that time. Concurrently forest dwelling species declined dramatically due to a combination of habitat loss and unregulated harvest for profit or livestock protection. Fisher, American marten, wild turkey, and other forest dependent species were extirpated due to insufficient habitat, and others such as bear, deer, moose, mountain lion, wolf, and beaver disappeared due to overexploitation for food, fur, or livestock protection.

Beaver were an abundant keystone species in the early 17th century; they constructed extensive networks of ponds which cycled through stages of open water, mud flats, herbaceous meadow, and young forest, maintaining early successional habitat conditions along Vermont's thousands of miles of streams and rivers. By the late 1670s nearly a quarter million beaver had been shipped to London from the Connecticut River valley, and it's estimated that by the late 1600's unregulated trapping for their highly valued fur had eliminated (extirpated) beaver from the state. The population had not recovered in the late 1700s when farming began

to expand in Vermont, and deforestation during the 1800s eliminated any chance of the species returning for another century.

Following the late 19th century period of farm abandonment, the forests grew back, and many forest-dependent species returned while some field-dependent species have struggled due to lack of habitat. Along the way, wildlife biologists have also managed the reintroduction and recovery of several animal species, including white-tailed deer, American marten, wild turkey, peregrine falcon, bald eagle, fisher, and beaver. Our relationship with these species is complicated by their return to a landscape filled with roads, culverts and other infrastructure that create barriers to movement and fragment habitats. Road collisions are a major mortality source for wildlife, not only for mega fauna like deer and bears, but birds and insects too. Today, there is a need for a wide variety of connected forest habitats that can support animals that require open spaces and young forests as well as those that need dense, mature and old-growth forest habitats for survival.

Modern Land Ownership and Conservation

In the United States, land ownership is legally understood through a concept called "fee simple" ownership, which is the most complete form of ownership. Fee simple ownership gives the owner broad rights to use, control, and dispose of the land as they see fit, within the limits of the law (e.g., zoning, environmental regulations). These rights, however, are "severable," meaning different aspects of ownership can be separated and sold or leased independently. For example, one might own surface rights (for farming or building) while another party holds mineral rights (for oil or gas extraction), creating multiple interests in a single piece of property. Similarly, water, air, and even hunting rights can be severed from the land itself. Today, land ownership in the U.S. continues to emphasize personal control and economic rights, tempered by environmental and community considerations.

Vermont is known for its strong commitment to land conservation and sustainable use. A large portion of the state (approximately 85%) remains in private hands, and state and federal programs — such as Vermont's Use Value Appraisal Program — help encourage forest and farmland conservation through tax incentives for sustainable management. Additionally, Vermont's land trusts and conservation groups work to protect strategic parcels of land from development, maintaining the landscape that defines the state.

Land ownership in Vermont is now a blend of private and public stewardship, but the state's ethos of community responsibility, conservation, and appreciation for its natural resources — rooted in a respect for the land itself — is a

Vermont Fish & Wildlife Department

modern reflection of both Indigenous practices and the fierce independence of its colonial settlers.

Today, Vermont's forests cover 4.6 million acres, or approximately 75% of the state's land area, making them a defining feature of the landscape with a variety of forest types and conditions across the state.

USFWS

Forestland Condition and Health — critical context for stewardship decisions

Vermont's forests are generally in good ecological condition, but they face several significant stressors and threats. These include the increasing presence and harmful effects of invasive plants, pests, and pathogens. Invasive species can disrupt native ecosystems, causing damage to tree populations, degrading habitats, and altering natural processes. Another concern is the rising dieback and mortality observed in some tree species, along with decreased growth in others. Furthermore, forest regeneration (initiation and establishment of new seedlings in the understory) is increasingly failing, an issue worsened by many factors, including over-browsing from localized overabundance of deer and moose and competition from non-native, invasive plants.

The accelerating impacts of climate change are further compounding these problems. The disruption of ecosystem processes—from phenology (the timing of natural events) to hydrology (water cycle patterns) and species interactions—is occurring faster than forests can adapt, leading to far-reaching and still-emerging consequences. These disruptions are interconnected, creating a cascade of effects throughout the forest ecosystem.

Additionally, poorly-sited infrastructure from development is contributing to the degradation of forest health, with negative impacts radiating outward from construction sites. Fortunately, through thoughtful stewardship actions, landowners can help to lessen the impacts of many of these threats to our forests.

We will delve further into forest health and threats to it later in this guide.

Forestland Ownership — parcels and patterns of ownership

The majority of Vermont's forests (nearly 85%) are privately owned, stewarded by individual landowners, families, and timber management companies for various purposes. Public lands, including national forests and wildlife refuges, town forests, state parks, state forests, and state wildlife management areas, also play a crucial role in protecting and managing Vermont's forests for the benefit of all.

Every year, Vermont experiences a net loss of forestland. While estimates vary, approximately 5,900 to 12,500 acres are being converted on an annual basis to other uses, signaling a troubling shift in land management and increased challenges for conservation efforts.

On privately owned lands, general trends in ownership and real estate transactions indicate that larger parcels of land are increasingly being broken into smaller parcels over time. This phenomenon, called parcelization, typically occurs when land is subdivided. Parcelization is gaining momentum, and the development that often follows is contributing to forest decline in Vermont.

While just over 70% of the acreage in Vermont is still represented in parcels over 50 acres, from 2005 to 2020, the amount of acreage in large parcels declined across Vermont, and this correlated with a significant reduction in the amount of land classified as undeveloped forestland, or woodland. The majority of woodland loss was due to parcels shifting to the residential category, although some land transferred to public ownership, preserving the integrity of undeveloped forestland.

Depending on how parcelization and subdivision occurs on the landscape, the following impacts can result as development occurs:

- Forest fragmentation and land conversion, which can negatively affect plant and animal species, wildlife habitat, water quality, recreational access, and the ability of forests to sequester and store carbon, among other important impacts.
- The loss of management of forest parcels, which can reduce their productivity and contribution as working lands.
- An increase in the number of parcel owners, which may result in new buildings and infrastructure (roads, septic systems, utility lines, etc.), which can diminish the economic and ecological viability of forests depending on how it is designed and used.

Landowners have a choice when it comes to developing or subdividing land. As this guide will highlight, there are programs to help landowners lower their taxes and keep their land undeveloped if they wish. These programs are especially important since land values continue to rise in Vermont and it can be expensive to maintain undeveloped land over time.

CHAPTER 3

Promoting a Land Ethic: Responsibility and Inclusion

What is a Land Ethic?

A land ethic encompasses our fundamental relationship with and responsibilities to the land. For thousands of years, Indigenous peoples have maintained sophisticated ethical frameworks that view humans as part of, not separate from, the land community. For current forest landowners, this means recognizing that our individual parcels are part of larger, interconnected systems that have sustained communities for millennia, and understanding that land stewardship involves both ecological and social responsibilities. This includes learning from multiple ways of knowing – including Indigenous knowledge systems, ecological science, and local community wisdom. Whether your goals include conservation, sustainable resource use, or both, an inclusive land ethic provides a framework for making decisions that support both ecological and community health, considering impacts on wildlife habitat, water quality, and forest resilience alongside questions of access, cultural preservation, and equitable benefit-sharing.

This approach resonates with the land ethic advocated by conservationist Aldo Leopold, who emphasized the interconnectedness of humans and nature and called for a moral responsibility to care for the land. By adopting such an ethic, forest land holders can shift their perspective from viewing the land solely as a resource apart from themselves to recognizing their connection to it and its intrinsic value and role in supporting healthy, diverse, and functional plant and animal communities. Whether you plan to preserve forestland, utilize your land for various resources, or both, you are encouraged to develop a land ethic that incorporates responsible management and stewardship.

Family and Community Engagement: Building a Culture of Stewardship

Stewardship is not just an individual endeavor but a collective responsibility shared by families, communities, and society as a whole. Engaging with family members, neighbors, and fellow landowners can create a culture of stewardship that values the long-term health and sustainability of the land and our shared responsibility for it. Family involvement in forest management can provide opportunities for education, recreation, and bonding while instilling a sense of pride and responsibility for the land. Embracing a land ethic moves us from thinking about the forest as something we simply own to thinking about the role our forests play in the larger, connected functioning system on which we all depend.

The Value of Community Engagement

Engaging with the broader community can enhance the impact of your stewardship efforts, foster collaboration, and promote a shared commitment to conservation. By building relationships with neighbors, local organizations, and other stakeholders, you can create a network of inspiration, support and resources to help achieve your goals.

Creating truly sustainable forest stewardship requires acknowledging and addressing historical and ongoing barriers to land access and decision-making, while actively recognizing and protecting cultural heritage. While private forest ownership offers important opportunities for conservation, it exists within a broader context of land relationships that have often excluded many individuals and communities, particularly Indigenous peoples and people of color. This begins with building respectful relationships with Indigenous communities to identify and protect culturally significant sites, and developing formal agreements that enable traditional practices such as the harvesting of plants for medicine, food, or ceremonial purposes - practices that have been part of these landscapes for millennia. Meaningful change requires developing authentic, long-term partnerships with Indigenous nations and cultural organizations that extend beyond consultation to include active participation in community-led conservation initiatives. These efforts should

include protecting traditional place names and their histories, creating interpretive materials that accurately represent both Indigenous history and current presence, and ensuring forests are welcoming to people of all abilities through accessibility improvements. By incorporating diverse perspectives and knowledge systems, protecting culturally significant sites and species, and building authentic partnerships with historically excluded communities, forest owners can contribute to more just and sustainable land relationships. These partnerships, when developed thoughtfully and maintained over time, create stronger, more resilient networks for forest conservation that benefit all communities while enhancing both the ecological health of our forests and the social fabric that supports long-term conservation.

Building Partnerships with Local, Regional, and State Organizations

Partnering with local, regional, and statewide conservation organizations, watershed groups, and land trusts can provide access to valuable expertise, funding opportunities, and volunteer networks. These organizations often offer educational programs, technical assistance, and collaborative projects that can enhance your stewardship efforts.

Participating in Local and Regional Conservation Initiatives

Landowners also have opportunities to get involved in local and regional conservation initiatives, such as watershed planning, invasive species control, or habitat restoration projects. Consider volunteering for your town's conservation commission or town forest committee. By contributing to broader conservation efforts, you can amplify the impact of your stewardship activities and support the resilience of Vermont's landscapes. Once you are comfortable as a forestland owner and steward, you have the opportunity to share your knowledge and experiences with others. Consider hosting field tours, workshops, or community events to showcase your stewardship practices and inspire others to adopt sustainable land management approaches.

Ethical Considerations in Forest Stewardship

Beyond legal requirements, ethical considerations play a crucial role in responsible forest stewardship. These considerations extend from immediate land management decisions to broader questions of justice, access, and intergenerational responsibility. Landowners should recognize that their stewardship decisions affect not only their own property but also impact surrounding properties, communities, future generations, and the broader ecosystem. This includes understanding that forests provide essential benefits—from clean water and wildlife habitat to cultural resources and climate resilience—that extend far beyond property boundaries.

The ethical imperative to keep forests as forests reflects both ecological and social responsibilities. Forests represent multi-generational investments by nature and human communities in building complex, interconnected systems that, once lost, cannot be easily replaced. They hold cultural and spiritual significance for many communities, particularly Indigenous peoples whose relationships with these lands stretch back generations. When landowners choose to maintain and steward forestland, they help preserve these irreplaceable values and relationships.

Equity considerations are central to ethical forest stewardship. This means acknowledging historical injustices in land access and ownership, and working to ensure that forest benefits are shared more broadly. Landowners can advance ethical stewardship by:

- Supporting traditional and cultural uses of forest resources
- Creating inclusive access opportunities while protecting sensitive areas
- Sharing knowledge and resources with aspiring land stewards
- Protecting cultural and historical sites
- Contributing to broader efforts to support land justice and conservation

Balancing economic interests with ecological and social values requires careful consideration of both short-term needs and long-term impacts. While sustainable forest management can provide important economic benefits, ethical stewardship means ensuring that these activities don't compromise the forest's ability to provide crucial ecosystem services or cultural benefits.

Land Justice

Land justice recognizes that land is inseparable from issues of equity, history, and power. It acknowledges that current land ownership patterns in the United States reflect histories of dispossession, exclusion, and unequal access that have disproportionately impacted Indigenous peoples, Black communities, and other people of color.

Land justice seeks to address these historical and ongoing inequities by supporting Indigenous sovereignty, land return, equitable access to land and resources, and the dismantling of barriers that prevent Black, Indigenous, and People of Color (BIPOC) communities from owning, managing, and benefiting from land. It includes honoring ancestral relationships to place, recognizing multiple ways of knowing and relating to land, and creating pathways for healing and transformation in how we collectively steward the earth's systems.

For forest owners, embracing land justice means understanding the specific histories of the lands they steward, building relationships with displaced communities, sharing access and decision-making power, and working toward equitable opportunities for stewardship of land and resources.

CHAPTER 4
Getting to Know Your Land

Taking Stock: The First Step to Stewardship

Vermont Fish & Wildlife Department

To effectively and realistically steward your forestland, it's best to understand its basic characteristics and current condition, including things like the types of trees, soils, water resources, and wildlife habitats, as well as its history and how it came to be this way—and how it all connects. Taking stock of your forestland and keeping track of stewardship efforts and changes over time will help you make informed decisions about management approaches and practices. That said, building awareness at any level pays off. And there are many ways to do this.

Most forestland owners are not experts on forests and forest stewardship. Most rely on professionals for technical assessments and advice—which can take many forms in pursuit of many purposes—but all landowners can attain basic levels of literacy and corresponding increases in satisfaction and enjoyment of their land.

Perhaps you are not even sure how to start or what might be involved. Welcome to the club; this is how most of us began. It's best to first consider in broad strokes the big picture of your land. Then you can explore what assessing and learning about your forestland might involve, along with stewardship opportunities.

It begins with big-picture considerations: Exactly where is my land and how many acres is it? How much forest and field do I have? What do I want from and for my land? It can go in countless wonderful ways from there. It's ok if you don't exactly know what you want—or even what's possible—because the journey of forest stewardship starts with discovery. And there is a colossal amount of expertise available to you (some even free of charge or obligation) to help you uncover what aspects of your forest speak to you.

So, take that first step, which may differ for each landowner, and begin your journey of discovery and stewardship.

Getting Started – Exploring Your Woods

Take some walks in your woods and while you're at it, take some notes (and maybe some pictures too); jot down whatever comes to mind as you poke around. hen invite your county forester to visit. These experts can guide you around and interpret what's out there, answering your initial questions. They can refer you to workshops, programs, and webinars on forest management., and it's likely your neighbors can share their experience and understanding as well.

Once you've gained some familiarity with the basics of your forestland parcel, things like where the boundaries are and what's readily known about it—acreages, structures, waterbodies, trails, etc.—you have an opportunity for an ever-increasing understanding of what's inside the boundaries and between the trails. Wonderful and important things like vegetation types; timber resources; wildlife habitats; and soil, water, rock, historic, aesthetic, and recreational features.

Along the way, you can also grow your awareness of your options for forest stewardship approaches and activities, along a spectrum from passive or wild forest management to restorative practices to increase biodiversity or more active and productive uses to create important wildlife habitat or to produce wood products through diverse practices and projects.

Depending on your interests and objectives, the type, scope, and level of detail needed for your assessment may vary greatly. Again, it can be as simple as a basic awareness of your forest, but your stewardship engagement and impact — and rewards — will expand dramatically with increasing

Vermont Fish & Wildlife Department

understanding and knowledge. Remember, you don't have to become an expert, but building a general understanding of what forests are and how they work, also known as forest ecology, will provide a strong foundation. Eventually, it's best to have some form of written management or stewardship plan as discussed in greater detail in Chapter 9.

Forest Ecology 101: Embracing Forest Diversity, Dynamism, and Function

A forest is defined academically as an ecological system (or biotic community) dominated by trees. **Forest ecology** is the study of ecological systems and the mutual interactions between organisms and the environment. The primary objective of forest ecology is to understand what controls the patterns of distribution, abundance, and function of different organisms in forests. This is why forest ecology is at the heart of forest stewardship. It is an endlessly fascinating subject involving biology, geology, chemistry, and their interactions over time. There is certainly much to know but it's not necessary to know it all. A basic understanding of some fundamental ecological principles will be very helpful in seeing your forest for the trees and in your stewardship toward forest health and resilience.

First, it's important and helpful to realize that forests are characterized by variation and change, by pattern and process. They are not monolithic swaths of green, and they do not remain the same over time, whether we're managing them actively or not. And they are assuredly not just sitting there being beautiful. They are marvels of continuous function – from capturing sunlight in their leaves and pulling water and nutrients from the soil through their roots, to scrubbing carbon dioxide from the air and injecting oxygen into it. Through these functions, forests sustain biodiversity, stabilize climate, regulate water supply, enhance water quality, and attenuate floods.

Another fundamental and defining aspect of your woods is that your property is part of a larger landscape mosaic, connected by ecological processes such as water flow, nutrient cycling, pollination, and wildlife movement. Understanding your land's place within this broader landscape is essential for effective land stewardship and conservation planning. Mapping these connections and assessing landscape-scale dynamics can help you identify opportunities to enhance connectivity and protect critical habitats.

Put simply, because they are so active and dynamic, forests are perhaps better understood as a verb than a noun. Embracing this ecologic view of your forest will radically improve everything about your relationship with it, from your learning and understanding to your use and enjoyment of it.

So by way of background and to establish the fundamental importance of forest ecology as a basis for your ownership and stewardship approach, the following is a short primer on key concepts.

The Components of a Forest Ecosystem

Abiotic Factors: The Non-Living Environment

The foundation of any forest ecosystem lies in its abiotic, or nonliving, components. These factors create the conditions under which forests develop and function.

- **Climate:** The temperature, precipitation, and seasonal patterns of an area are critical in determining the types of vegetation that can grow there. Vermont's climate, with its cold winters and humid summers, supports a range of temperate forest types.
- **Soil:** Soil composition, structure, and fertility directly influence the types of plants that can thrive in a forest. Vermont soils are often rich in organic matter, providing nutrients for a diverse array of plant species.
- **Topography:** The shape of the land, including its slope, elevation, and aspect, affects sunlight exposure, water drainage, and microclimates within a forest. Steeper slopes might have well-drained soils, while valleys could have richer, more moisture-retentive soils.
- **Water:** Water availability, whether from precipitation, streams, or groundwater, is essential for all living organisms in a forest. Wetlands, riparian zones, and vernal pools are examples of water-rich environments that contribute to forest diversity.

Biotic Factors: The Living Components

The living and once-living components of a forest ecosystem include the plants, animals, fungi, and microorganisms that inhabit it. These organisms interact in complex ways, creating a web of relationships that sustain the forest.

- **Producers (Plants):** Plants are the primary producers in a forest ecosystem, converting sunlight into energy through photosynthesis. Vermont forests are home to a variety of tree species, including maples, oaks, pines, and hemlocks, each contributing to the forest's structure and diversity.
- **Consumers (Animals):** Animals in a forest ecosystem, from insects to large mammals, play roles as herbivores, predators, and decomposers. They contribute to nutrient cycling, seed dispersal, and population control of other species.
- **Decomposers (Fungi and Microorganisms):** Decomposers break down dead organic matter, returning nutrients to the soil and playing a crucial role in the nutrient cycle. Fungi, bacteria, and invertebrates are key decomposers in Vermont forests.
- **Interactions:** Species interactions, such as predation, competition, and symbiosis, shape the structure and function of the forest. For example, the mutualistic relationship between mycorrhizal fungi and tree roots enhances nutrient uptake for trees.

Forest Succession and Dynamics

Primary and Secondary Succession

Forest succession is the process by which a forest ecosystem changes over time, particularly following a disturbance.

- **Primary Succession:** Primary succession occurs in areas where no previous vegetation existed, such as on newly exposed rock or glacial deposits. It begins with pioneer species like lichens and mosses, which eventually lead to the development of soil and the establishment of more complex plant communities.
- **Secondary Succession:** Vermont forests are the result of secondary succession, which occurs after a disturbance (e.g., fire, logging, or windstorm) clears an area of existing vegetation. The process starts with fast-growing, light-loving species, such as birch and aspen, and gradually progresses to more shade-tolerant, longer-lived species, such as sugar maple and hemlock.

Disturbances and Their Role in Forest Dynamics

Disturbances are natural or human-caused events that disrupt forest ecosystems. While they may seem destructive, disturbances play a crucial role in creating opportunities for regeneration and maintaining biodiversity. They always have.

- **Natural Disturbances:** Events like windstorms, ice storms, and insect outbreaks are part of the natural cycle in Vermont forests. They create gaps in the forest canopy, allowing sunlight to reach the forest floor and enabling new growth. These openings are key to creating a mosaic of forest ages important for wildlife and forest resilience."
- **Human-Caused Disturbances:** Logging, land clearing, and development are examples of human activities that can alter forest ecosystems. While these disturbances can have negative impacts, ecologically focused forest management

practices are designed to emulate natural disturbance patterns and can mitigate these effects and promote healthy regeneration, growth, and function.
- **Resilience and Adaptation:** Forests have evolved to be resilient to disturbances, with species adapted to different types and frequencies of disturbances. Understanding the history of disturbances on your land can help you anticipate how your forest might change in the future and guide your management decisions. n excellent resource is help you decipher the clues on your land is Reading the Forested Landscape by Tom Wessels.

Forest Structure and Function

Vertical and Horizontal Structure

Think of forest structure as the three-dimensionality of your forest, from the ground up through various layers to the canopy above. It includes the pattern of sizes, spacing, and arrangement of trees—both living and dead, standing and down—and the related vegetation. The structure of a forest, both vertically and horizontally, influences its ecological functions and habitat quality and diversity. While the aesthetic of a clear, parklike understory may be visually appealing, it does not represent a healthy forest, nor is it good for wildlife.
- **Vertical Structure:** Healthy, fully-developed Vermont forests typically have multiple layers, including the forest floor, herbaceous layer, shrub layer, understory, mid-stories, and canopy. This vertical complexity provides different niches for various species, contributing to biodiversity.
- **Horizontal Structure:** Most forests also vary horizontally across the landscape, with patches of different ages, species compositions, and densities. This mosaic of habitats supports a wide range of wildlife and enhances the resilience of the ecosystem.

Nutrient Cycling and Energy Flow

Nutrient cycling and energy flow are fundamental processes that sustain life in a forest ecosystem.
- **Nutrient Cycling:** Nutrients like nitrogen, phosphorus, and potassium move through the forest in a cycle involving the soil, water, plants, animals, and decomposers. Decomposition of organic matter returns nutrients to the soil, where they are taken up by plants and passed through the food web.
- **Energy Flow:** Energy flows through the forest from sunlight to producers to consumers and eventually to decomposers. This flow of energy, originating from sunlight, drives all biological processes in the ecosystem.

The Role of Water in Forest Ecosystems

Water is essential to all living organisms and plays a critical role in forest ecology.
- **Hydrological Cycle:** The hydrological cycle, which includes precipitation, evaporation, infiltration, and transpiration/evaporation, regulates water availability and quality in the forest. Trees and other plants play a significant role in this cycle, influencing local and regional climates.
- **Water Resources:** Forests act as natural water filters, purifying water as it moves through the soil and into streams, rivers, and aquifers. Riparian zones, or the areas adjacent to water bodies, are particularly important for maintaining water quality and providing habitat for aquatic and terrestrial species. On the landscape, landowners should be looking for ways to slow, spread and sink water.

The Importance of Wildlife and Wildlife Habitat

Enhancing habitats, protecting wildlife, and fostering biodiversity in forestlands enriches our lives and provides a multitude of benefits for forests and people. When we help protect and enhance wildlife, wildlife returns the favor. There is a growing amount of scientific evidence to suggest that interactions with nature and wildlife provide significant benefits to people, including "positive effects on physical health, psychological well-being, cognitive ability and social cohesion."[2]

Vermont forests provide important habitat for a wide range of wildlife species, from songbirds and mammals to amphibians and insects. Unfortunately, wildlife face many threats, from habitat loss and fragmentation resulting from development, to climate change impacts such as extreme weather events and the spread of disease and invasive species. In addition, wildlife must adapt to varied and changing habitat conditions across landscapes and parcels under a variety of ownerships and management approaches.

USFWS

2 Source: https://pmc.ncbi.nlm.nih.gov/articles/PMC3709294/

Vermont's forests play an outsized role as something of a lynchpin in a larger regional and even global forested landscape. The forests of our region are part of the largest intact temperate hardwood forest in the world. Among other important roles, these forests hold global importance as breeding habitat for a significant suite of bird species. And within Vermont a connected, ecologically functional landscape is necessary for north-south and east-west movement of wildlife.

As with most things in your forest, there is a lifetime of learning that could be undertaken about wildlife and wildlife habitats, but a few basic principles will provide an excellent start and will take you far.

Fundamentals of Wildlife Conservation

(From VT Fish and Wildlife Department's Landowners Guide)

The Vermont Fish and Wildlife Department created an excellent publication on the basics of wildlife habitat conservation. The following is an excerpt from that publication.

Healthy forests are essential for high-quality and functional wildlife habitat. And high-quality habitats are essential for supporting diverse plant and animal communities, maintaining ecological processes, and preserving ecosystem services.

Four habitat components are needed for wildlife to survive: food, water, cover, and space. Even though all species need these habitat components, the amount and type of each required differs depending upon the species. Knowing the specific needs of each species (e.g., ruffed grouse), or group of species (e.g., forest songbirds) will allow you to provide the correct habitat components to meet their needs and your interests.

Landowners should consider the presence of habitat on adjacent lands to help guide management decisions for wildlife species. This is especially important to maintain habitat connectivity for wildlife species.

It is also important to consider how seasons influence the presence of wildlife. For example, much of Vermont is located within the Atlantic Flyway zone, so some migratory birds may only be present during parts of the spring and fall. As the seasons change, so does wildlife behavior, including mating, breeding, nesting, foraging or hunting, hibernation, migration, and other behavioral patterns. Knowing what types of wildlife may be present on your land throughout the year can help guide your management decisions.

The Role of Keystone Species

Keystone species are those that have a disproportionately large impact on their ecosystem relative to their abundance. In Vermont forests, certain species play critical roles in maintaining ecosystem balance.

- **Predators:** Top predators like bobcats and raptors help control populations of herbivores, which can prevent overgrazing and promote plant diversity.

- **Foundation Species:** Trees like sugar maple or white pine, which dominate the canopy and significantly influence the environment, provide habitat and resources for many other species.
- **Ecosystem Engineers:** Species like beavers modify the landscape by building dams and creating wetlands that support diverse communities of plants and animals.

Biophysical Regions

Owing to differences in climate, geology, soils, topography, elevation, hydrology, and land-use history, Vermont's forests are incredibly diverse. We have nine broad biophysical regions that reflect this underlying diversity and support nearly one hundred distinct natural community types, ranging from northern hardwoods and spruce-fir forests to cedar swamps and floodplain forests.

Biophysical regions are geographic areas that are defined by their unique combination of climate, geology, topography, soils, and natural communities of plants and animals. These regions help us understand the diversity of natural ecosystems in a state or area, including the plants that grow in these regions, and the animals that reside there. In Vermont, there are nine recognized biophysical regions, each with its own distinct natural characteristics. These regions are described in detail in Wetlands, Woodlands, and Wildlands: A Guide to the Natural Communities of Vermont, providing insight into the state's geological history and ecological diversity.

Here is a brief description of each of Vermont's nine biophysical regions:

1. Champlain Valley

- **Location:** Northwestern Vermont, along Lake Champlain.
- **Characteristics:** The Champlain Valley is one of the warmest and driest regions in Vermont, with relatively fertile soils. This region is characterized by a mix of farmlands, wetlands, and forests, including unique sandy pine-oak-heath forests. The valley is known for its rich agricultural history and diverse wildlife habitats.

2. Taconic Mountains

- **Location:** Southwestern Vermont, running parallel to the Green Mountains.
- **Characteristics:** These mountains are lower and geologically distinct from the Green Mountains. The Taconics have a bedrock base of limestone, which supports calcareous wetlands, rich northern hardwood forests, and numerous rare plant species.

3. Southern Vermont Piedmont

- **Location:** Southern Vermont, between the Green Mountains and the Connecticut River.
- **Characteristics:** The Southern Vermont Piedmont (foothills) is a rolling landscape of hills and valleys. Its climate is moderate, and the region supports diverse natural communities, including northern hardwood forests and wetlands.

4. Green Mountains

- **Location:** Central Vermont, running north-south through the center of the state.
- **Characteristics:** The Green Mountains are Vermont's most prominent mountain range, with cooler weather and higher elevations. The forests here are primarily northern hardwoods at lower elevations, transitioning to red spruce and balsam fir at higher elevations. Alpine communities, including rare tundra-like ecosystems, can be found at the highest peaks.

5. Northern Vermont Piedmont

- **Location:** Northeastern Vermont, bordering the Northern Green Mountains.
- **Characteristics:** This region features rolling hills, valleys, and low mountains. It has a cooler climate than the Southern Piedmont, supporting a variety of natural communities, including northern hardwoods and spruce-fir forests.

6. Northern Green Mountains

- **Location:** Northern Vermont, north of the main Green Mountain range.
- **Characteristics:** The Northern Green Mountains include some of the highest peaks in Vermont. This region is colder and wetter than other parts of the state, with a predominance of boreal forests of red spruce and balsam fir. Highest elevations support alpine and subalpine communities, which are exceptionally rare in Vermont.

7. Vermont Valley

- **Location:** Southwest Central, runs parallel to the Taconic Mountains, between the Taconics and the Green Mountains.
- **Characteristics:** The Vermont Valley is a relatively narrow region with a warmer, drier climate compared to surrounding areas. It includes fertile farmlands and rich hardwood forests, often on limestone-based soils. Wetlands and floodplains along rivers are common features of this region.

8. Northern Vermont Highlands

- **Location:** Northeast corner of Vermont, including much of the "Northeast Kingdom."
- **Characteristics:** The Northern Vermont Highlands are one of the coldest and most remote parts of the state, dominated by low mountains and extensive forests. This region is rich in wetlands, spruce-fir forests, and northern hardwoods. It is a sparsely populated area with large tracts of undeveloped forestland.

9. Southern Green Mountains

- **Location:** Southern Vermont, south of the main Green Mountain range.
- **Characteristics:** The Southern Green Mountains are similar to the northern range but slightly warmer. The forests here transition from northern hardwoods to red spruce and balsam fir at higher elevations. This region also includes significant tracts of protected land, including the Green Mountain National Forest.

These nine biophysical regions collectively encompass Vermont's rich ecological diversity, helping landowners, conservationists, and scientists understand the landscape's natural communities and how to manage and protect them.

Vermont Conservation Design – A Framework for Understanding and Conserving an Ecologically Functional Landscape

Vermont Conservation Design (VCD) is a strategic, science-based approach to conserving Vermont's forests, wildlife, and natural ecosystems, developed by the Vermont Fish and Wildlife Department and many partners. It provides a framework for prioritizing features that are needed to maintain an intact and connected landscape for biodiversity and ecological function, providing resilience against threats like climate change, invasive species and habitat fragmentation. Priority features include unfragmented forest blocks, surface waters, and riparian areas, distributed in functional linkages across all biophysical regions, and embedded within a larger matrix of working farms and forests and human settlements.

Natural community and habitat features are smaller, special places such as hemlock forests, rich fens, young forests, old-growth forests, aquatic communities, grasslands, or caves. These all support particular species or ecological functions and are key components of VCD. They occupy a relatively small area, but often benefit from more specific management or conservation strategies.

Overall, the goal of VCD is to to identify and map features needed to maintain an intact and ecologically connected and functional landscape. Resilient ecosystems benefit both nature and Vermont communities by supporting diverse wildlife, clean water, recreational opportunities, and many other services.

Key Features of Vermont Conservation Design

- **Ecologically Significant Habitats:** VCD identifies priority areas that are essential for biodiversity, such as interior forest blocks, riparian areas, wetlands, and wildlife corridors. These areas provide habitat, promote species movement, and connect large forested regions.
- **Forest Blocks and Connectivity:** Large, connected forest blocks are essential for wildlife that need expansive territories, like moose and bobcats. They also reduce the impact of habitat fragmentation, supporting biodiversity and ecosystem functions like carbon storage and water filtration.
- **Natural Communities and Climate Resilience:** VCD highlights specific natural communities (e.g., northern hardwood forests, floodplain forests) that are vulnerable to climate change, but play key roles in maintaining forest health. By conserving these areas, forestland owners help Vermont's forests adapt to changing conditions.

Vermont Conservation Design identifies the importance of old-growth forests as a critical component of ecological health and biodiversity. Old-growth forests in Vermont are defined as forests that have developed over long periods without significant human disturbance, showcasing unique ecological characteristics, including large, mature trees; multi-layered canopies; significant amounts of deadwood (standing and fallen); and an uneven-aged structure where trees of varying ages coexist.

These forests, which typically take approximately 150 years to develop, are exceptionally rare in the state and hold immense ecological, scientific, and cultural importance. VCD calls for allowing a minimum of 9% of Vermont's forests to become old forests, with a higher amount (15%) represented in the state's highest priority forest blocks.

According to VCD, old forests, also known as late-successional or old-growth forests, play several essential roles:

1. **Biodiversity Support:** Old forests provide unique habitats that support a diverse range of plant and animal species, some of which are specially adapted to the complex structures found in these mature ecosystems.
2. **Ecological Processes:** They contribute to important ecological processes such as nutrient cycling, carbon storage, and water regulation, which are essential for maintaining healthy landscapes and mitigating climate change impacts.
3. **Resilience and Connectivity:** Old forests add resilience to the forest ecosystem, making it more adaptable to disturbances such as climate change and disease outbreaks. They are also critical for landscape connectivity, allowing wildlife to move through connected forested areas and maintain genetic diversity.
4. **Rare Habitats:** VCD highlights that old forests have become rare due to historical land use. The conservation of these areas is a priority to ensure that Vermont maintains a representative sample of old-growth characteristics across its landscape.

Vermont Conservation Design (VCD) also recognizes young forests as an important part of a healthy and diverse landscape. While old forests provide unique ecological benefits, young forests also play an important role in supporting biodiversity and contributing to the overall resilience of forest ecosystems. Here's what VCD emphasizes about young forests:

1. **Wildlife Habitat:** Young forests, or early successional habitats – especially those with complex structures and mixes of species – are crucial for a variety of wildlife species, including certain birds, mammals, and insects that depend on dense, shrubby vegetation. Species such as the chestnut-sided warbler, American woodcock, and New England cottontail thrive in these environments, which provide cover and abundant food resources.
2. **Diversity and Ecological Balance:** Maintaining a mix of forest ages—including young, mature, and old growth—ensures we are providing for the diversity of species. This age-class diversity helps ensure that a wider range of ecological needs is met across the landscape.
3. **Forest Regeneration:** Young forests are a natural part of the forest lifecycle, emerging after natural disturbances like windstorms or fires, or from active management.
4. **Conservation Goals:** VCD encourages the thoughtful integration of young forest habitats into conservation planning. While young forests can be created both through natural disturbances and active management, they may be underrepresented compared to historical levels. While there are varying levels suggested in the scientific literature to manage as young forests targets, VCD calls for managing 3-5% of Vermont's landscape as young forests to support native species that utilize this habitat.

Vermont Fish & Wildlife Department

If you are interested in this introduction and are curious about how your land fits in, we encourage you to read more about Vermont Conservation Design on the Vermont Fish & Wildlife Department's website[3] and in the resources listed in Appendix 3.

Climate Change and Forests

While we know that healthy, intact forests are critically important in conferring resilience and mitigating the effects of climate change, climate change itself is also having profound impacts on Vermont's forestlands, affecting their health, function, and productivity. As temperatures rise and precipitation patterns shift, forest ecosystems face disruptions that outpace their natural ability to adapt. Warmer winters, for example, have allowed invasive pests to survive and spread more easily, threatening tree species that were once resilient to such challenges. At the same time, shifts in seasonal cycles—such as earlier springs and later falls—are altering species interactions, including the timing of leaf emergence, flowering, and the availability of food sources for wildlife. These changes are also affecting water systems, with more intense storms leading to increased runoff and soil erosion, and drier conditions in the summer causing stress on both young and mature trees.

In subsequent chapters we will explore further options and strategies for stewarding and managing forests in the face of climate change.

Understanding forest ecology is helpful, if not fundamental to becoming a responsible and effective steward of your forestland. By grasping the basic principles of how forest ecosystems function, you can better appreciate the complexities of your land, make informed management decisions, and ensure that your forest remains a healthy, vibrant, and sustainable part of Vermont's natural heritage. Whether your goal is to conserve wildlife, grow healthy trees and produce firewood and timber, simply enjoy the natural beauty of your forest or all of the above, a solid foundation in forest ecology will guide you in making choices that benefit both your land and the broader environment.

Actions and Next Steps

- Plan regular walks on your property to observe changes, take notes, get off the trail and familiarize yourself with its features—such as tree species, water resources, wildlife signs, and potential management needs. Use this time to identify areas of interest or concern, and document what you see with photos or sketches for future reference.
- Reach out to your county forester or local conservation organizations for guidance, technical assessments, and advice tailored to your land's characteristics.
- Attend workshops, webinars, or field days focused on forest ecology, forest and wildlife management practices, and conservation strategies.
- Review chapters and resources on forest ecology, succession, and landscape connectivity to better understand your land's natural processes.
- Explore online guides, mobile applications, videos, or printed materials to build foundational knowledge at your own pace.
- Set goals to clarify what you want from your land—whether it's wildlife habitat, timber, recreation, water protection, or a combination—and write down your priorities.
- Consider how your goals align with the principles of sustainable management and the landscape context outlined in Vermont Conservation Design.

3 https://vtfishandwildlife.com/sites/fishandwildlife/files/documents/Conserve/VT%20Conservation%20Landscape-level%20Design/Vermont-Conservation-Design-Summary-Report-February-2018.pdf

CHAPTER 5

Leaving a Forest Legacy: Keeping Forests as Forests Beyond Your Tenure

VNRC

As exciting as it is to take ownership of a piece of Vermont forestland, it can be daunting to think about the fate of your land well down the road and past your tenure of ownership. But it is important, even as you are just beginning. There will come a time when you begin to wonder what will become of this place after you're gone. Will it remain the beautiful forest that you are so excited and curious about now? What if you suddenly or unexpectedly need money? Will your children or heirs want, or be able to, hold onto the land after your ownership ends? Or will financial or other pressures force you or them to sell or subdivide? You, and your land would be well served by your thinking about these issues now, versus waiting. You have an opportunity to help your heirs or future owners enjoy the forestland as you do and continue the many important values and benefits it provides.

You certainly cannot predict the future but you can surely make preparations beforehand. There are a few basic recommended strategies, and expert advisors, who can help you to:

1) Understand the major forces that lead to sale or subdivision (typically this means not managing your taxes effectively, pressure to generate income, or failure to plan for the future ownership of your land);
2) Explore ways to avoid or counteract these forces;
3) Choose strategies that best work for you, your family, and your circumstances; and
4) Implement them.

Major Drivers of Property Transfer

There are many reasons and forces for land transfers – demographics, economics, lifestyle established elsewhere, etc. Typically the sale of land occurs when the value of keeping the property is less than the cost (or value) of selling it. Sometimes, various taxes are significant drivers, including:

- **Property Taxes (state):** Property taxes are likely the most common reason that forestland owners are unable to retain their lands. These taxes may become prohibitive especially for younger owners or those on fixed incomes especially if the land is not enrolled in a tax abatement program such as Use Value Appraisal (UVA).
- **Estate and Inheritance Taxes (federal and state):** Estate taxes can be burdensome when property is passed from one generation to the next. Payable by the heirs when the value of inheritance exceeds certain thresholds, this can lead to liquidation of the property to meet the new owners' expenses, unless a plan is in place to minimize these taxes.
- **Income Taxes (state and federal):** Income from forest based goods produced on the property, or from the sale of any portion of the property are taxable. These taxes may add extra burdens on new owners who wish to continue timber harvesting or other income-producing activities on the land.
- **Gift Taxes (federal):** Some gifts of land or interests in land may be subject to this tax.
- **Lack of Planning:** If your heirs do not know your wishes and there is no plan to transition the land to their care, they may be forced to make a decision quickly while in the process of grieving.

It is recommended that you seek professional advice in understanding potential tax implications of your ownership and management, and explore different strategies to determine which strategies are best suited to your particular situation and needs. Assistance is available from a variety of sources such as conservation organizations, state agencies, personal tax attorneys, accountants, and other planners and service providers.

Once land is divided, it rarely reconnects. The following sections of the guide discuss conservation or stewardship tools and programs to maintain the integrity of your forests over time.

Legal Land Conservation: Securing Long-Term Protection

Conserving forestland includes—at least potentially—all of the stewardship and management activities, big and small, that help keep forests healthy, functioning, intact and connected. This includes everything from basic forest literacy to deep, active engagement in habitat enhancement, forest management, and water quality protection. Sometimes this is called "Big C Conservation," or the totality of the conservation toolkit of strategies, tactics, and activities that keep forests as forests.

Included within all those great elements of the Big C conservation toolkit is what are sometimes called "Little c conservation," or the legal mechanisms used to protect forestland parcels longer-term from being subdivided and "developed" or converted to non-forest condition and use. For our purposes, we'll call this Little c conservation approach, "legal land conservation."

Legal land conservation mechanisms are extremely powerful tools for protecting biodiversity, sustaining natural resources, and maintaining the scenic beauty of our landscapes. These mechanisms contribute not just ecological, but also economic benefits to Vermont's forests over the long term. Legal land conservation also offers a range of significant benefits for forestland owners, including financial incentives like tax benefits, and the peace of mind that comes with knowing that the land will be protected for future generations.

One common legal land conservation tool is the conservation easement, a legal agreement between a landowner and a qualifying conservation organization recorded in the land records that permanently restricts certain uses of the land to protect its conservation values. Conservation easements can be tailored to meet the specific needs and goals of the landowner, whether they seek to protect wildlife habitat, working lands, wild land, maintain scenic views, safeguard water quality or all of the above.

Conservation Easements: Tools for Permanent Protection

Conservation easements are legally binding agreements that, while keeping the parcel in your ownership, restrict certain land rights and uses to protect overarching conservation values. They can provide numerous benefits, including:

- **Permanence:** Easements protect your land in perpetuity, ensuring it remains undeveloped and managed according to conservation purposes and goals. Landowners continue to own, manage, and pay taxes on the land and can sell their land; however, the conservation easement permanently remains on the property and travels with the deed.
- **Voluntary:** A conservation easement is strictly a voluntary, albeit permanent, agreement between a landowner and a qualified conservation entity, like a land trust or government agency. It is entirely up to a landowner whether to permanently conserve their property, and with whom they would like to partner with to hold the easement.
- **Flexibility:** Easements can be tailored at the outset to meet your specific objectives and allow for compatible land uses, such as sustainable forestry, passive or restorative forest management, agriculture, recreation, or in some cases even limited development.
- **Financial Incentives:** Easements may offer financial benefits, including direct payments to you for giving up certain rights and uses, a reduction in estate tax liability, a charitable tax deduction, reduced property taxes, and potential funding for land management activities.

Conservation easements have successfully protected hundreds of thousands of acres of land in Vermont and millions of acres of open space in the United States. They can minimize (and even permanently halt) the subdivision and fragmentation of forestland and enhance the quality of life for landowners and the community at large. If you are interested in leaving a lasting conservation legacy for your land, the conservation easement is the most durable tool available.

It is always worth discussing easements with your local or statewide land trust, local NRCS Service Center, and county forester if you are interested in exploring the option. If the land trust's capacity is limited at that time, they may help you identify a shorter term easement program such as UVA or a forest carbon program, to put in place until their capacity is greater. The great thing about estate planning is that it can evolve and be updated as your life and other circumstances do.

Land Trusts and Other Conservation Organizations

Partnering with land trusts and other qualified conservation organizations can provide valuable support and expertise in navigating legal land conservation options. These organizations serve as partners to you and can assist with the creation and stewardship of conservation easements, provide funding opportunities, and offer technical assistance for habitat restoration and forest management. Land trusts accommodate different management goals, such as conserving working or wild forests, so partner with a land trust that will advance your long-term goals.

Generally, a land trust will accept a voluntary conservation easement by donation if the property meets the land trust's conservation criteria. In some circumstances, a land trust may purchase the conservation easement for a fee. NRCS also offers financial compensation for their easement programs, which can be either short-term or in-perpetuity. The easement is drafted with the help of several professionals, and once completed, the easement document will be recorded in the town's land records. Essentially, once recorded, the

easement is permanently attached to the deed of the property, and any potential buyer of the property that performs a basic title search will see the easement.

The easement holder or land trust will perform long-term monitoring functions. They will draft a baseline report, which includes a description of the property and resources and an assessment of the state of the property when the easement is granted. The easement holder also conducts periodic monitoring by making regular visits to observe your conserved property.

Some land trusts specialize in helping landowners if they are interested in transferring their land to their community as a town forest, or a state or federal agency to be managed as public land, such as a state or national forest, or wildlife management area.

How Do I Decide Which Entity Should Hold the Conservation Easement?

Landowners should look for the following characteristics in a conservation partner: First, the entity must be a qualified 501(c)(3) land trust organization or a public agency. Second, the organization must be a good fit with the land values and goals of the property owner. Third, in the case of a land trust, the landowner should research whether the organization has the means and resources to continue its operation in perpetuity and whether a contingency policy exists for future oversight should the land trust cease to exist.

In the past few years, the national Land Trust Alliance has created accredited status to land trusts across the country after a rigorous due diligence process. This accreditation conveys to landowners and supporters the strength and effectiveness of the land trust organization. Many land trusts have become accredited and others are considering when it would be most appropriate for their organization to apply for accreditation as they balance accreditation with their other program activities.

Legacy/Succession Planning: Passing the Torch to Future Generations

Planning for the future involves more than just managing the land; it also requires preparing for its eventual transition to the next generation of stewards. Legacy planning, also known as succession planning, is the process of developing a strategy for passing forestland to future generations in a manner that aligns with the landowner's values, goals, and objectives. It is an important consideration if you are interested in influencing the future management and potential conservation of your land, and especially important if you wish to involve others (such as children or siblings) in your plan. This is best considered early in your ownership and can be changed in the future if necessary.

Legacy planning may involve a variety of considerations, including estate planning, tax planning, family communication, and long-term land stewardship. These kinds of decisions can be challenging, but if you choose not to plan, you are leaving difficult decisions for your successors while also creating uncertainty that your forest will remain as you would hope.

There are a variety of tools to help you navigate legacy or succession planning. *For the Future of Your Forest: A Vermont Landowner's Guide to Woodland Legacy Planning,* a publication developed by Vermont Woodlands Association, Vermont Coverts and the Vermont Housing and Conservation Board, is designed to help forest landowners conduct legacy planning. Though no two situations and circumstances may be alike for forest landowners there are some basic concepts that provide helpful guidance for anyone.

Your strategy may include legal instruments, such as a trust in addition to a will. It may also involve building personal connections — sharing with future stewards all that you treasure about your land, and including them in its management and planning so they are prepared to take the helm when the time comes. Your forest succession plan should be enforceable enough to ensure that your values and land ethic, the ethics and beliefs you have about caring for the land, are indeed passed forward.

Planning for the Future of Your Woodland

Thinking ahead about the future of your woodlands—can make all the difference for your land and your legacy. Legacy planning is the process of deciding how your land will be passed on and how it will be cared for in the future. At its heart, it's about putting in place mechanisms to prevent your land from becoming developed in the future.

Getting started with creating a plan begins with answering these questions:

- Do you want to have a say in who owns your land in the future?
- Do you want to influence how your land is used and cared for after you're gone?
- How will you and others make decisions about your land's future?

Your answers to these questions may lead you to create legal tools like a will, trust, or conservation easement. But just as important is building personal connections—sharing what you love about your land and involving future stewards in its care now, so they're ready to step in later.

This process takes thought, communication, and sometimes professional help. But taking that first step now can offer peace of mind and lasting benefits—for you, your family, and the land you love.

Intermediate-Term Options: Current Use and Carbon Management Agreements

In addition to traditional estate planning strategies, landowners can explore less-permanent conservation options such as enrolling their land in the Use Value Appraisal (Current Use) program or participating in carbon management agreements. These programs offer financial incentives for maintaining the ecological integrity of the land while landowners are enrolled.

Vermont's Use Value Appraisal Program

Vermont's Use Value Appraisal (UVA) program, also called "Current Use" or "Land Use," enables landowners who keep their land undeveloped and practice long-term forest management to have their enrolled land assessed for property taxes based on its value for forest management rather than its fair market (development) value. This can result in significantly lower taxes on enrolled land. The program's goal has been to keep forests as forests, and it provides a mechanism for fair taxation for those landowners who make the commitment to maintain their forests.

To qualify for the UVA program, parcels must contain at least 25 acres that will be enrolled as Managed Forestland, and must be managed according to a forest management plan approved by a county forester from the Vermont Department of Forests, Parks and Recreation. Managed Forestland includes productive forestland; ecologically significant areas; land with unproductive soils; some open or idle agricultural land; and, as of 2023, reserve forestland. Landowners do not need to enroll their entire parcel in the program; indeed, some parcels and some acres within parcels may be ineligible for enrollment because of existing dwellings or non-conforming uses. Excluded acres will continue to be taxed at the fair market value.

Productive Forestland

Parcels enrolled in the productive forestland subcategory must be managed for long-term production of forest products, but objectives including wildlife habitat, aesthetics, recreation and watershed protection are acceptable when consistent with and complementary to timber management.

If they meet certain on-the-ground ecological criteria, some lands may benefit from being managed for forest products using an expanded range of management options to support qualifying significant wildlife habitats, special places and sensitive sites, or the conservation values of miscellaneous inclusions of one acre or less.

Ecologically Significant Treatment Areas

Ecologically Significant Treatment Areas (ESTAs) are options for owners who want to manage for the protection of significant ecological sites. ESTAs are portions of your forestland that are identified and documented as having special ecological, geological, or cultural significance. These could include wetlands, vernal pools, rare plant habitats, or other areas that are crucial for biodiversity. ESTAs do not necessarily need to be managed for timber (although they can be), but they do require that protective, conservation measures be described in the plan and implemented in the woods.

Reserve Forestland

The Reserve Forestland subcategory is designed for forested land managed with a primary purpose of accrual and protection of old-growth forest functions, values, and associated characteristics. Reserve Forestland is not a "do nothing" enrollment option, and often requires restorative management strategies such as invasive plant control and the restoration of hydrologic function.

What Happens if You Leave the UVA Program?

There are significant financial penalties for subdivision, development, or unapproved management practices for those enrolled in UVA. When landowners enroll land in the program, the State records a contingent lien on the property. This lien guarantees that Vermont can collect the Land Use Change Tax if the land is developed. Currently, this tax is 10% of the full fair market value of land that is withdrawn and developed or managed contrary to program requirements. The Land Use Change Tax helps discourage speculative development and encourages long-term conservation.

Is the UVA Program Right for You?

If you own forestland in Vermont and are interested in reducing your property taxes while committing to sustainable land management, the UVA Program could be a good fit. It offers significant financial benefits while also supporting the conservation of Vermont's forested landscapes.

Interested landowners are strongly encouraged to learn more about the program - including details on eligibility, the application process, ongoing responsibilities, and the penalties of withdrawl - by contacting their local county forester or consulting the Vermont Department of Forest, Parks and Recreation resources listed in Appendix 3

Carbon Offsets and Credit Programs

Forest carbon credit and offset programs are designed to incentivize landowners to manage their forests in ways that capture and store carbon dioxide (CO_2) from the atmosphere, helping to mitigate climate change. Forests naturally sequester carbon as trees grow, and carbon offset programs allow landowners to generate carbon credits by adopting practices that enhance this carbon storage. These credits can then be sold to companies or individuals seeking to offset their own carbon emissions.

The basic concept behind forest carbon programs is that landowners agree to manage their forestland sustainably,

either by extending the time between timber harvests, planting more trees, or improving forest health and growth rates. In return, they earn carbon credits based on the amount of CO_2 their forests sequester over time. Buyers, often corporations or governments, purchase these credits to offset their carbon emissions, helping them meet regulatory requirements or voluntary climate goals.

For landowners, participation in these programs provides a financial incentive for conservation and sustainable forest management, often creating an additional revenue stream beyond traditional timber harvests. However, participation typically comes with long-term commitments to maintain these forest management practices, along with some limitations on management practices and time frames and rigorous monitoring and reporting requirements to verify carbon sequestration. Forests enrolled in Use Value Appraisal (UVA) may also be eligible for enrollment in a carbon offset market; in fact, the pre-existence of an approved forest management plan can expedite the development of a carbon offset project. Selling carbon does not automatically invalidate the UVA program criteria, but any adjustments to the FMP necessitated by enrollment need to be approved by the county forester.

Carbon offset and credit programs are relatively new and they are complex and still evolving. You can read more about them in the resources listed in Appendix 3.

Vermont Woodlands Association

Keeping Forests as Forests Beyond Your Tenure

As stewards of Vermont's forests, the responsibility to ensure their futures might feel daunting, but it is also a profound opportunity. Planning for the future of your forestland goes beyond addressing immediate needs—it's about crafting a legacy that aligns with your values and environmental ethos. By exploring and implementing various strategies, such as conservation easements or enrolling in programs like Use Value Appraisal, you have the power to shape the ecological health and continuity of your land for generations to come.

Moreover, engaging in legacy and intermediate-term planning not only safeguards your forest's ecological integrity, but it also conveys your commitment to the broader community. Ensuring that these lands remain resilient, undeveloped, and productive reflects a dedication to preserving Vermont's natural heritage. As you consider these strategies, seek advice from conservation professionals or land trusts to tailor your approach to your unique circumstances. Begin dialogues with your family or potential successors to instill a shared vision of stewardship. Through careful planning and proactive engagement, you can pass on not just land, but a thriving woodland legacy that will continue to support biodiversity and enrich lives well into the future.

Actions and Next Steps

- Determine if you are ready to plan the long term-stewardship of your land and start by reading For the *Future of Your Forest: A Vermont Landowner's Guide to Woodland Legacy Planning.*
- If you are interested in conserving your land, reach out to a local or statewide land trust to understand how conservation easements work, and how they can benefit you and your family.
- If your land is not enrolled in the Use Value Appraisal Program, talk to a county forester or consulting forester to understand whether the program is a good fit for you.
- To better manage your land for carbon, educate yourself about the different programs, some of which are listed in the Resources Section in the Appendix.

Case Studies and Success Stories: Learning from Fellow Landowners

Hearing from fellow landowners who have successfully navigated the challenges and opportunities of forest stewardship can provide valuable insights and inspiration. Case studies and success stories highlight the diverse approaches and strategies that landowners have employed to achieve their conservation and management goals.

These stories illustrate the real-world impact of stewardship actions, from conserving land to improving wildlife habitats to managing for carbon. By learning from the experiences of others, landowners can gain practical knowledge and motivation to embark on their own stewardship journeys.

LANDOWNER CASE STUDIES

Allan Thompson

The Land:

30 acres of forested land, including a pond, house and yard in Waterbury, VT

When Kathleen O'Dell learned of her terminal illness, she decided to plan for the transfer of her assets to her three sons: Allan Thompson and his two brothers, at the time in their early twenties. Kathleen owned the family house and land in Waterbury and decided to organize the transfer of her assets to her sons through the establishment of a living trust and a will. She got in touch with her family lawyer Jeff Kilgore, and had the necessary legal documents drafted. This required extensive work and precise identification and classification of her assets, a task with which her lawyer was very helpful.

As Kathleen knew she was going to die while her children were still young, the trust was designed to have a predictable distribution of assets through time: one third would be distributed on the year of Kathleen's passing, one third five years later, and the final third 10 years later. Upon her death in 2005, Allan and his two brothers became the beneficiaries of the trust. In 2010, it became apparent that out of the three brothers, Allan was the only one who was really spending time on the property, yet the fiscal burden of the property was shared equally among him and his brothers. When Allan showed interest in taking over the land and the house, the three brothers met and talked about the best way to go about it. After lengthy discussions where all three brothers worked hard at communicating their intent for the land the best they could, they unanimously decided that Allan would be written out of the trust and would buy his two brothers out at a mutually agreed upon, fair price. The land and the house are now co-owned by Allan and his partner and it is Allan's responsibility to live up to the conservation intentions of the trust and be a good steward. Allan believes that being a good caretaker comes with the responsibility of owning land.

Actions:

- Drawing of a will;
- Setting up a living trust with specific timeline restriction to organize progressive asset transfer to heirs;
- Enrollment in the Current Use Program and forest management plan alleviating the tax burden and allowing the owners to keep the land undeveloped;
- Land purchase at a mutually agreed upon, fair price from family members;
- Family agreement that Allan would live up to the conservation intentions of the trust and be a good steward of the land.

LANDOWNER CASE STUDIES

Putnam Blodgett

The Land:

670 acres of woodlands in Bradford, VT

Courtesy Put Blodgett

Put Blodgett had a long-standing relationship with his land. Put bought the land that he grew up on from his parents in 1953.

After several years operating it as dairy farm, the meadowland was sold and Put started a summer camp, spending long hours canoeing and hiking through the woods. Put enrolled his land in the Current Use Program in 1980, which enabled him to resist the fiscal pressure associated with owning land in Vermont and allowed him to hold on to it.

In the mid '90s, as Put considered his land to be his lifetime's work, he decided to donate a conservation easement to the Upper Valley Land Trust. He chose the Upper Valley Land Trust because of his close connections with the organization and he felt in agreement with its stated purpose. This easement ensures that the land can be used for forestry, in compliance with a forest management plan, while restricting further subdivisions.

Put proactively thought about what would become of his land after he passed away. His priority was to be fair to his four children, while making sure that the land would be held by one of his children only. In order to share his assets equally among his children, Put placed all of his assets into a living trust and drafted a will that specified how assets would be distributed. Put's youngest son cleared a site and built his home on the Bradford Tree Farm. The property was transferred from the Trust to Blodgett Forests, LLC, a Limited Liability Company. Put wanted to make sure the structure he set up would prevent chaos and probate court hold-ups.

Put passed away in 2020 leaving a legacy of conservation. Put was twice recognized as Vermont's Outstanding Tree Farmer of the Year and he promoted the sound stewardship of forestland as the long-standing president of the Vermont Woodlands Association.

Actions:

- Enrollment in the Current Use Program, which allows the family to keep the land undeveloped and managed as a working landscape;
- Donation of a conservation easement to the Upper Valley Land Trust to ensure the land would be safe from subdivisions and kept as forestland;
- Drafted a will and set up a living trust to own assets, including the land, and provide specific directions for future ownership of the land.

Bob and Sue Lloyd

The Land:

1,100 acres of forestland and open fields and 200 acres of farm land sold to farmers and currently operated as an organic dairy farm in Tinmouth, VT

In 1963, Bob and his wife Sue together with their college roommates and their spouses decided to purchase 450 acres of forested land and open fields in Tinmouth. The group used the land exclusively for recreation until 1969, when Bob and Sue built a cabin and started spending their summers there with their three sons. A neighboring farmer ran a thirty-head, free-range beef herd that kept the fields open.

In 1975, the neighbors' 850-acre farm was forced onto the market by a family dispute. Bob and Sue purchased it, promising their neighbors that they would do their best to keep the land farmed. Sue, Bob and their friends decided to take action to avoid any dispute that could lead to land fragmentation, so they created a land structure that would forever protect the integrity of their land. This is why in 1980 they donated a conservation easement on the whole land to the then Ottauquechee Regional Land Trust (now Vermont Land Trust) and to the

A. Blake Gardner

LANDOWNER CASE STUDIES

Vermont Department of Forests, Parks & Recreation, thus restricting subdivisions and commercial uses of the land, while allowing forestry and agricultural uses. Bob also found new tenants to farm 200 acres of his former neighbors' property, who would go on to buy the land.

Bob, Sue and their co-owners also decided to establish a condominium where each owner would own a ten-acre lot in fee simple and an undivided interest in the property held in common allowing each owner to sell their share without dividing the property. The decision making process remains fairly simple as the owners meet once a year to discuss land related issues. Although the rule is one share, one vote, they have always managed to come to a consensus without having to vote.

Simultaneously, the land was enrolled in the Current Use Program and subject to a management plan. Profits from logging are sometimes shared within the owners and sometimes reinvested in the land.

Sue passed away in 2018 and Bob passed away in 2024 leaving a legacy of conservation on their land. They were both heavily involved in their community. Bob served on his local and regional planning commission, and as a past president of Vermont Coverts: Woodlands for Wildlife.

Actions:

- Purchase of land together with several families (tenancy in common);
- Donation of a conservation easement;
- Sale of some of the protected land to farmers ensuring perpetual protection of the land while preserving a working landscape;
- Establishment of a condominium, allowing sale of shares and common use of the land while avoiding its subdivision;
- Enrollment in the Current Use Program alleviating the tax burden and allowing the owners to keep the land undeveloped. Some areas enrolled in the Current Use Program are designated as Ecologically Sensitive Treatment Areas.

Susan C. Morse

The Land:

30 acres of conserved wildlands in the Chittenden County Uplands

Susan C. Morse has been a steward of 30 acres in the Chittenden County Uplands region since the 1970s, when she first began researching and collecting wildlife data on the parcel. In the 1980s, about 10 years after she began her research, she convinced the previous owners to sell the property to her.

From the beginning, Sue was drawn to the remarkable diversity in plant communities and topography of the land, and its attractiveness to wildlife. Since the parcel was remote, trailless, inaccessible, and had not been logged in recent memory, Sue's research revealed a mature forest with old growth characteristics. inaccessible, and had not been logged in recent memory.

Sue knew the forest very well by the time she purchased it, and her vision for the land has largely remained unchanged throughout time. Her primary, initial vision was driven by the belief that we need more unvisited, quiet places for wildlife. She urges people with the privilege of being a landowner to remember that your property can be permanently conserved as a wildland. She is a staunch believer in the need to create permanently conserved wildlands without trails and human access throughout Vermont.

Sue believes that new approaches in forest management that seek to emulate and increase old-growth attributes and structures, as well as nurture mature forest ecosystems, are inspiring and promising. At the same time, she emphasizes that ecologists and conservation planners stress the vital importance of also permanently preserving expansive and connected wild old growth forests.

Since her purchase, Sue has watched the young forest surrounding her property become much more complex and attractive to wildlife under permanent conservation. She is a founding member of the Chittenden County Uplands Project, a community conservation initiative that now involves over a dozen organizations dedicated to conserving the ecological integrity, rural character, and working landscape of the northeastern uplands of Chittenden County.

Sue celebrates the importance of moderation, collegiality, and community in owning her land. She

LANDOWNER CASE STUDIES

also sees how climate change is accelerating harm and believes that wherever you live, there is an opportunity and urgent need to step up and conserve some of the land you interact with as a landowner. She underscores the importance of seeing past the human centric mindset, and taking into consideration what will best meet the needs of wildlife. Sue is delighted to have permanently conserved her land under conservation easement with the Northeast Wilderness Trust.

Actions:

- Utilized a conservation easement to permanently conserve her property
- Limits human access with the land so that wildlife can enjoy peace and security
- Conserved surrounding properties in partnership with other land trusts
- Restricts access from March through July while there are young and vulnerable animals relying upon sensitive habitats on the land

---

Tim Stout

The Land:

173 acres of forestland with 8 re-wilding fields, 4 streams, 2 ponds, and many wetlands in Shrewsbury, VT

Tim Stout

Tim Stout and his brother are the 4th generation to inherit and care for his land. His great-grandfather originally purchased the land in the late 1930s and since then it has been passed down throughout his family. Over time, the vision for the land, and the management techniques have undergone major changes.

For years, the land was a dairy farm, until the late 1960s when the farm closed. As fields grew back and early stage forests emerged it became a stronger area for wildlife. When the Current Use Program was introduced in Vermont in the early 1980s, the Stout family quickly enrolled, and in the 1990s, they put the land in a conservation easement. In 2019, driven by Tim's passion for forestry and climate change, they broadened their vision for the land. First, a new Current Use plan was developed with a specific lens for how to manage the land to be an efficient carbon sink. Tim also enrolled the land in the Family Forest Carbon Program with the American Forest Foundation, as well as the Conservation Stewardship Program (CSP) and the Environmental Quality Incentives Program (EQIP), both administered through the USDA Natural Resources Conservation Service. With the support of these programs, Tim is fulfilling his passion for storing carbon, and managing his forests for biodiversity and resilience.

Some strategies that Tim currently practices on his land includes light thinning of trees to allow for more light to come into the forest floor, managing the forest for structural diversity by planting multiple tree species, using assisted migration techniques to better prepare his forest for a changing climate, doing patch cuts to increase species diversity, and preventing invasive species from overwhelming the forest. During the COVID-19 pandemic, Tim visited the property and realized the opportunity of opening it to the public. He made maps and signs and there are now 3 miles of well marked trails for the public to enjoy. Tim also offers tours.

Tim's overarching passion is a vision of leaving the land to future generations. He plans to continue the generational inheritance of this land by leaving it to his kids, and for his kids to leave it to theirs. His hope is that they can enjoy the land the way he has over the years. To help ensure this vision becomes a reality, an extensive legacy plan was put in place 5 years ago. Tim feels very lucky to have inherited these 173 acres and knows that landowners in Vermont play a critical role in managing the land for climate change. He knows it is an ongoing process and is always looking for new ways to be a good steward.

Actions:

- Enrolled in the Current Use Program.
- Enrolled in the Family Forest Carbon Program (with the American Forest Foundation).
- Enrolled in the Conservation Stewardship Program (CSP) and the Environmental Quality Incentives Program (EQIP) administered by the USDA Natural Resources Conservation Service.
- Put the land in a conservation easement.
- Opened his land for public access.
- Actively practices carbon management and biodiversity strategies.

CHAPTER 6

How Do I Take Care of My Woods?

Understanding Forest Health

Healthy forests are resilient, diverse, and productive with sustained capacity for self renewal. They are essential for sustaining the ecological vitality and landscape resilience of Vermont. Healthy forests provide essential ecosystem services such as carbon sequestration and storage, water filtration, and wildlife habitat, connectivity, and biodiversity. Promoting forest health involves managing for diversity, reducing stressors, and protecting the natural processes that sustain forest ecosystems.

Forest health encompasses the overall condition and vitality of forest ecosystems, including the health of individual trees, plant communities, and ecological processes. A healthy forest is characterized by diverse species composition, robust regeneration, and functional ecosystem dynamics that support a wide range of ecological functions and services.

Resilience refers to the capacity of forests to withstand and recover from disturbances, such as insect outbreaks, disease epidemics, and extreme weather events. Healthy and resilient forests are able to adapt to changing environmental conditions and maintain ecosystem functions over time, even in the face of external pressures.

Identifying Threats to Forest Health: Addressing Stressors and Disturbances

As abundant as Vermont's forests are, they face a variety of threats to their long-term health and integrity – to their composition, growth, ecological function and resilience. These include invasive species infestations, localized over-browsing by wildlife, increasing fragmentation, and climate change impacts.

These stressors can disrupt ecosystem processes, degrade habitat quality, reduce biodiversity, increase the forest's vulnerability to further disturbances, jeopardize economic potential and human enjoyment, and compromise the long-term sustainability of forests.

Addressing threats to forest health often requires proactive management strategies that target underlying causes and promote ecosystem resilience. This may include invasive species management, habitat restoration, forest regeneration, and climate adaptation measures designed to enhance the ability of forests to withstand and recover from past or future disturbances. It is also important to maintain forests that are ecologically connected, which helps to maintain their overall integrity.

Effective planning and management strategies involve identifying and addressing these threats through proactive measures such as monitoring, prevention, and adaptive management, which may include working with a forester, biologist or natural resource specialist. By staying informed about emerging threats and implementing appropriate management actions, forestland owners can help safeguard the health and resilience of their forests.

Common Stressors and Threats to Forest Health

Managing Invasive Species

Invasive species are non-indigenous plants, animals, and pathogens that cause harm to the environment, economy, or human health because they replace native species, disrupt normal healthy forest functions, and reduce forest productivity, both ecologically and economically.

Effective invasive species management involves prevention, early detection, and rapid response to new infestations.

Forestland owners can take steps to prevent the introduction and spread of invasive species by practicing good land stewardship, such as cleaning equipment and vehicles, avoiding the transport of contaminated soil or plant material, and monitoring their land for signs of invasive species, potentially with the help of a qualified professional.

When invasive species are detected, prompt action is crucial to prevent their spread and minimize their impact. Techniques such as mechanical removal, chemical treatments, and biological control can be employed to manage invasive species and restore native plant communities.

1. **Early Detection and Rapid Response:** Regularly monitor your forestland for signs of invasive species and take immediate action to control new infestations.

2. **Mechanical Control:** Use manual or mechanical methods, such as hand-pulling, cutting, or mowing, to remove invasive plants.

3. **Chemical Control:** Where appropriate, and when other strategies are not available or effective, apply herbicides judiciously and in accordance with regulations to control invasive species.

4. **Preventative Measures:** An ounce of prevention is worth a pound of cure. Implement practices to prevent the introduction and spread of invasive species, such as cleaning equipment, using native plants, and educating others.

Many landowners also work with local organizations, state agencies, and fellow landowners to share knowledge, resources, and strategies for managing invasive species. Collaborative efforts can enhance the effectiveness of control measures and contribute to broader landscape-scale conservation goals.

Managing Deer Impacts: Balancing Deer Populations and Forest Regeneration

White-tailed deer are an iconic and valued species in Vermont, but their populations can have significant impacts on forest ecosystems when they exceed the ecological carrying capacity. Over-browsing by deer can hinder forest regeneration, reduce plant diversity, and alter habitat structure, ultimately affecting wildlife populations and overall ecosystem health.

Forestland owners can implement strategies to balance deer populations with forest regeneration by:

- Providing access for hunting
- Protecting young trees with fencing or retention of tops from harvested trees, and other natural barriers to browsing.
- Managing for tree regeneration levels that can overcome browse pressure (control invasive plants, create openings for regeneration).
- Collaborating with neighbors and wildlife management professionals

Forest Fragmentation: Loss of Forestland and Erosion of Forest Health and Function

Forest fragmentation is the breaking of larger, contiguous forested areas into smaller pieces of forest. It involves conversion to non-forest cover and use through the creation of roads, agriculture, utility corridors, subdivisions, or other human infrastructure development. Typically it occurs somewhat incrementally, beginning with cleared swaths or pockets of non-forest within an otherwise unbroken expanse of tree cover. Then, over time, those non-forest pockets tend to multiply and expand and eventually that forest area is physically fragmented and reduced to scattered, disconnected forest islands. These remnants are surrounded by non-forest lands and land uses that seriously threaten the health, function, and value of those forest islands for both animal and plant habitats and for human use.

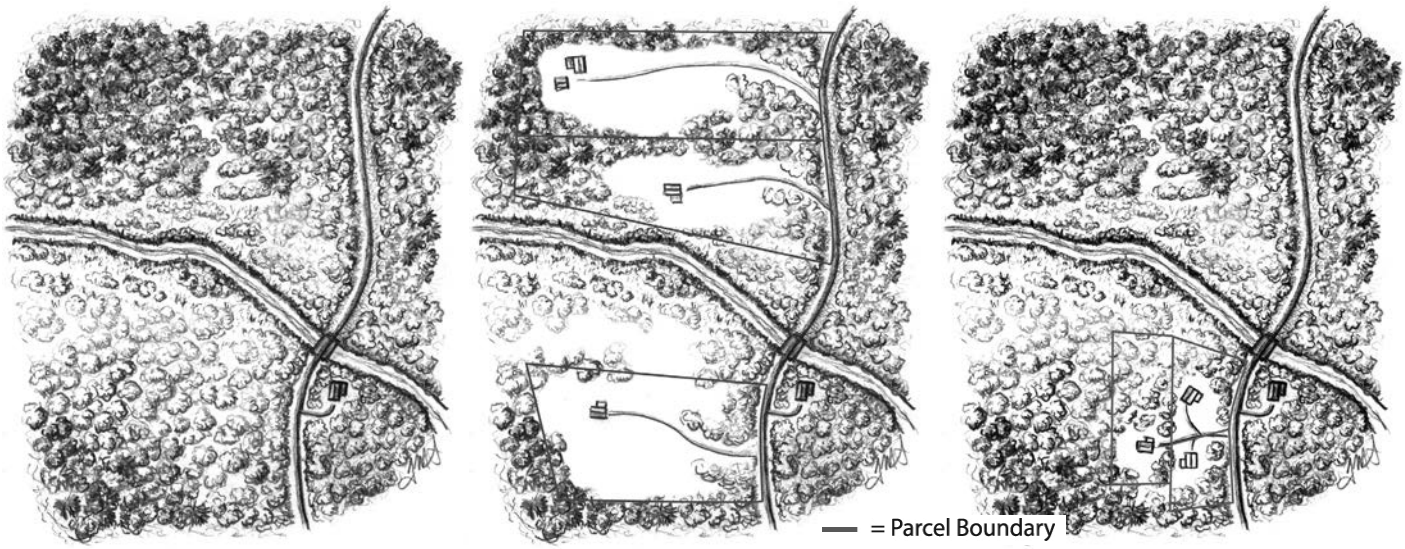
Any land-use change can lead to forest fragmentation. The extent of actual impact depends on the type of change, the degree of fragmentation, and the species involved. It is important to distinguish between a forest fragmented by human infrastructure development and a forest of mixed ages and varied canopy closure that results from good forest management. The former is typically much more damaging to forest health and habitat quality, usually with permanent negative effects, whereas the latter may only cause temporary change in forest condition, while continuing to support multiple forest benefits. Deforestation refers to the conversion of forest into non-forest land, not land thoughtfully thinned and harvested.

In general, fragmentation reduces overall forest health and degrades habitat quality, leading to long-term loss of biodiversity, increases in invasive plants, pests, and pathogens, and reduction in water quality. The wide range of these effects all stem from two basic problems: fragmentation increases separation and isolation between forest communities and it increases so-called edge effects within forest fragments.

As discussed in an earlier chapter, Vermont's forests are being increasingly fragmented by conversion of forest cover and use and these changes pose significant threats to the health, integrity, and value of remaining forests. Informed land-use planning and forest stewardship are by far the two best strategies for thwarting forest fragmentation and its negative effects on Vermont's landscape, culture, and economy. This guide is intended to inspire and support empowered decision making and action.

In the case where a landowner chooses to build a home or subdivide their land, it is important to note that proactive site design can minimize the overall impacts to forests. For example, subdivisions can be designed to share common features such as roads and utility lines, and lots can be clustered so that the bulk of forestland remains intact and that access for recreation and management is protected. In general, keeping forests as forests is the primary goal when development does occur.

Clustered Development



Illustrations by Jeannie Sargeant

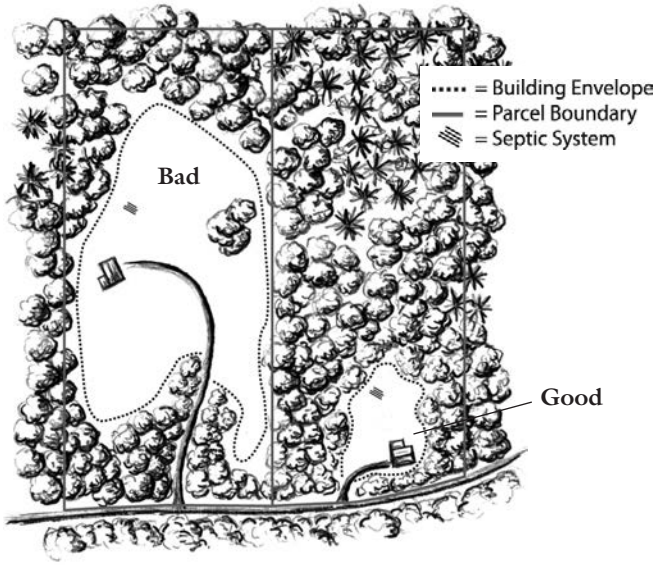
Parcel before development.

Parcel developed with conventional road frontages and setbacks results in "spaghetti lots" that reduce forest cover.

Parcel with clustered development, minimizing forest fragmentation while preserving privacy and the functionality of remaining forestland.

Building Envelopes

The larger building envelope (left) clears a large amount of forestland, while the more limited envelope (right) minimizes the impact of development.



Addressing Climate Change: Adapting Forest Management Practices

Climate change presents a complex and evolving challenge for forestland owners, with potential impacts on forest health, species composition, habitat quality, trail, road, and drainage challenges, and ecosystem functions. Adapting forest management practices to changing climate conditions is essential for ensuring the long-term resilience of Vermont's forests.

To maintain the health and productivity of Vermont's forests in the face of these challenges, landowners can adopt several best practices:

- Promote diversity, both in tree species and in age and size classes of trees within a forest. Diverse and complex forests are more resilient to pests, diseases, and climate impacts because they are less likely to be affected by a single stressor. Not unlike a financial investment portfolio, diversity equals resilience when you can spread your risk across various assets
- Focus on controlling invasive species which can outcompete native plants and weaken forest ecosystems. Regular monitoring and timely intervention, such as removing invasive plants or treating trees affected by pests, are critical.
- Reduce soil erosion by minimizing disturbances and implementing best practices in management practices, and by maintaining buffers around water ways. Forest roads and trails should also be designed to manage stormwater effectively, preventing runoff from damaging forest soils.
- Manage for carbon uptake as well as storage; this can include a mix of strategies depending on landowner goals, from retaining large, older trees and promoting old and mature forests that store carbon, to supporting a mix of fast-growing young trees and following sustainable timber harvesting practices that maintain forest carbon stocks.
- Consider planting tree species that are better adapted to future climate conditions in Vermont. While this requires careful planning and an understanding of which species will thrive, it can be a proactive way to help forests adjust

to changing temperatures and precipitation patterns.

Incorporating these practices will not only help forests remain productive but also ensure that they continue to provide essential ecological services, such as carbon storage, water filtration, and wildlife habitat, in an increasingly unpredictable climate.

By embracing adaptive management and staying informed about climate science, forestland owners can navigate the uncertainties of climate change and steward their forests for a sustainable future.

Actions and Next Steps

- When developing land, work with an engineer or architect to plan house sites and driveways to reduce the fragmentation of forestland
- Walk your property periodically to observe changes in tree health, signs of pests or disease, invasive species, and habitat conditions. Keep notes or maintain a forest journal to track observations over time.
- Sign up for forest health conditions reports and updates from the Vermont Department of Forests, Parks, and Recreation.
- Manage invasive species proactively by monitoring and employing control methods such as mechanical removal or targeted herbicide use.
- Keep up-to-date with the latest research, climate trends, and stewardship techniques through workshops, webinars, and trusted publications.
- Be flexible and willing to adapt your management strategies as conditions and knowledge evolve.
- Share knowledge, participate in local conservation efforts, and coordinate habitat restoration or invasive species control across property lines.

Tim Stout

CHAPTER 7
Stewardship Options and Actions

The possibilities for forest stewardship are as diverse as forests and forest landowners themselves. By exploring and adopting a range of philosophies, strategies, tactics, and activities, each forestland owner can tailor their management practices to align with their values and goals based on the unique characteristics of their land. This chapter explores the range of possibilities available to Vermont forestland owners, helping you identify the philosophies and practices that align with your vision for your forest.

Whether you prioritize long-term protection, sustainable timber production, habitat enhancement, recreation, community engagement, or a combination of these, there are numerous pathways to responsible and effective forest stewardship.

Philosophies of Forestry

Forestry is the science, art, and practice of understanding, stewarding, and managing forests to meet various environmental, economic, and social goals. It involves the stewardship of forested landscapes to balance wildlife habitat, water quality, recreation, carbon storage, timber productions, and long-term forest health and integrity. In the northeastern United States, including Vermont, forestry is deeply rooted in sustainable practices and policies that aim to support both the ecological health of forests and the economic well-being of communities. Importantly, forestry is not simply the exploitation of forests for extractive purposes and while timber harvesting is an important tool of forestry practice, not all forestry includes logging, and not all logging is legitimate forestry.

Thoughtful forest stewardship also acknowledges the diverse ways communities have historically related to and managed forests. Indigenous peoples, particularly the Wabanaki Tribes in Vermont, developed sophisticated forest management practices over thousands of years. Recognizing and respecting these traditional knowledge systems alongside contemporary approaches can enrich your stewardship practices while acknowledging the complex history of the land you now steward.

As such, forestry is broad and expansive in its scope and reach and it encompasses many possible pathways and even philosophies for its practice and implementation. Here, we cover three broad approaches to forestry as practiced in Vermont.

Conservation Forestry

Conservation forestry emphasizes protecting and enhancing the ecological integrity of forest ecosystems. This philosophy prioritizes biodiversity, habitat protection, and the maintenance of natural processes. Conservation forestry often involves setting aside significant portions of forestland as natural reserves where passive management – choosing to let nature take its course – is the main, or perhaps even only, strategy. In other cases, implementing light-touch management practices that mimic natural disturbances is used.

Conservation Forestry may also involve the implementation of more active, restorative practices to address and correct legacies of poor past practices; invasive species; forest pests and pathogens; and intense wind, rain, and ice storms

Such passive or restorative approaches to forest stewardship are often part of a larger strategy to allow forests to become or at least be more like true old-growth forests. For most forests in Vermont, this will take many decades.

Key Principles:

- **Biodiversity Conservation:** Focus on maintaining or increasing species diversity.
- **Mimic Natural Processes:** Manage forests to allow natural processes to dominate and influence forest conditions over time, or foster practices that replicate natural disturbances, such as wind-throw, fire, or pest outbreaks.
- **Minimal Intervention:** Limit human intervention to essential activities that support ecological resilience.

Ecological Forestry

Rooted in the understanding that forest ecosystems are complex, interconnected systems, ecological forestry aims to manage forests for a variety of purposes, products, and outcomes in a way that maintains or enhances the forest's ecological functions, such as nutrient cycling, carbon uptake, and habitat provision. Ecological forestry often involves practices that are intended to emulate natural processes and promote forest complexity and resilience.

Ecological forestry also emphasizes several forest management practices that landowners can implement to accelerate the development of old-growth forest attributes and characteristics in younger forests. These practices, often

referred to as "structural enrichment" or "accelerated restoration," aim to create conditions that mimic natural processes and foster the accelerated attainment of old growth features. Here are some key strategies:


A. Blake Gardner

Variable Density Thinning

- Thinning trees in a non-uniform pattern can create more variability in tree density, which simulates the natural openings and canopy layers found in old growth forests. This encourages the growth of a diverse range of tree ages and species and allows more light to reach the forest floor, promoting understory development.
- Creating small gaps by removing selected trees mimics the natural disturbance patterns (e.g., tree falls) that contribute to structural diversity. These gaps promote the growth of different species and age classes, supporting a more complex ecosystem.

Retention of Legacy Trees

- Protecting and retaining the largest and oldest trees within a forest encourages the development of old growth characteristics. Legacy trees contribute to habitat complexity, provide seed sources, and create a sense of continuity in the forest.
- Identify and retain trees that have the potential to become future legacy trees. These might include species with long lifespans and characteristics conducive to old growth attributes, such as diverse branching structures and cavity formation.

Create Structural Complexity

- Increase the amount of standing dead trees (snags) and fallen logs, as they are critical to old growth ecosystems. Snags provide habitat for birds, bats, insects, and fungi, while downed logs contribute to soil fertility and provide shelter for small mammals and amphibians.
- In some cases, girdling (removing a strip of bark and wood around a tree's circumference) or intentionally felling trees can create snags and coarse woody debris that replicate natural processes.

Enhance Understory and Midstory Development

- Encourage the growth of native understory and midstory plant species that are characteristic of mature forests. This can be done by planting native shrubs, ferns, and shade-tolerant trees that contribute to biodiversity and layered habitat structures or by careful implementation of thinnings and canopy gap formation.
- Remove invasive plants that compete with native species and impede the development of a diverse understory.

Encourage Biological Legacies

- Preserve unique biological features like decaying stumps, nurse logs (fallen trees that support seedling growth), and root mounds created by uprooted trees. These features foster a wide range of plant and animal life.
- Allow woody debris to decompose naturally to support fungal growth, which is essential for nutrient cycling and the health of old growth forests. Mycorrhizal fungi, in particular, form networks that help trees share nutrients and bolster forest resilience.

Mimic Natural Disturbances

- Implementing practices that simulate natural events, such as windthrows or ice storms, can help diversify forest structure. This approach helps develop features like pit-and-mound topography or gap formation and promotes the regeneration of different tree species.
- Introduce patch cuts to create more dynamic growth patterns and allow sunlight to penetrate the forest floor, which encourages a diverse range of plant and animal life.

Sustained Yield Forestry

Sustained yield forestry seeks to balance ecological, economic, and social values by managing forests for continuous, long-term production of timber and other forest products that we all use in our daily lives, while maintaining

forest health and integrity. This philosophy emphasizes the careful planning and implementation of excellent harvesting practices to ensure that forest resources, biodiversity, and function are not depleted and that the forest remains healthy and productive for future generations.

Key Principles:

- **Sustained Production:** Ensure that the rate of timber harvesting does not exceed the forest's natural capacity for regeneration and growth.
- **Multiple-Use Management:** Integrate timber production with other land uses and benefits, such as recreation, wildlife habitat, aesthetics, and watershed protection.
- **Economic Viability:** Focus on maintaining a regular income stream from forest products while protecting environmental and social values.

Creating Healthy Forests to Foster Biodiversity and Wildlife Habitat

Under any philosophy of forestry, forestland owners can take proactive steps to create and maintain diverse habitats that support a wide range of wildlife species from songbirds and pollinators to reptiles, amphibians and large, wide-ranging mammals. You can enhance habitat diversity by promoting a mix of forest types, age classes, and structural features, such as standing dead trees (snags), downed logs, and diverse understory vegetation.

In addition, strategies for promoting healthy habitats may include habitat restoration projects, invasive species control efforts, wildlife habitat enhancement measures, protection of sensitive or rare ecological features, and sustainable forest management practices that maintain ecosystem integrity. For example, implementing practices such as careful thinning, creating forest canopy openings, and regenerating native species can help create a mosaic of habitat conditions that provide food, shelter, and breeding sites for wildlife. Furthermore, maintaining riparian buffers and wetland areas can support aquatic habitats and enhance overall landscape connectivity.

We will delve further into the details and possibilities for understanding and enhancing wildlife habitat in subsequent chapters on planning and stewardship activities.

Integration and Blending of Philosophies and Inclusion of Social Elements

These three foregoing broad philosophies of forestry can be and often are integrated and blended in practice. What's more, each of them, as well as any blended approach combining them, should also incorporate what is sometimes known as "social forestry." This places a strong emphasis

Key Tactics

- **Habitat Diversity:** Create a mosaic of different habitat types (e.g., wetlands, meadows, dense forests) to support diverse wildlife communities.
- **Plant Diversity and Structure:** Promote a mix of plant and tree species, ages, and sizes to support different wildlife species needs and ecosystem resilience.
- **Snag and Downed Wood Retention:** Leave standing dead trees (snags) and downed logs to provide nesting sites, shelter, and foraging opportunities for birds, mammals, and invertebrates.
- **Edge Management:** Create and manage transitional zones (ecotones) between different habitat types to increase biodiversity.
- **Riparian Buffers:** Maintain or restore vegetated buffers along streams and wetlands to protect water quality and provide habitat for aquatic and terrestrial species.
- **Wildlife Corridors:** Create corridors and connectivity between habitat patches to facilitate wildlife movement and reduce fragmentation.
- **Nest Box Installation:** Install nest boxes for cavity-nesting species such as birds, bats, and small mammals if your land lacks large standing dead trees.
- **Food and Water Sources:** Ensure the availability of natural food sources, such as seeds, berries, and insects, as well as clean water.
- **Rare Habitats and Natural Communities:** Identify and protect unique or rare habitat features such as vernal pools or rare natural communities.
- **Nesting Sites:** Preserve and encourage the development of nesting sites, such as cavities in trees for birds and mammals, and standing deadwood that supports various wildlife.
- **Successional Connectivity:** Ensure that younger forests connect to other forested areas to allow for wildlife movement and genetic exchange, which supports a healthier ecosystem as it matures.

on the social and cultural values of forests, recognizing their importance to communities, recreation, and heritage. This philosophy advocates for the inclusive management of forests, ensuring that they provide benefits to a wide range of stakeholders and support overall community well-being.

Key Principles:

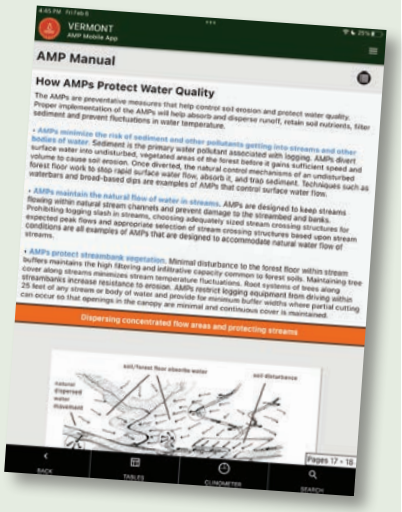
- **Community Engagement:** Involve local communities and stakeholders in forest management decisions.
- **Recreation and Heritage:** Protect and enhance the recreational, cultural, and historical values of forests.
- **Equity and Access:** Ensure that forest resources are accessible and beneficial to all members of society.

It may not be practical to pursue and implement all three broad philosophies of forestry to any significant degree on any given forest parcel. The underlying condition and overall size of your forested land are important considerations, but ultimately it is your decision to choose the best philosophy based on your values and goals, and the advice you may seek from a forester or other conservation professional.

It is also important to consider your parcel, regardless of its size, in the context of the larger surrounding landscape, which helps to understand how it fits in, and what features and functions it may be able to provide or complement. And when we also consider the need for and value of meeting our collective societal consumption of wood and other forest products from local forests, in addition to our societal need to have natural areas that are free from human intervention or management, it can be helpful to think of the broader landscape of Vermont with an eye toward what is called the "Triad Approach" to forests and forestry. Under the Triad model, certain areas are managed as reserves with minimal or no management intervention, some are managed more intensively under a sustained yield philosophy, and the rest – and perhaps largest share – is stewarded under ecological forestry principles. As with any approach to forestry, it is important to consider the underlying functions of your parcel, and your values and goals for owning and stewarding your land.

Lastly, keep in mind that none of these approaches to forestry (or any combination of them) include the range of misguided, exploitive practices that unfortunately still occur that are sometimes passed off as legitimate forestry practices. Such practices such as high-grading," where only the most economically valuable trees are harvested, or "diameter-limit cutting," where only trees above a certain size measured at the stem are harvested are not legitimate silvicultural methods, are damaging to long-term forest health and value, and have no place in the stewardship of Vermont's forests.

The Acceptable Management Practices (AMP) Manual for Logging Professionals is now available as an app for your smart phone or tablet. This free app includes a mapping tool, quick references, a clinometer, and an AMP cost calculator to estimate implementation costs across a job. Download it from the App Store or Google Play by searching "Vermont AMP"."



Forest Stewardship Strategies

Protective Strategies

Protective strategies focus on protecting and enhancing the ecological values of forestland. These strategies may include creating protected natural areas, restoring degraded habitats, and implementing practices that support species diversity and ecosystem health. Some or all such approaches may conform with Use Value Appraisal depending on specific conditions and enrollment types but it is important to know that some may not. Check with your county forester with the Vermont Department of Forests, Parks, and Recreation.

Key Strategies:

- **Habitat Protection:** Designate areas of your forest as conservation zones, where management activities are limited to strategies that protect and maintain critical habitats.
- **Species Conservation:** Implement practices that protect threatened or endangered species, retain unique or important ecological features such as old-growth trees, maintain high-quality habitat for diverse species and overall biodiversity, and maintain wildlife habitat connectivity and travel corridors.
- **Restoration Ecology:** Restore degraded areas of your forest through reforestation, invasive species control, and erosion control.
- **Natural Areas:** Designate areas of your land to remain in a natural state where forests will be shaped by natural processes and transition to old-growth forest conditions over time.

Soil and Water Conservation Strategies

Maintaining healthy soils and protecting water resources are critical components of sustainable forest stewardship. Soil and water conservation tactics focus on preventing erosion, maintaining soil fertility, and protecting water quality.

Key Strategies:

- **Riparian Buffer Zones:** Establish and maintain vegetated buffers—or areas of minimal activity and disturbance—along streams, rivers, and wetlands to filter runoff, stabilize banks, and protect aquatic habitats.
- **Erosion Control:** Implement measures such as silt fences, straw wattles, seeding/mulching, waterbars, ditches, and culverts to prevent soil erosion on slopes and disturbed areas.
- **Watercourse Crossings:** Design and maintain stream crossings, such as bridges and culverts, to minimize impacts on water flow and aquatic habitats.
- **Soil Fertility Management:** Prevent soil loss and compaction, and consider opportunities to retain organic matter—especially tops of harvested trees—on site during management activities.

Timber Management Strategies

Timber management strategies are often designed to support the production of wood and other forest products while also maintaining the health and sustainability of the forest. It is important to note that such strategies are also helpful in enhancing wildlife habitat, biodiversity, recreational access, and mitigating forest health threats. These strategies should involve careful planning, strategic harvesting, and the application of modern silvicultural techniques to promote desirable tree species and stand structures. Silviculture is the art and science of applied forest ecology. More specifically, it is the practice of managing the establishment, growth, composition, and quality of forest stands while considering human use and needs. Silvicultural tactics are the specific methods and techniques used to achieve desired stand conditions and forest management objectives.

No timber management strategy is intended to be applied everywhere, all the time or without due consideration as to when and how to apply it. These strategies should be designed in consultation with a licensed professional forester that is in alignment with your goals for the property, and continually reevaluated..

Key Strategies:

- **Careful Harvesting:** Employ methods, tools, and equipment matched with site conditions and objectives to maintain forest cover and promote natural regeneration. Excellent guidance on how to protect forest health and environmental quality during timber harvesting can be found in Vermont's Voluntary Harvesting Guidelines[4].
- **Silvicultural Systems:** Use legitimate silvicultural approaches matched with stand conditions to achieve specific, long-term stand objectives. High-grading (where only the biggest and best trees are harvested) or other "selective" cutting methods (including only cutting dead trees) based on operational convenience or maximum immediate returns are not legitimate silvicultural systems and have no place in good woodland stewardship; they degrade the forest ecologically, genetically, and economically, thereby compromising forest health and landowner options for stewardship and enjoyment.
- **Timber Stand Improvement (TSI):** Conduct thinning, cleanings, weeding, pruning, and other activities to improve the quality and growth of the remaining trees.

Recall that Vermont Conservation Design includes targets for percentages of Vermont's landscape that are in various types and conditions across the nine broad biophysical regions. Timber management strategies may be employed to advance these goals, such as the targets set for old forest and young forest conditions.

Timber management strategies may be employed to advance any given forestland ownership toward achieving such goals.

Recreational and Aesthetic Management Strategies

Recreational and aesthetic management strategies aim to enhance the visual appeal and recreational value of forestland. These strategies often involve the creation and maintenance of trails, viewpoints, and other amenities that encourage sustainable use and enjoyment of the forest. In many cases, it makes most practical and economic sense to combine

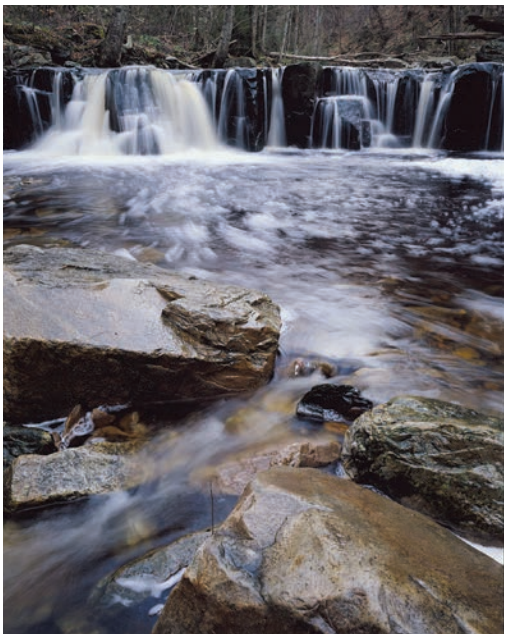
Modeling Integration and Innovation

The Foresters for the Birds initiative by Audubon Vermont is a collaborative program designed to integrate bird habitat conservation into forest management practices. This innovative initiative brings together foresters, landowners, and conservationists to enhance forest ecosystems in a way that supports both biodiversity and sustainable forestry. By employing bird-friendly management techniques, the program aims to maintain and improve habitat for native bird species, while also promoting the long-term health and productivity of Vermont's forests.

Through workshops, resources, and direct consultations, Foresters for the Birds provides practical guidance on how to manage woodlands with an eye towards avian needs. It encourages practices that diversify forest structure, protect important habitat features, and ultimately support a broader array of wildlife. This initiative exemplifies a holistic, integrated approach to forestry, underscoring the intrinsic link between healthy forests and thriving bird populations, and highlighting the role of strategic management in conserving Vermont's natural heritage.

4 https://fpr.vermont.gov/sites/fpr/files/Forest_and_Forestry/Your_Woods/Voluntary_Harvesting_Guidelines/VHG_FINAL.pdf

recreational and aesthetic objectives with forest management operations. Indeed, many of Vermont's best hiking, skiing, and biking trails came about through forest management activities.



A. Blake Gardner

Key Strategies:

- **Trail Development:** Design and maintain a sustainable network of trails for hiking, biking, skiing, and other recreational activities in line with the protection of environmental quality.
- **Scenic Enhancement:** Manage forest areas to maintain or enhance scenic views, such as by creating openings and vistas or by retaining large trees or managing vegetation along roads and trails.
- **Recreational Infrastructure:** Develop and maintain facilities such as campsites, access points, picnic areas, etc. to support outdoor recreation.

Integrated Forest Management Strategies

Integrated forest management strategies seek to balance multiple objectives on the same piece of land, combining protection, timber management, recreation, and other goals. These strategies require careful planning and coordination to ensure that different land uses complement, rather than conflict, with one another.

Key Strategies:

- **Multiple-Use Planning:** Develop a management plan that incorporates multiple objectives, such as wildlife habitat, timber or firewood production, and recreation, into a cohesive strategy consistent with the ecological condition and capabilities of your land.
- **Zoning:** Divide your forestland into different management areas or stands, each managed for a specific purpose (e.g., conservation, timber, recreation), to minimize conflicts and optimize land use.
- **Adaptive Management:** Continuously monitor the outcomes of management activities and adjust strategies as needed to achieve your goals.

Embracing Continuous Learning: Staying Informed and Adaptable

Forest stewardship is a dynamic and evolving field that requires continuous learning and adaptation. Staying informed about emerging research, management practices, and policy developments can enhance your knowledge and skills as a forestland owner. Fortunately, Vermont is home to a vibrant network of conservation organizations, government agencies, and community groups dedicated to supporting forestland owners. Engaging with these resources can provide access to educational programs, financial assistance, technical support, and opportunities for collaboration with other landowners.

Participating in workshops, field tours, and online courses can also provide valuable learning opportunities and keep you connected with the broader forestry community.

By embracing a mindset of continuous learning and collaboration, forestland owners can navigate the complexities of forest management, make informed decisions, and contribute to the long-term health and sustainability of Vermont's forests.

As you continue your journey as a forest steward, remember that your choices have a lasting impact on the landscape, the community, and future generations. By thoughtfully considering the range of options available to you, and by continuously learning and adapting your practices, you can ensure that your forest remains a healthy, vibrant, and sustainable part of Vermont's natural heritage.

Key Activities:

- **Educational Workshops and Field Days:** Attend events with family or friends to learn about sustainable forest management and stewardship practices.
- **Volunteer Programs:** Find volunteer opportunities in your community to participate in activities such as tree planting, trail maintenance, and invasive species removal.
- **Collaborate with Neighbors:** Partner with neighbors on management or conservation strategies, including sharing in the cost of stewardship activities.
- **Collaboration with Schools and Organizations:** Partner with local schools, universities, and conservation organizations to support environmental education, research, and hands-on learning experiences.
- **Public Outreach:** Utilize newsletters, social media, and other communication channels to ask questions, share information about your stewardship efforts and promote conservation values.

Actions and Next Steps

- Look at ways you can slow, spread and sink water on your property by using water bars, leaving downed logs on the landscape, or retaining other woody material.
- Evaluate the biodiversity features on your property.
- Review your forest management plan once a year.

CHAPTER 8

Public Access and Recreation: Navigating Opportunities and Responsibilities

(From Department of Forests, Parks, and Recreation's Limitations of Landowner Liability Brochure)

Understanding Access Laws and Traditions: Balancing Rights and Responsibilities

Many of the public outdoor recreation opportunities we value in Vermont are available through the generosity of private landowners who allow the public to come onto their lands to recreate. This important and long-standing tradition makes Vermont a special place to visit and to live, with abundant recreational resources. However, landowners are justifiably concerned about their personal exposure to liability claims, or lawsuits, that may result from allowing the public to recreate on their property.

In 1997, the Vermont General Assembly enacted a statute (12 V.S.A. Chapter 203, Limitations on Landowner Liability) to address liability concerns and to encourage landowners to make their land and water available for recreational uses. The statute establishes that a landowner will have no greater duty of care, or liability, for a person that recreates on their land for no consideration (fee) than the landowner would have to a person who trespasses on their land.

Vermont Fish & Wildlife Department

Thus, under Vermont law, a landowner's exposure to liability claims from recreational users on their land is very limited. The landowner's responsibility to recreationists and the degree of care varies, depending on the nature of the recreational use and the relationship between the recreation user and the landowner.

A landowner is not liable for property damage or personal injury sustained on their land when the landowner did not take from the affected person a price, fee, or other charge (monetary or otherwise) to enter their land, and the affected person entered for a recreational use. This limits a landowner's exposure to liability, or likelihood of being successfully sued, and helps encourage Vermonters to open their private lands for recreational use by the public.

The landowner liability law applies to "land," which is defined as open and undeveloped land, paths, trails, water bodies, and fences and structures used to enter or go upon land, including bridges and walkways. "Land" does not include areas that are developed for commercial recreational uses. It also does not include equipment, machinery, or personal property, or structures or fixtures that are not used to access or traverse the land.

However, liability protections may also apply to injuries or damages related to use of equipment, fixtures, machinery or personal property that is on the land if there is no permission from the landowner for the recreating public to use these devices.

The exception to this limitation on liability is when the damage to land or personal injury is the result of the willful or wanton misconduct of the landowner. Recreational uses are identified in the statute and broadly include a variety of activities. Thus, if the landowner receives consideration for making his or her land available for public recreational use, or has acted in a willful or wanton manner that causes the damage or injury, the landowner is no longer protected from the limitation on liability under this statute.

The landowner liability law provides that a landowner may post a sign, warning recreational users of potential or actual dangers on their land or water. A landowner who posts such a warning sign will not be liable for any damages or injury that results from the recreational use of the land unless the

Vermont Fish & Wildlife Department

damage or injury was the result of the landowner's willful or wanton misconduct.

Landowners should be aware that making land available, without consideration, for recreational use:

- Does not limit the landowner's property rights.
- Does not limit the ability of a landowner and a recreational user to enter into a supplemental agreement for the recreational use of the land or to supplement the duties and limitations established in the statute.
- Does not affect existing rights and responsibilities under other laws specified in the statute (12 V.S.A. §5794(a)(4)).
- Does not support or create an eminent domain, adverse possession, or other prescriptive right or easement claim or land use restriction.
- Does not extend any assurance that the land is safe for recreational uses or create any duty on an owner to inspect the land to discover dangerous conditions.
- Does not relieve a landowner from the obligation to exercise due care for the person's own safety in engaging in the recreational use that they would otherwise have without this statute.

The presence of posted signs, fences, or agricultural or forestry related structures alone do not preclude land from being considered "open and undeveloped."

Ultimately, recreational liability is a complex issue, and all affected landowners should seek qualified professional assistance as they develop a plan to manage risk for their unique, and sometimes changing, situations. While situations vary and landowners are encouraged to consult their own attorneys, the landowner liability law offers significant and helpful protection for landowners who promote the outdoor traditions of Vermont by opening their land to public recreation.

Legal Posting of Land Against Trespass and Use

In Vermont, landowners can "post" their land to restrict public access for activities like hunting, fishing, and trapping. To post land, the owner must place clearly visible signs or paint markings at all entrances and along the property boundaries, ensuring they are spaced no more than 400 feet apart. The signs, which must be maintained and dated each year, must state that hunting, fishing, or trapping is prohibited and include the landowner's name and contact information. To meet the full requirements of state law, landowners must file a copy of the posted notice annually with their town clerk and pay a small fee. Despite posted restrictions, Vermont law still allows access to posted land for non-hunting activities, unless specifically stated otherwise.

It's also important to recognize that posting your land does not automatically preclude hunting. Landowners can both post their property and grant permission to select hunters who align with their values and goals. Promoting this approach helps maintain responsible hunting access while also supporting forest health. For example, deer overbrowsing is a significant concern in Vermont, and limiting hunting without careful management can negatively affect forest regeneration and ecosystem function. By framing hunting access as a flexible, managed choice rather than an either/or decision, landowners can protect both their property and the ecological integrity of their forests.

Fostering Positive Relationships: Collaborating with Trail Clubs and Recreation Organizations

Engaging with local trail clubs and recreation organizations can enhance the recreational value of your land while fostering positive relationships with the broader community. These groups often have expertise in trail construction and

maintenance, as well as connections to volunteer networks and funding sources for recreational projects.

By partnering with trail clubs and recreation organizations, landowners can leverage resources and expertise to develop and maintain recreational trails, campsites, and other amenities on their properties. This collaboration benefits both landowners and outdoor enthusiasts by expanding access to recreational opportunities while promoting responsible stewardship of natural resources.

The Value of Promoting Access

Promoting thoughtful public access to private forestland creates multiple benefits for both communities and ecosystems. While Vermont's tradition of recreational access to private land is valuable, it's important to recognize that not all communities have historically had equal access to these opportunities. Creating more equitable access means understanding and addressing various barriers that different communities face, from physical limitations to cultural and social considerations.

Expanding access thoughtfully can strengthen community connections to forests while building broader support for conservation. When people develop direct relationships with forestland through recreation, education, or cultural practices, they're more likely to support forest conservation efforts and develop their own land ethic. This is particularly important for communities that have historically been excluded from land access and ownership.

Landowners can promote more inclusive access through several approaches:

- Creating universally accessible trails and facilities where terrain permits
- Developing clear, multilingual signage and informational materials
- Supporting traditional and cultural uses through formal agreements
- Partnering with organizations that serve diverse communities
- Providing guided experiences for new forest users
- Ensuring that rules and expectations are communicated clearly and respectfully
- Creating safe and welcoming environments for all visitors
- Protecting sensitive ecological and cultural sites while allowing appropriate access

However, promoting access must be balanced with other stewardship responsibilities. This includes protecting sensitive ecological areas, respecting cultural sites, managing recreational impacts, and maintaining the safety of all users. Landowners should consider developing access management plans that:

- Identify areas appropriate for different types of access
- Establish clear guidelines for use
- Create systems for monitoring and maintaining accessed areas
- Build relationships with users and community organizations
- Include regular evaluation and adaptation of access policies

By thoughtfully expanding access opportunities while protecting forest resources, landowners can contribute to more equitable and sustainable relationships between communities and forestland. This approach not only enriches individual lives but also builds broader support for forest conservation across diverse communities.

Actions and Next Steps

- Seek further advice from legal professionals.
- Identify and mark all points of entry, trails, and water access on your land to protect resources and guide responsible use.
- Consider creating clear, visible signage indicating permissible uses and any restrictions, such as Hunting by Permission Only. The Vermont Fish & Wildlife Department provides free Safety Zone signs that allow landowners to establish a 500-foot buffer around the buildings on their property..
- Connect with local trail clubs, conservation groups, and recreation organizations for trail maintenance, volunteer support, and educational programs.
- Identify sensitive ecological or cultural areas that require limited or no access. Use barriers, designated paths, and signage to protect these resources from overuse or damage.

A. Blake Gardner

CHAPTER 9

Crafting Plans: A Guide for Active Forest Stewardship

Planning for the Future: Developing Short-Term, Intermediate-Term, and Long-Term Strategies

Engaged and effective forest stewardship begins with thoughtful planning that considers both short-term objectives and long-term goals. Short-term plans may focus on immediate needs such as invasive species control, water quality improvements, trail maintenance, or wildlife habitat enhancement. Intermediate and long-term plans can address larger-scale issues such as landowner goals for passive or active management approaches, species regeneration, climate adaptation strategies, timber harvesting opportunities, and succession planning for future ownership and the care of your forests beyond your time of ownership. While written forest management plans are essential precursors to any active management (timber harvesting, for example), they are also helpful and encouraged even for more passive approaches to stewardship where forests are shaped by natural processes.

Partnering with Professionals: Leveraging Expertise for Informed Decision-Making

Forest stewardship includes nuance and complexity that require specialized knowledge and skills. Forestland owners can benefit from working with professionals, including foresters, biologists, engineers, conservation planners, and legal advisors to inform their stewardship and management decisions and ensure compliance with relevant regulations. Partnering with experienced professionals provides access to valuable expertise and resources to support your stewardship efforts. Some of these services can be obtained for free while others are provided for hire at variable costs. It's important to recognize that:

- Not all foresters offer the same skills, abilities, or areas of expertise. Each forester brings a unique combination of knowledge and experience to the forest.
- Additional certifications, accreditations, and endorsements can indicate specialized skills and expertise that add value beyond basic qualifications.
- Alignment with your values and goals is essential. Choosing a forester who shares your priorities ensures that forest management decisions reflect your vision.
- You shouldn't hesitate to challenge your forester to go above and beyond standard practices. The extra time, attention, and expertise can be well worth the investment, even if it comes with additional cost.

By keeping these considerations in mind, landowners can select a forester who not only manages their land responsibly, but also adds measurable value to their property and long-term forest health. Your county forester can provide a list of qualified foresters in your area, but it's imperative that you select a professional who meets your specific interests and communicates with clarity, honesty and consistency.

The Benefits of a Forest Management Plan

A forest management plan serves as a roadmap for achieving your stewardship goals—both near- and long-term. Each plan is uniquely tailored with specific actions, timelines, and best practices for managing your forestland sustainably. A well-crafted plan can enhance the health and productivity of your forest, increase its economic value, and ensure compliance with state and federal regulations.

Most written forest management plans are prepared for landowners by licensed professional foresters and may include a great deal of information, but all forest management plans should include four basic parts:

1) Very clear and concise statements describing the landowners values, goals, and objectives for their forestland stewardship.
2) Detailed technical reports of quantitative and qualitative descriptions of the forest. This includes groupings and types of trees and other vegetation, living and dead; estimates of numbers and sizes and ages of trees; descriptions of the soils and their characteristics; the waters and the wildlife habitats; estimates of timber type, quality, volume, and economic potential; historic/cultural features and recreational assets, etc. In other words, a description of the ecological, economic, and cultural characteristics and capabilities of the land.
3) An accurate map of the property, showing its location in the larger landscape and depicting the basic features it contains.
4) An outline and basic timeline for recommended approaches and activities that combine the owner's objectives with the characteristics and capabilities of the land. This is a list of actual actions to take in your forest and a schedule for when to do them.

Implementing Your Forest Management Plan

Once your management plan is in place, it's time to put it into action. This may involve doing nothing for a period of time, or activities such as thinning overcrowded stands, planting new trees, improving wildlife habitat, protecting sensitive or important ecological areas, or creating recreational trails. Regardless of the activity, it is important to be intentional about your plans and your approach to implementing them, including working with professionals. This is a working document and should not collect dust on the shelf. Keep track of your efforts and outcomes and regularly review and update your plan to reflect changing conditions, new information, and evolving goals.

Understanding Forest Administration: Economics, Taxes, and Contracts for Management Practices

Owning forestland involves navigating what can at times be a complex web of administrative tasks and regulations. Understanding the economic and tax considerations of forestland ownership is essential for maximizing financial benefits and complying with legal requirements. Familiarizing yourself with the aforementioned tax incentives and programs, can help optimize your financial resources while promoting sustainable land management practices. Implementing sound management practices, including your approach to sustainable forest management, invasive species control, water quality, and habitat restoration, is crucial for ensuring the long-term health and productivity of your forest. All that said, these are topics that, while good for landowners to be aware of, are typically best handled and advised upon by a consulting forester.

Generating Income From Your Forestland

Often, an important objective for forestland owners is to generate income from their land in order to offset costs and to provide a return on their investment. The income potential varies and depends on many factors including landowner goals for the property and the health and condition of the forest, and a well-stewarded forest will pay dividends — financial and otherwise."

Although there may be a variety of potential sources for income associated with forestland ownership, primary income potential is from opportunities to sell timber and other forest products, including credits for absorbing and storing carbon. Income potential also exists in other uses, including selling maple sap, hunting leases, or other recreational activities.

Selling timber in Vermont can be a significant opportunity for private landowners, but it requires careful planning and knowledge to ensure sustainable and profitable outcomes. The Vermont Department of Forests, Parks, and Recreation (VT FPR) provides detailed guidance in its "Cut with Confidence"[5] series, designed to help landowners navigate the process effectively, providing a comprehensive guide for landowners on selling timber, forest management, and working with foresters and loggers to achieve sustainable harvests. Please see Appendix One for an outline of the basics of selling timber.

Working With a Consulting Forester

State-licensed consulting foresters act as your agent and advocate in planning and managing forest health. Consulting foresters typically assist with inventorying your forest, preparing management plans, marking timber for cutting,

The Difference Between a Logger and a Forester

Think of foresters and loggers like architects and builders. Foresters are the architects—they design the blueprint for how your forest should be managed, plan sustainable management practices, and oversee how your land is handled to meet your long-term goals. Loggers, on the other hand, are the builders—they carry out the physical work of harvesting trees according to the plan, ensuring that the cutting is done responsibly and efficiently. Just as a builder follows the architect's plans to construct a sturdy and functional building, a logger should follow a forester's guidance to harvest trees sustainably, protect the environment, and support the health of the forest.

Vermont Fish & Wildlife Department

Vermont Fish & Wildlife Department

5 https://fpr.vermont.gov/forest/managing-your-woodlands/cut-with-confidence

and overseeing the harvest process. They can also help with enrolling in Vermont's Use Value Appraisal (Current Use) program, which offers property tax reductions for sustainable forest management.

They help ensure that your forest is sustainably harvested, you get fair market value for your timber, and any contracts protect your interests.

Look for a Vermont licensed forester with experience, credentials, and good references. It's essential to choose someone familiar with Vermont's forestry practices, regulations, and the goals of your land.

Working With a Logger

Loggers are primarily, but not always exclusively, responsible for felling trees and transporting them to market. Their skill and adherence to Best Management Practices (BMPs) and legal compliance are critical for minimizing environmental impact, such as preventing soil erosion or water contamination.

While there is no state-level licensing or registration of loggers in Vermont, loggers should have experience and good references. Indeed, there are programs such as VT LEAP that promote a professional approach to logging by providing the knowledge necessary for loggers to harvest timber safely, efficiently, and in an environmentally conscientious manner., loggers should have experience and good references. It's important to contract with a logger who understands your forest management goals, has the appropriate experience and equipment, and is committed to sustainable practices. Your contract should specify how the logger will conduct the harvest, including BMPs for protecting the environment, the timing of the work, and responsibilities for close-out after the operation.

Working With Ecologists and Other Specialists

In addition to foresters and loggers, you may also benefit from the advice and assistance of other professionals like consulting ecologists, wetland specialists, and wildlife biologists. There are no licensing requirements for these professionals serving Vermont landowners, but as with foresters and loggers, you should only work with qualified professionals with appropriate education, training and experience.

Timber Sale or Forest Management Contracts

A written timber sale or forest management contract is essential for protecting both the landowner and the buyer. It spells out the terms of the sale, referencing the forest management plan, how the timber will be harvested, payment methods, and who is responsible for managing environmental impacts.

Key Elements:

- Names and contact information of sellers (you) and buyers (logger)
- Description of the timber being sold (species, volume, and location)
- Payment terms (lump sum or pay-as-cut)
- Harvest methods and timeline
- AMPs to protect soil, water, and remaining trees
- Post-harvest responsibilities, including site clean-up and reforestation, if needed

A consulting forester can help you negotiate a fair contract that ensures the logger or buyer is held accountable for meeting the agreed-upon terms.

The best timber sales balance economic goals with environmental stewardship. A forester can help landowners develop a forest management plan — and a forest management contract — that incorporates the protection of both water and wildlife resources while achieving sustainable timber harvests. The "Cut with Confidence" series includes critical guidelines for managing water and wildlife when conducting timber sales. The following is a summary of these components:

Water Resources and Acceptable Management Practices

Forests play a crucial role in protecting Vermont's water quality by filtering runoff, reducing erosion, and maintaining the health of rivers, streams, and wetlands. Poorly planned timber harvesting can lead to water pollution, sedimentation, and degradation of aquatic habitats. Acceptable Management Practices (AMPs) are guidelines that ensure timber harvesting is done in a way that minimizes environmental impact, especially on water quality and soil stability. These include proper planning of skid trails to reduce soil compaction, using stream buffers to protect waterways, and avoiding cutting during wet conditions to minimize damage to the land.

To avoid penalties and protect forest water resources from discharges, timber sale contracts should specify that AMPs must be followed. This helps prevent long-term damage to your forest and ensures compliance with Vermont's environmental regulations, including stringent water protection standards.

Wildlife and Habitat Considerations

Habitat-Friendly Harvesting: By working with a forester, landowners can design timber harvests that not only maintain, but also improve, wildlife habitat. As with county foresters, landowners may also meet with habitat biologists from the Vermont Fish and Wildlife Department for recommendations for habitat improvements that will fit into their FMP and harvest. Some habitat-friendly harvesting practices that benefit wildlife include:

- **Retaining Snags and Downed Trees:** Dead or dying trees (snags) and fallen logs provide essential habitat for many species, including woodpeckers, bats, and amphibians. These should be left standing or on the ground when possible. The recommendation is a minimum of six snags per acre.


Tim Stout

- **Retaining Tops and Branches of Harvested Trees:** Leaving portions of harvested trees unlopped to decompose slowly brings multiple ecologic and habitat benefits. Look beyond the "mess" to see its value in nutrient and moisture retention; erosion prevention; increased biodiversity through improved habitat for fungi, invertebrates, amphibians, birds and mammals; carbon storage; and shelter for regenerating seedlings and saplings against overbrowsing.
- **Diverse Age Structure:** A mix of young, mature, and old trees promotes a diverse habitat for wildlife. Foresters can design harvests that create openings for new growth while maintaining older trees that provide shelter and food sources.
- **Protecting Critical Habitats:** Timber harvests should avoid or minimize disturbance to critical wildlife areas, such as nesting sites for birds, denning areas for mammals, or vernal pools that support amphibians.
- **Seasonal Considerations:** Certain wildlife species are more vulnerable during specific times of the year, such as nesting or breeding seasons. Scheduling timber harvests around these times can reduce the impact on wildlife.
- **Wildlife Corridors:** Maintaining corridors that allow animals to move freely through the landscape is essential for species migration and genetic diversity. Foresters can help landowners design timber sales that preserve these connections between different habitat areas.

Non-Timber Forest Product Opportunities

Vermont forestland owners have a variety of ways to generate revenue and enjoy their woods beyond timber harvesting, taking advantage of the forest's diverse resources and ecology. The following is a summary of some non-timber forest product opportunities available:

Maple Sugaring

Maple sugarmaking is a rich tradition in Vermont, deeply intertwined with the land and its seasonal rhythms. For Vermont forestland owners, sugarmaking is both an opportunity for income and a way to sustainably engage with their land.

Understanding Maple Trees and Site Selection

- **Tree Species:** Sugarmakers primarily tap sugar maples, though red and silver maples can also be used. Sugar maples are preferred because they produce the highest sugar content in their sap.
- **Forest Management:** Sustainable sugaring begins with maintaining a healthy forest. Sugarmakers look for trees that are at least 10–12 inches in diameter and are growing vigorously. Forest management practices may include thinning and careful harvesting to ensure optimal tree health, crown development, and sap production.
- **Site Requirements:** An ideal sugarbush (or a stand of maple trees managed for sugarmaking) has well-drained moist soils, good sunlight, and is accessible for collecting sap.

Sustainable Management and Considerations for Maple Sugaring

- **Long-Term Tree Health:** Sustainable sugarmaking means prioritizing the long-term health of the sugarbush. Responsible tapping, periodic thinning, and pest control are important to avoid stressing the trees. There are programs that can assist in managing for sustainability such as organic certification or the Bird-Friendly Maple Project managed by Audubon Vermont.
- **Climate Adaptation:** Changing climate patterns are affecting sugarmaking seasons. Forestland owners are increasingly focused on maintaining healthy, diverse forests to build resilience.

- **Economic Opportunities:** Selling maple syrup provides an income stream that supports land conservation. Many sugarmakers also diversify with value-added products like maple candy, cream, and sugar, or by opening their sugarhouses for tours during sugaring season.

Many Vermont forestland owners don't make syrup themselves but still participate in the maple sugaring industry by leasing their land for tapping or selling sap directly to syrup producers. These options can provide a source of income with less equipment and labor investment, while still supporting sustainable forest management.

Leasing Land for Maple Sugaring

- **How it Works:** Forestland owners can lease their sugarbush to a sugarmaker, who takes on the responsibilities of tapping, sap collection, and often, syrup production. The lessee brings in their own equipment and handles the sugaring operations, while the landowner earns rental income — and usually some syrup too.
- **Lease Agreements:** Leasing agreements typically outline the duration of the lease, the number of taps allowed, and responsibilities for tree health and maintenance. They may also specify where equipment like tubing or storage tanks can be set up and include provisions for minimizing forest damage and maintaining tree health. It is important to ensure that these lease agreements align with your forest management plan, and that your forester is consulted about any tending of forests around sugarbush infrastructure."

Selling Sap to a Syrup Producer

- **Benefits of Selling Sap:** Selling sap is a lower-investment option compared to full-scale syrup production. Landowners can still be involved in sugaring without needing a sugarhouse or evaporator. It's also a flexible option, allowing landowners to gradually build experience in sugaring should they eventually want to expand into syrup production.
- **Sap Sales:** Sap is typically sold for between $0.20 and $0.60 per gallon depending on the sap's sugar content and market demand. The higher the sugar content, the more valuable the sap, as it reduces the amount of boiling time needed to reach syrup density.

Mark Raishart

For forestland owners, leasing or selling sap provides alternative ways to participate in Vermont's maple industry, especially for those who want to maintain a sugarbush but prefer a hands-off approach to syrup production. Each option offers the chance to generate income, support Vermont's sugaring heritage, and contribute to sustainable forest stewardship while enjoying the natural beauty of the sugarbush.

Wild Edibles and Medicinals

- **Mushrooms:** Foraging for wild mushrooms (such as chanterelles and morels) or cultivating high-demand varieties like shiitake and oyster mushrooms on hardwood logs in your woods can be profitable. These mushrooms are popular with local chefs and farmers markets.

- **Herbs and Medicinal Plants:** Ginseng, goldenseal, and ramps (wild leeks) are valued for culinary and medicinal uses. Cultivating these plants in shaded forest environments, or sustainably harvesting wild populations, can yield significant revenue, though some may require permits or careful management to avoid overharvesting.

Boughs, Cones, and Other Decorative Products

- **Balsam Boughs:** Boughs of balsam fir and other evergreen species are used to make holiday wreaths, garlands, and other decorations. This seasonal product has good market demand, particularly around the winter holidays.
- **Pine Cones and Branches:** Cones, branches, and even bark from various trees are used in craft and décor industries. They can be harvested sustainably and sold to local artisans or at craft fairs.

Bee Products

- **Forest-Based Beekeeping:** Forestland can support apiaries, or areas where beehives reside and bees produce honey, beeswax, and propolis. Forest areas with diverse flowering plants provide a rich environment for bees and allow forestland owners to sell honey and other bee products.
- **Pollination Services:** For those with a strong beekeeping practice, offering pollination services to nearby farms and orchards is another income stream. This is particularly relevant in Vermont's agricultural landscape.

Silvopasture and Agroforestry

There are many emerging possibilities for woodland

owners to combine their interests in agriculture with their forest stewardship. As exciting and promising as this is for some owners, it warrants careful consideration because while there can be compatible uses, agriculture and forest health are not automatically consistent.

The practices of integrating trees with agriculture have deep roots in indigenous and traditional systems worldwide. Before colonization, indigenous peoples of the Northeast managed complex forest-agriculture systems that included controlled burning, selective harvesting, and cultivation of diverse forest foods. Black farmers have also made significant contributions to agroforestry practices throughout American history, developing sophisticated systems that combined timber, fruit trees, and field crops—knowledge that has often gone unrecognized in mainstream agricultural education.

Today's renewed interest in silvopasture and agroforestry presents opportunities to recognize these traditional knowledge systems while developing practices appropriate for Vermont's contemporary ecological and social context.

It makes sense that including more trees and other forest elements in a pasture would enhance it and improve conditions for grazing animals. But including grazers, like cows in a forest will degrade it as a forest. In particular, hooves can be very harmful to tree roots (maples, for example, are notoriously shallow-rooted) and they may browse and damage the trees you want to grow.

Ultimately, the decision is the landowner's to make. A wooded pasture will likely be healthy and productive as a pasture, but probably won't remain a healthy forest in the long run.

- **Forest-Grazing Livestock:** Silvopasture involves integrating livestock like sheep, goats, or poultry into the forest to graze on vegetation. Managed grazing can provide revenue through meat, wool, or eggs while also controlling invasive species.
- **Nut and Fruit Production:** Vermont forests can support certain nuts and fruits, like hazelnuts and elderberries. These products are becoming more popular with consumers seeking locally-sourced ingredients.

Recreational Access and Eco-Tourism

- **Leasing Land for Recreation:** Forestland can be leased to hunters, hikers, or campers. Many Vermonters and tourists seek access to private land for activities like bird-watching, hunting, fishing, and even primitive camping. Such leased lands are not eligible for Use Value Appraisal.
- **Eco-Tourism and Education:** Some landowners set up forest-based experiences such as guided forest walks, birdwatching tours, or workshops on foraging and tree identification. This allows owners to share the ecological richness of their land while earning income.

Saplings and Seed Sales

- **Native Plant Nurseries:** Forestland can be used to cultivate native tree saplings and other plants for sale. Many Vermont residents and conservation groups seek native plants for reforestation and landscaping, offering a niche market for local growers.
- **Seed Harvesting:** Certain forest trees, such as sugar maple or white pine, produce seeds that can be sold to nurseries or landowners looking to establish or restore forests.

Sharing Benefits Equitably

As you develop forest-based activities, consider how these practices can contribute to more equitable access to land and its benefits:

- Explore cooperative models that share economic opportunities with community members who face barriers to land access
- Ensure that pricing allows access to products across income levels
- Develop mentorship opportunities for aspiring BIPOC foresters and farmers
- Acknowledge all sources of knowledge that inform your practices, especially indigenous and traditional ecological knowledge

Each of these non-timber forest products allows Vermont landowners to diversify their income while supporting conservation, the forest's ecological health, and social equity. When approached with attention to both ecological sustainability and social justice, these practices can help heal relationships between diverse communities and forestland while contributing to local economies and maintaining forest integrity.

Actions and Next Steps

- Engage licensed foresters, biologists, and conservation specialists such as USDA Natural Resources Conservation Service to assess your land's current condition.
- Use their expertise to create or revise your management plan, ensuring it aligns with best practices and legal requirements and that it clearly outlines your short-term, intermediate, and long-term stewardship goals.
- Set realistic timelines and prioritize actions based on urgency and ecological impact.
- Address immediate concerns like invasive species control, invasive plant removal, and wildlife habitat improvements.
- Keep detailed records of work done, ecological responses, and any changes in land conditions.
- Review and adapt your management plan annually or after significant events, ensuring responses to emerging challenges and opportunities.
- Collaborate with neighboring landowners, local organizations, and conservation groups to share resources and knowledge.
- Investigate federal and state programs such as Vermont's Use Value Appraisal (UVA), conservation easements, or carbon offset schemes.
- Develop succession and estate plans to ensure continued care and sustainable use beyond your ownership.

Chapter 10
Accessing Support for Stewardship

Voluntary Conservation Programs

Both Vermont and the federal government offer a range of incentive programs designed to support forest landowners in managing their properties sustainably while promoting conservation and stewardship. These programs provide financial assistance, technical expertise, and regulatory incentives to help landowners achieve their conservation and management goals.

One such program is Use Value Appraisal (Current Use), which offers reduced property taxes for forestland enrolled in the program (see Chapter 5). By maintaining their land in forest or agricultural use, landowners can qualify for significantly lower property tax rates, making forest ownership more affordable and economically viable.

Other incentive programs focus on specific conservation objectives, such as habitat restoration, water quality protection, and invasive species management. These programs may provide cost-sharing for conservation practices, financial incentives for conservation easements, or technical assistance for habitat improvement projects.

Landowners should explore voluntary conservation programs that offer financial and technical assistance for those interested in enhancing wildlife habitat, protecting water quality, and/or implementing sustainable land management practices. Programs such as the USDA's Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentive Program (WHIP) can provide valuable resources to support your conservation efforts.

Vermont Fish & Wildlife Department

- **Healthy Forests Reserve Program (HFRP):** This NRCS program provides easement and financial assistance for the restoration, enhancement, and protection of forestlands. The objectives of HRFP are to promote the recovery of threatened and endangered species, improve plant and animal biodiversity, and enhance carbon sequestration.
- **Conservation Stewardship Program (CSP):** The largest conservation program by acreage in the country, the CSP provides technical and financial assistance for agriculture and forest landowners to improve land conditions and implement conservation practices, including the development of wildlife habitats, on working lands.
- **Working Lands for Wildlife (WLFW):** This program offers technical and financial assistance for agricultural and forest landowners to improve terrestrial wildlife habitat connectivity and corridors on working lands.
- **Environmental Quality Incentives Program (EQIP):** EQIP helps farmers, ranchers and forest landowners develop and implement a conservation plan to address natural resource concerns and deliver environmental benefits such as improved water and air quality, increased soil health, and improved or created wildlife habitat.
- **Regional Conservation Partnership Program (RCPP):** Through NRCS easements and contracts with landowners, RCPP encourages public-private partnerships to implement conservation activities on eligible lands.
- **Agricultural Conservation Easement Program (ACEP):** The ACEP program has two components - Agricultural Land Easements (ALE), which protect croplands and grasslands on working farms by limiting non-agricultural uses of the land through conservation easements, and Wetland Reserve Easements (WRE), which aim to restore and enhance wetlands which have been previously degraded due to agricultural uses.
- **Conservation Reserve Program (CRP):** Administered by the Farm Service Agency (FSA), participating landowners receive rental payments and cost-share assistance to convert highly erodible and other environmentally sensitive acreage to long-term, resource-conserving vegetative cover, such as native grasses, trees, and riparian buffers.

Vermont Fish & Wildlife Department

- **Emergency Forest Restoration Program (EFRP):** Another FSA program, EFRP provides financial assistance to non-industrial private forestland owners to restore forestlands damaged by natural disasters.

Landowners interested in enrolling in these programs should consult with the staff at their local Natural Resources Conservation District (NRCD), or contact their local USDA Service Center to connect with Farm Service Agency and Natural Resources Conservation Service employees.

Tapping into Vermont's Network of Support

In addition to incentive programs, Vermont boasts a wealth of resources and organizations dedicated to supporting forest landowners in their stewardship efforts. These include state agencies, non-profit organizations, educational institutions, and local conservation districts, all of which offer valuable expertise, technical assistance, and educational resources.

For example, the Vermont Department of Forests, Parks, and Recreation provides forestry assistance through its county foresters, who offer free consultations and site visits to landowners seeking guidance on forest management practices. The Vermont Land Trust, Vermont Coverts and Vermont Woodlands Association also offer educational workshops, field tours, and networking opportunities for landowners interested in conservation and stewardship.

By tapping into this network of support, landowners can access the information, resources, and expertise they need to manage their forests sustainably and effectively. This collaboration fosters a sense of community and shared responsibility for Vermont's natural heritage, empowering landowners to make a positive impact on the landscape.

Actions and Next Steps

- Schedule meetings with your county forester, habitat biologists, conservation district representatives, or local natural resource agencies to discuss potential incentives and technical assistance. Seek guidance on preparing applications and developing conservation projects aligned with program requirements.
- Build connections with other landowners to share experiences, resources, and best practices for conservation and sustainable management.
- Gather necessary documentation and submit applications for incentive programs targeting habitat enhancement, water quality, invasive species management, and other conservation objectives.
- Subscribe to newsletters, mailing lists, and updates from relevant agencies and organizations.

Chapter 11
Embracing the Stewardship Journey

A. Blake Gardner

The journey of forest stewardship is a continuous and evolving process, rooted in a deep commitment to conserving Vermont's natural heritage for future generations. By taking proactive steps to understand, manage, and protect their forestland, landowners can make a lasting impact on the landscape and contribute to the overall health and resilience of Vermont's forests—all while deriving joy and satisfaction, as well as cherished family experiences and memories.

Vermont's forests exist within layered histories—as ancestral indigenous homelands, as landscapes transformed through colonization, and as ecosystems that have supported diverse communities in different ways over time. Responsible stewardship means holding this complexity while working toward a future where forests continue to thrive and where access to their benefits becomes more equitably shared.

From developing comprehensive management plans and promoting forest health to engaging with professionals and exploring conservation options, the path to responsible forest stewardship is paved with opportunities for growth, learning, and collaboration. By embracing this journey, forest landowners can ensure that their forests remain vibrant and thriving, sustaining the ecological, cultural, social, and economic values that define Vermont's unique character, heritage, and quality of life.

Through thoughtful planning, informed decision-making, and a commitment to long-term stewardship, landowners can create a legacy of conservation and sustainability that benefits both current and future generations. As stewards of Vermont's forests, they hold the keys to protecting the state's natural beauty, fostering biodiversity, and maintaining the ecological integrity of its landscapes.

The journey of forest stewardship is not one that landowners undertake alone. By connecting with resources, organizations, and fellow stewards, they become part of a broader community dedicated to understanding, protecting and enhancing Vermont's forest ecosystems. Together, they can navigate the challenges and seize the opportunities that come with responsible forest management, ensuring a bright and sustainable future for Vermont's forests and all who depend on them.

This guide is designed to support you in your journey as a forest landowner in Vermont. Whether you are a seasoned steward or new to forest management, we hope you find the information and resources provided here helpful in achieving your goals and enhancing the value of your land. We use the term "steward" intentionally, recognizing that while legal ownership is one framework for relationship with land, stewardship acknowledges our responsibilities to care for ecosystems that preceded us and will outlast our time here. Welcome to the community of forest stewards dedicated to preserving Vermont's forest legacy.

In closing, we extend our heartfelt gratitude to the forestland owners of Vermont for their dedication to stewardship and their unwavering commitment to preserving our state's natural heritage. Thank you for embracing the journey of responsible forest management. Your actions today will shape the future of Vermont's landscapes, ensuring that they remain healthy, resilient, and vibrant for generations to come.

Appendix 1
Basics of Selling Timber

1. Understand Your Objectives:

- Before initiating a timber sale, it's important to clarify your goals. Are you focused on maximizing profit, improving forest health, enhancing wildlife habitat, or supporting long-term sustainability? Your objectives will guide the type of harvest you plan and the management decisions you make.

2. Consult a Licensed Forester:

- A key step in selling timber is working with a licensed forester who can assess your forest's health and value. Foresters can develop a forest management plan that aligns with your goals and ensures sustainable harvesting practices. They can also help mark trees for cutting, estimate volumes, and provide insight into market conditions. Foresters protect landowners' interests by making sure they get fair value for their timber and follow best management practices (BMPs) to minimize environmental impacts. A consulting forester can provide valuable guidance throughout the process, including with the important considerations that follow.

3. Types of Timber Sales:

- **Lump Sum Sale:** In this method, buyers pay for the timber upfront based on a fixed price for the estimated volume. It's simple and guarantees payment, but may not always capture the highest value if the timber market changes.
- **Pay-As-Cut/Mill Scale:** The buyer pays based on the actual volume of timber harvested. While this can capture more accurate values, it requires more oversight and carries the risk of market fluctuations during the sale.

4. Finding a Buyer:

- Timber buyers can include sawmills, loggers, and contractors. A forester can help you connect with reliable buyers. It's crucial to get multiple bids and review the terms carefully, including who is responsible for felling trees, transportation, and other logistics. Be sure to enter into a written contract that spells out terms, including payment schedules, harvest timelines, and forest management protections.

5. Written Contract:

A detailed contract is essential for protecting the interests of both the landowner and the buyer. It should include:

- Description of the timber being sold
- Method of payment (lump sum or pay-as-cut)
- Specific cutting methods and Best Management Practices (BMPs) to avoid soil erosion, water contamination, and other negative environmental impacts
- Requirements for post-harvest clean-up and any reforestation efforts
- Dispute resolution methods

6. Sustainable Harvesting:

- Sustainable timber harvesting ensures the long-term productivity and ecological health of your forest. Foresters will help identify which trees to cut and which to leave standing, ensuring that future growth and biodiversity are maintained. BMPs, such as careful planning of skid trails and landing sites, help minimize damage to remaining trees, soil, and water resources.

7. Taxes:

- Income from timber sales is taxable, but landowners may qualify for federal income tax deductions or credits if the timber is managed as part of a business. It's important to consult a tax professional to understand how the income will affect your finances and which deductions you might qualify for.

8. Monitoring the Harvest:

- It's important to monitor the harvest process, whether you do it yourself or hire a forester to oversee the operation. This ensures that the contract is followed and that BMPs are properly implemented to minimize damage to the forest ecosystem.

APPENDIX 2

Understanding Regulations and Compliance — Ensuring Legal and Ethical Stewardship

Forest stewardship in Vermont is governed by a set of laws and regulations designed to protect natural resources, promote and ensure sustainable forestry practices, and safeguard public health and safety. This summary provides an overview of key laws and regulations that Vermont forestland owners should be aware of.

Act 250: Vermont's Land Use and Development Law

Act 250 is Vermont's comprehensive land use and development law that applies to certain forestland developments.

- **Development Thresholds:** Act 250 applies to subdivisions of land, developments on parcels over 10 acres (or over 1 acre in towns without zoning), and projects that may have a significant environmental impact, such as development above 2,500 feet. Other thresholds, including those relating to housing and public trails, may also trigger an Act 250 review.
- **Criteria:** The law requires consideration of environmental criteria such as water quality, wildlife habitat, forest fragmentation, and impacts on natural resources.
- **Permit Process:** Landowners must obtain an Act 250 permit before proceeding with qualifying developments. The permit process involves public hearings and review by the district environmental commission.
- **Silvicultural Exemption:** Accepted forestry practices are exempt from Act 250 below 2,500 feet elevation; such activities on lands above require an Act 250 permit.

Forest Practices and Timber Harvesting Regulations

Vermont has specific guidelines and best practices for timber harvesting to ensure sustainable forestry. Vermont does not require landowners to notify state authorities before conducting timber harvests, nor is there a requirement for a permit solely for the purpose of harvesting timber on private land. However, logging operations must adhere to Acceptable Management Practices (AMPs) to protect water quality and comply with other relevant environmental regulations.

- **Acceptable Management Practices (AMPs):** AMPs are guidelines designed to protect water quality during logging operations by minimizing soil erosion and preventing sediment and other pollutants from entering water bodies. While adherence to AMPs is not mandatory unless you are enrolled in the Current Use Program, following them under any circumstance is advised to reduce the chance of water pollution occurring during a logging operation. Landowners are liable for any discharges to a body of water that occur during a logging operation. The appropriate implementation of AMPs may reduce the overall level of legal liability, but landowners are advised to work with foresters and loggers to ensure these discharges do not happen.. AMPs cover practices such as maintaining buffer strips along waterways, proper road construction and maintenance, and careful planning of log landings and skid trails.
- **Heavy Cutting Law:** This law requires landowners to notify the Vermont Department of Forests, Parks, and Recreation if they plan to harvest more than 40 acres of forestland within a two-year period. It aims to prevent excessive deforestation and ensure regeneration.
- **The Right to Conduct Forestry Operations:** This law provides a legal, rebuttable, presumption that lawful forestry operations are not subject to nuisance lawsuits. It protects the rights of forestland owners and managers to carry out forestry activities, such as timber harvesting, without interference from local ordinances or nuisance lawsuits. The law ensures that sustainable forestry practices are recognized as important for the state's economy, environment, and culture. It provides legal protection for forest operations that follow accepted management practices, shielding them from claims of being a public or private nuisance, as long as the operations comply with state and federal laws. This law helps maintain Vermont's working forests by preventing unreasonable restrictions on forestry activities.

- **Licensing of Foresters:** It is unlawful to offer forestry services without a license from the Secretary of State's Office of Professional Regulation, which may be granted upon satisfaction of certain elements of education, training, and experience. Forestland owners should ensure that they take advice and guidance from qualified, licensed professional foresters.
- **Limitations on Municipal Bylaws:** No municipality shall create ordinances that regulate accepted silvicultural practices as defined by the Commissioner of the Vermont Department of Forests, Parks, and Recreation.
- **Timber Trespass and Theft:** Cutting, defacing, or removing trees without owner's consent and approval is both a civil and criminal offense with significant penalties.

Stephi Drago

- **Land Improvement Fraud:** Vermont's Land Improvement Fraud Law aims to protect property owners from deceptive practices by contractors or individuals offering land improvement services, such as landscaping, driveway paving, or tree removal. The law requires that contractors provide clear, written contracts detailing the scope of work, costs, and payment terms. It also includes provisions for penalties against contractors who misrepresent their services or take payment without completing the promised work. The law provides consumer protections by ensuring transparency and accountability in land improvement projects, reducing the risk of fraud and financial loss for landowners.
- **Chip Harvesting Requirements for Vermont Public Utilities:** Wood-fueled electrical plants in Vermont are required to obtain fuels from contractors that adhere to the harvesting standards imposed by the Vermont Public Utilities Commission. These same rules require forest owners who supply wood chips to these plants to obtain pre-harvest approval from the Vermont Fish & Wildlife Department.
- **Trucking:** There are numerous permits, limitations, and requirements that affect trucking in Vermont. This responsibility is typically handled by the log trucker. Contact your local municipality for information on any local permits, restrictions, or contact rules.

Protection of Water

The public trust doctrine in Vermont establishes that the state's waters, including lakes, rivers, and streams, are held in trust by the state for the benefit of the public. This doctrine ensures that all Vermonters have the right to use these waters for activities like fishing, boating, and swimming, while also preserving these resources for future generations. The state is responsible for managing and protecting these waters to maintain their ecological health and public accessibility, ensuring that they remain available for public use and enjoyment. Accordingly, there are several laws and regulations that apply to water, including:

- **Water Pollution Control Law:** Prohibits "discharges" into waters of the state, including wood debris from logging, oil, gas, or other pollutants.
- **Wetlands:** Vermont's Wetlands Protection rules regulate activities in and around wetlands to protect water quality, wildlife habitat, and flood control. Wetlands are classified into three classes (Class I, II, and III) based on their significance. Class I and II wetlands are subject to more stringent protections. Despite a general exemption for silviculture, certain activities that could impact Class I or II wetlands or their buffers (e.g., logging, road construction) typically require a permit from the Vermont Department of Environmental Conservation.
- **Stream Alteration:** A permit is required for alterations on perennial streams. Follow the AMPs for stream crossings and apply for a permit when needed.
- **Shoreland Protection Act:** The Shoreland Protection Act regulates land use activities within 250 feet of lakes and ponds greater than 10 acres in size. Landowners must obtain a permit for new development, clearing of vegetation, or excavation within the protected shoreland area. The Act also encourages practices that protect water quality, such as maintaining vegetative buffers, minimizing soil disturbance, and controlling erosion.

Legal Considerations For Wildlife

Various state and federal laws provide protections for significant wildlife habitats, including deer wintering areas, rare and endangered species habitats, and wetlands. The Vermont Fish and Wildlife Department provides resources to help identify and protect critical wildlife habitats (see Appendix 3). Landowners may need to modify management practices to avoid harming these certain species and their habitats. Landowners should also be aware of hunting, trapping, and fishing laws in the state.

- **Vermont Endangered Species Act:** It is unlawful for any person to take or possess an endangered or threatened species that is listed under the Vermont Endangered Species Act without a permit. As defined by statute, "take" refers to "pursuing, shooting, hunting, killing, capturing, trapping, harming, snaring, or netting wildlife," and "harming" includes the "destruction or imperilment of habitat that kills or injures a threatened or endangered species. Landowners with concerns about state-listed endangered or threatened species on their land should contact the Wildlife Diversity Program at the Vermont Fish and Wildlife Department. This program is responsible for monitoring, managing, and conserving non-game wildlife in Vermont and will lead in drafting and implementing recovery plans for at-risk species.
- **USFWS Endangered Species Act:** It is unlawful for anyone to "take" an endangered or threatened species of fish or wildlife that is listed under the federal Endangered Species Act without a permit. "Take" is broadly defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect," and the term "harm" includes "significant habitat modification or degradation." Landowners should contact the the U.S. Fish and Wildlife Service if they have concerns about federally-listed endangered or threatened species on their lands.
- **Hunting and Trapping Regulations:** Hunters are required to obtain licenses through Vermont Fish and Wildlife Department, and they must abide by hunting seasons dates.

Invasive Species Regulations and Management

Vermont has regulations and guidelines for controlling invasive species that threaten forest ecosystems. Vermont encourages the control of invasive species that threaten forest health, such as the emerald ash borer and hemlock woolly adelgid. While not legally required, forestland owners are advised to monitor and manage these species as part of their forest management practices. The Vermont Department of Forests, Parks, and Recreation provides resources and assistance for identifying and controlling invasive species.

Emerald ash borer

- **Prohibited Species:** Certain invasive plant and animal species are prohibited from being imported, sold, or distributed in Vermont.
- **Transport of Out-of-State Firewood:** To protect forest health, Vermont law prohibits the importation of untreated firewood which may carry infectious tree diseases or invasive insects.
- **Management Guidance:** Landowners are encouraged to manage invasive species on their property to prevent the spread and protect native biodiversity.

Public Access and Liability

Vermont law provides certain protections and responsibilities for landowners who allow public recreational access to their forestland.

- **Limited Liability Protections:** Landowners who open their land for recreational use (e.g., hiking, hunting, fishing) are generally protected from liability for accidents or injuries, provided they do not charge a fee for access and do not act with gross negligence or willful misconduct.
- **Posting and Signage:** Landowners can post their property to control access, but must comply with specific signage requirements.

Understanding and complying with Vermont's laws and regulations is essential for responsible forestland ownership and stewardship. By following these legal guidelines, forestland owners can ensure that their land remains productive, healthy, and sustainable for future generations while also contributing to Vermont's environmental and economic well-being. For detailed guidance and specific legal advice, landowners are encouraged to consult with professionals such as foresters, attorneys, and state agencies.

APPENDIX 3

General Publications and Resources for Stewardship and Conservation

Please visit www.vnrc.org/forestlandowners/guide for links to all the partners, programs and resources listed in this section.

Wildlife Management

- ***A Landowner's Guide – Wildlife Habitat Management for Lands in Vermont:*** This publication, created by Vermont Fish & Wildlife Department, serves as a manual for the management of land to benefit wildlife. It includes management for different habitats and for different species and natural communities.
- ***Backyard Wildlife Habitat In Vermont:*** This guide, written by the Vermont Fish and Wildlife Department, offers suggestions for enhancing habitats to attract wildlife on Vermont lands. .
- ***Vermont Wildlife Action Plan:*** This manual, updated every 10 years by Vermont Fish & Wildlife Department, identifies Species of Greatest Conservation Need and provides conservation strategies for species and habitat recovery. The Plan also identifies issues impacting wildlife and potential solutions that private landowners can undertake to assist with species recovery on their lands.
- ***Creating Wildlife Habitat in Your Backyard Woods:*** This video, created by the Vermont Fish and Wildlife Department and Vermont Urban & Community Forestry, provides information about wildlife throughout Vermont and instruction for creating habitats for wildlife.
- **Certified Wildlife Habitat:** Offered through a partnership with the National Wildlife Federation and Vermont Natural Resources Council, individuals can certify their yards and landscapes by maintaining or enhancing necessary criteria for wildlife to flourish.
- **Woods, Warblers, and Wildlife:** These resources, offered by Audubon Vermont, the Vermont Tree Farm Committee, Vermont Woodlands Association, and the American Forest Foundation, include site visits and information for landowners on how to improve wildlife habitat and maintain healthy woodlands.
- ***Technical Assistance for Landowners: Forestry for the Birds:*** Offered through Audubon Vermont, this factsheet provides information on how landowners may receive habitat assessments (some free of charge) and technical advice for forestland management that supports birds.
- ***Managing Your Woods with Birds in Mind - A Vermont Landowner's Guide:*** This guide, created by Audubon Vermont and the Department of Forests, Parks and Recreation, provides information on Vermont forest birds and habitat management guidance to help support birds.
- ***Forest Bird Habitat Assessment - A Guide to Integrating Bird Habitat Data into a Vermont Forest Inventory:*** This publication, offered by Department of Forests, Parks, and Recreation and Audubon Vermont, provides information on an integrative approach to timber harvesting management and bird habitat management.
- ***Silviculture with Birds in Mind - Options for Integrating Timber and Songbird Habitat Management in Northern Hardwood Stands in Vermont:*** This publication, offered by Vermont Department of Forests, Parks, and Recreation and Audubon Vermont, provides information on an integrative approach to timber harvesting management and bird habitat management.
- **What Posting Means:** This Fish and Wildlife Department website provides information on various posting laws and regulations, along with guidance for posting requirements related to hunting, fishing, and trapping.

Forest Management

- ***Vermont Forest Action Plan:*** This guide, periodically updated by the Department of Forest, Parks, and Recreation, provides an assessment of forest conditions in the state, as well as actions to improve and maintain forests for desired future conditions.

- ***Cut with Confidence:*** This series of guides, offered by the Department of Forest, Parks, and Recreation, provides timber harvesting information related to wildlife, water, economics, working with foresters and loggers, as well as general timber harvesting guidance.
- ***Vermont Voluntary Harvesting Guidelines:*** This guide, created by several different entities including the Department of Forests, Parks, and Recreation and Our Vermont Woods, provides tools and recommended practices for sustainable harvesting operations.
- ***What Will My Woods Look Like? Before and After Timber Harvesting:*** This website and associated publication from the Maine Department of Agriculture, Conservation and Forestry, offer considerations before timber harvesting, along with before and after images of various logging operations.
- **Managing Your Woodlands:** This Vermont Department of Forests, Parks, and Recreation website provides forest landowners with resources, guidance, and available programs for management of forestland.
- **Landowner Resources:** This Vermont Fish & Wildlife Department website provides landowners with management guidance and available programs related to wildlife.
- ***Restoring Old-Growth Characteristics to New England's & New York's Forests:*** This publication, created by UVM and UMass Amherst forestry scholars, provides information and forest management approaches to enhance old-growth forest restoration.
- **List of Vermont County Foresters:** Housed within the Vermont Department of Forests, Parks & Recreation, county foresters maintain records and maps of forestlands that are enrolled in the state's Current Use Program. They also provide assistance to landowners including developing management goals, strategies, and plans.
- **Working With A Professional:** This website, from the Department of Forests, Parks and Recreation, offers a list of different types of professionals to assist landowners in various initiatives from forest planning and management to surveys and consultations.
- ***The Forests of the Green Mountain State:*** This publication, written by the U.S. Forest Service and the Department of Forests, Parks, and Recreation, provides information about Vermont's forests, timber, and sustainability.
- **History of Forestry in Vermont:** This Department of Forests, Parks, and Recreation website outlines the history of forestry in Vermont, beginning in the 1700s.
- ***Introduction to Forest Ecology and Silviculture*** *(3rd edition):* This book, written by Thom McEvoy, provides information about how forest management practices, including timber harvesting, impact forest ecosystems.
- **Forest Health:** This Department of Forest, Parks and Recreation website provides links to various resources on forest health related to monitoring, information and technical assistance, pest management, and others.
- **Forest Health Management:** This Department of Forests, Parks and Recreation website provides links to management resources that address pests and the use of pesticides.
- **Future Climate-Adapted Tree Species:** This Northern Woodlands website offers information on how tree species are responding to climate change impacts and how forest landowners can manage their lands for future climate impacts.
- ***More Than a Woodlot - Getting the Most from Your Family Forest:*** This book written by Stephen Long takes an understandable approach to complicated ecological and forestry subjects.
- ***Old-Growth Forests: A Literature Review of the Characteristics of Eastern North American Forests:*** This publication, written by ecologist Marc Lapin, provides an overview of the characteristics and role of old-growth forests.

Land Conservation

- **Conserving Land - Answers to Common Questions:** This Vermont Land Trust website provides information on conserving land through their organization.
- **Conservation Resources:** This New England Forestry Foundation website provides general information and land trust resources to help landowners plan and manage for conservation.
- **Forest Legacy Program - FAQ:** Under this program, offered through the Department of Forests, Parks and Recreation, landowners may apply to enter into a conservation easement for the protection of forestlands from development to non-forest uses.
- **Healthy Forests Reserve Program:** Offered through the USDA Natural Resources Conservation Service, this program offers easements and financial assistance for the restoration, enhancement, and protection of forestlands.
- ***Conservation Easements and Property Valuation - How to Assess Land Permanently Encumbered by a Conservation Easement:*** This short guide, offered by the Vermont Department of Taxes, provides information on conservation easements, along with guidance for the most common types of easements.
- **Community Planning Toolbox - Conservation Easement:** This website, offered by the Vermont Natural Resources Council, offers information on conservation easements, along with additional resources on the subject.

Carbon and Climate Resilience

- ***Forest Carbon - An essential natural solution for climate change:*** This publication, created by UVM and UMass Amherst forestry scholars, provides information and forest management approaches to enhance carbon storage and sequestration functions of woodlands.
- **Forest Carbon Factsheet:** This resource, from Our Vermont Woods and Vermont Forests, Parks and Recreation, provides carbon uptake and storage information related to trees, forests, and forest landscapes in Vermont.
- ***Forest Carbon Markets for Vermont Landowners:*** This guide, from Forests, Parks and Recreation, provides information for landowners on selling forest carbon, carbon offsets, and various carbon offset projects.
- **Family Forest Carbon Program:** Developed by the American Forest Foundation and The Nature Conservancy, this program offers financial and technical assistance to forest landowners with 30 acres+ wishing to gain access to and income from the carbon market.
- **Climate Change Impacts on Northeastern Forests:** This Northern Woodlands website provides information on the impacts that climate change is having on Northeastern forests.
- **Securing Northeast Forest Carbon Program:** This program, offered by the North East State Foresters Association, provides guidance to private landowners on taking advantage of carbon markets, forest carbon management practices, and conservation easements.
- ***An Introduction to Forest Carbon:*** This article, from Northern Woodlands, addresses various forest carbon-related issues, from carbon sequestration and storage, to carbon potentials based on tree age and size, and the importance of Northeastern forests in helping to mitigate climate change impacts.
- ***Payments for Forest Carbon:*** This article, from Northern Woodlands, discusses carbon offsets, how a landowner can generate revenue selling carbon offsets, and considerations for enrolling in an offset program.
- ***Managing Forests for Carbon:*** This Northern Woodlands article provides strategies and information on managing forests for greater carbon benefit.
- ***Managing Forests for Resilience:*** This Northern Woodlands article addresses how to assess woodland vulnerabilities and management steps to enhance forest resilience and adaptation.

Water Quality

- ***Vermont Water Quality - Acceptable Management Practices:*** This manual, from Forest, Parks and Recreation, outlines management practices for timber harvesters as they relate to water quality and discharge.
- ***Water in the Woods: An Overview of Vermont's Acceptable Management Practices:*** This video, created by Vermont Urban & Community Forestry, addresses forest management for water quality.
- **NRCS's Vermont Water Resources:** This collection of Vermont water resources, developed by the U.S. Natural Resources Conservation Service, discusses protection initiatives for Vermont waters.

Invasive Species

- **Vermont Invasives:** Vermont Invasives is a collaborative effort between University of Vermont Extension, the Nature Conservancy, and various state government agencies, that provides galleries of different invasive species, along with educational opportunities and information on managing and reporting invasive species.
- **USDA's National Invasive Species Information Center - Vermont:** This website provides select Vermont resources centered around the management of invasive species.
- **FWD's Threats from Invasive Species:** This website, provided by the Vermont Fish and Wildlife Department, identifies and provides guidance on managing invasive species in Vermont.
- **DEC's Aquatic Invasive Species:** The Department of Environmental Conservation has created the Aquatic Invasive Species Program to educate people on the kinds of invasive species and the practices for addressing them.
- ***Vermont Landowner's Guide to Invasive Terrestrial Plant Management:*** This article, created by The Nature Conservancy, provides guidance to landowners one how to control and eliminate invasive species in Vermont.

Legacy Planning/Successional Planning

- ***For the Future of Your Forest - A Vermont Landowner's Guide to Woodland Legacy Planning:*** This guide was designed for landowners to develop and implement a strategy for passing on their forestland, as forestland, to the next generation.
- ***Planning Family Forests - How to Keep Woodlands Intact and in the Family:*** This book, written by Thom McEvoy, provides guidance and strategies for maintaining forestlands so that future family generations can enjoy them.

Multiple Resource Topics & Miscellaneous

- **Backyard Woods Course:** This self-paced online educational program, offered by Vermont Urban & Community Forestry Program, is geared toward landowners with less than 25 acres who wish to learn more about their woodlands and how to care for them.
- **Understanding the Land Ethic:** Offered by The Aldo Leopold Foundation, this website explains the philosophy of the land ethic and why it is important.
- **Resources for Woodland Owners and Managers:** This Vermont Woodlands Association website offers a compilation of woodlands management tools and resources on topics ranging from wildlife, taxes and timber, invasives, foresters, and more.
- **Vermont Coverts Resources:** Created by Vermont Coverts, this list of resources covers everything from state and federal landowner assistance programs, mapping, invasive species management, forest carbon, as well as a list of forestry, wildlife, and conservation organizations.
- ***Working Lands Enterprise initiative:*** A Vermont state grant program that makes strategic investments and develops policy recommendations that support a resilient and sustainable farm, food, and forest economy in Vermont.

Diversity/Equity/Indigenous Resources

- ***Black Land Stewardship in the Northeast:*** This publication, created by Cornell University and UMassAmherst, provides Black landowners' personal narratives about their experiences with forest ownership and stewardship, with the hopes of raising awareness about the "successes, barriers, and opportunities" experienced by the Black forest landowner community.
- **Abenaki Arts and Education Center:** This site provides information on authentic Abenaki cultural experiences and resources to foster a deeper understanding and appreciation of Abenaki heritage.
- **Women Owning Woodlands:** This resource, overseen by Forest Stewards Guild, provides information, events, personal stories, and support for female forestland owners.
- **Northeast Farmers of Color Land Trust:** An organization working to advance land sovereignty in the Northeast through permanent and secure land tenure for BIPOC farmers, healers, and land stewards. They offer resources on cooperative land management models and ways for current landowners to support more equitable land access.
- **Liberation Ecosystem:** A network that centers BIPOC leadership in building regenerative land-based economies and healing relationships with ecosystems. They offer consulting, educational resources, and partnership opportunities for landowners interested in decolonial approaches to forest stewardship.
- **First Light Learning Journey:** A collaborative effort between Tribal Nations in Maine and conservation organizations to expand indigenous access to ancestral territory. Their toolkit provides models for landowners to develop meaningful partnerships with indigenous communities.
- **Black Farmer Fund:** This community-governed investment fund supports Black farmers and land stewards in the Northeast with resources, capital, and technical assistance. Their case studies highlight successful Black-led forest and farm enterprises that contribute to ecological and community health.
- **Indigenous Environmental Network:** Offers resources on indigenous-led conservation models, traditional ecological knowledge frameworks, and guidance for non-indigenous landowners on building respectful relationships with tribal nations.
- **Sustainable Forestry and African American Land Retention Network:** A program that helps African American landowners maintain and utilize their forest land as a legacy for their families. They offer technical assistance, educational resources, and community support. /
- **Center for Whole Communities:** Based in Vermont, this organization offers training and resources on land, leadership and equity, with specific programs addressing racial justice in land stewardship. Their "Whole Thinking Practices" framework helps landowners integrate justice considerations into management decisions.
- **Vermont Land Access and Opportunity Board:** This state-established board works to promote equity in land access and ownership by addressing historical and continuing barriers faced by BIPOC communities and other marginalized groups in Vermont. The board develops programs and policies to increase land access, supports wealth-building opportunities through land stewardship, and provides resources for more equitable distribution of Vermont's land base. Their work includes advising on land return initiatives and creating pathways for historically excluded communities to access forestland for cultural, economic, and ecological purposes.

Data, Mapping, and Inventory Tools

- **Natural Resources Atlas:** This web-based mapping tool was developed by the Vermont Agency of Natural Resources to provide geographic information about environmental features and sites that the agency manages, monitors, permits, or regulates. It is a good place to start in developing local maps for planning purposes.
- **BioFinder:** This is another web-based mapping tool that was developed and updated in 2024 by the Vermont Agency of Natural Resources for identifying Vermont's lands and waters that support high priority ecosystems, natural communities, habitats, and species. The most comprehensive assessment of its kind in Vermont, BioFinder was developed to further collective stewardship and conservation efforts. BioFinder differs from the Natural Resources Atlas in that the program can analyze the data and indicate statewide priority rankings.
- ***Vermont Conservation Design:*** This report, created by the Vermont Agency of Natural Resources, is a science-based framework to maintain and enhance ecological functions and natural habitats throughout Vermont. .
- **iNaturalist App:** This free smartphone or tablet based tool allows users to snap a photo of wild organisms and upload the photo with the location. The app will populate a list of suggested identifications according to location, and the iNaturalist community can help make identification suggestions on uploads that are shared publicly. Shared uploads also contribute to important citizen science research and projects.
- **Merlin Bird ID app:** This free smartphone or tablet based tool, provided by Cornell Lab of Ornithology, helps users identify birds in their area through sound and photo identification.
- **eBird App:** This free smartphone or tablet based tool, provided by Cornell Lab of Ornithology, allows users to record and share bird observations. The app will populate a list of suggested identifications according to location, and shared uploads contribute to important citizen science research and projects.
- ***Wetland, Woodland, Wildland - A Guide to the Natural Communities of Vermont:*** This book, written by Elizabeth Thompson, Eric Sorenson, and Robert Zaino, and published by The Nature Conservancy, Vermont Fish and Wildlife Department, and the Vermont Land Trust, serves as a comprehensive guide to understanding Vermont's wetlands, woodlands, and wildlands.
- **Plant Inventory:** This Vermont Fish and Wildlife Department website provides a list of Vermont plant resources.
- **Identification Resources:** This Vermont Center for Ecostudies website provides a list of Vermont plants, animals, and fungi resources.
- **Native Land Digital:** Native Land is an app to help map Indigenous territories, treaties, and languages.

Entities and Programs: Municipal, State, and Federal

- **Vermont Fish & Wildlife Department:** The Vermont Fish & Wildlife Department is part of the Vermont Agency of Natural Resources. Their mission is "the conservation of fish, wildlife and plants and their habitats for the people of Vermont." The Vermont Fish & Wildlife Department provides a broad range of services to the public including wildlife and fisheries management, threatened and endangered species monitoring and restoration, habitat conservation, and educational programs for hunters, young people, and teachers.
- **Vermont Department of Forests, Parks & Recreation:** The Vermont Department of Forests, Parks & Recreation is part of the Vermont Agency of Natural Resources. Their mission is "to practice and encourage high quality stewardship of Vermont's environment by: monitoring and maintaining the health, integrity and diversity of important species, natural communities, and ecological processes; managing forests for sustainable use; providing and promoting opportunities for compatible outdoor recreation; and furnishing related information, education, and service." Landowners can find information on everything from county forester programs to acceptable management practices for maintaining water quality, and much more.
- **Forest Stewardship Program:** resources and assistance in developing a Forest Stewardship Plan to help Vermont forest owners care for their woodlands.
- **Forest Legacy Program:** landowners enter into a conservation easement to protect forestlands from development to non-forest uses.
- **Use Value Appraisal Program:** a program through the Department of Taxes, Division of Property Valuation and Review and the Division of Forestry, allowing eligible landowners who manage their lands for forestry or agriculture to enroll to have their land appraised based on production values for tax purposes. Forest landowners may also enroll as Reserve Forestland which are lands managed to advance old-growth forest conditions or Ecologically Significant Treatment Areas which are managed to protect ecological sites.
- **County Foresters:** Housed within the Vermont Department of Forests, Parks & Recreation, county foresters maintain records and maps of forestlands that are enrolled in the state's Current Use Program. They also provide assistance to landowners including developing management goals, strategies, and plans.

- **U.S.D.A. Natural Resources Conservation Service:** The Natural Resources Conservation Service "provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment." Diverse technical and financial assistance programs and resources are available related to maintaining water quality, soil productivity, forestry management planning, and others.
  - **Healthy Forests Reserve Program (HFRP):** Provides easement and financial assistance for the restoration, enhancement, and protection of forestlands to promote the recovery of threatened and endangered species, improve biological diversity, and enhance carbon sequestration.
  - **Conservation Stewardship Program (CSP):** Provides technical and financial assistance for agriculture and forest landowners to improve land conditions and implement conservation practices, including the development of wildlife habitats, on working lands.
  - **Working Lands for Wildlife (WLFW):** Offers technical and financial assistance for agricultural and forest landowners to improve terrestrial wildlife habitat connectivity and corridors on working lands.
  - **Environmental Quality Incentives Program (EQIP):** Helps farmers, ranchers and forest landowners develop and implement a conservation plan to address natural resource concerns and deliver environmental benefits such as improved water and air quality, increased soil health, and improved or created wildlife habitat.
  - **Regional Conservation Partnership Program (RCPP):** Through easements and contracts with landowners, encourages public-private partnerships to implement conservation activities on eligible lands.
  - **Agricultural Conservation Easement Program (ACEP):** The ACEP program has two components - Agricultural Land Easements (ALE), which protect croplands and grasslands on working farms by limiting non-agricultural uses of the land through conservation easements, and Wetland Reserve Easements (WRE), which aim to restore and enhance wetlands which have been previously degraded due to agricultural uses.
- **U.S.D.A. Farm Service Agency:** The Farm Service Agency's mission is to equitably serve all farmers, ranchers, and agricultural partners through the delivery of effective, efficient agricultural programs for all Americans." The Farm Service Agency offers a range of assistance programs to assist with soil erosion, water protection, and wildlife habitat preservation, and others.
  - **Conservation Reserve Program:** Provides rental payments and cost-share assistance to convert environmentally sensitive acreage to long-term, resource-conserving vegetative cover.
  - **Emergency Forest Restoration Program:** Provides financial assistance to restore forestlands damaged by natural disasters.
- **U.S.D.A. Forest Service & Green Mountain National Forest Service:** The Green Mountain National Forest provides ecological and science-based forestry stewardship, clean water, diverse vegetation, high-quality forest products, economical and educational contributions, and trail-based backcountry recreation. Financial assistance through grants and cooperative agreements is available to cooperators from the Forest Service (primarily Research and State and Private Forestry units).
- **Landscape Scale Restoration Program:**
- **Forest Ecosystem Monitoring Cooperative:** This organization, offered through Northeastern State Agencies, the University of Vermont, and the U.S. Forest Service, provides forest ecosystem data, monitoring, tools and products, services, and opportunities to collaborate on initiatives.

Conservation and Stewardship Organizations

- **Audubon Vermont:** Audubon Vermont is a nonprofit organization providing environmental awareness and education programs such as the Forest Bird Initiative, which integrates science, education, public policy and forest management expertise to conserve forests within Vermont that are important to birds.
- **Cold Hollow to Canada:** A community based organization for Vermont's northern Green Mountain forest region, this organization updates its strategic plan for sustainable stewardship, forest conservation, and community empowerment every five years.
- **Consulting Conservation Biologists of Vermont:** This group consists of ecologists, zoologists, botanists, and conservation planners who are trained in the principles and practices of conservation biology. They can assist towns, watershed associations, multi-town groups, and individual landowners with ecological assessment, conservation planning, and site management planning. To learn more, call Liz Thompson at 802-861-6413.
- **Consulting Foresters:** Consulting foresters assist private landowners in identifying and achieving goals for their woodlands, including managing for forest products, wildlife habitat, recreation, water resources, and aesthetics. Services provided by consulting foresters include forest resource planning, marking trees to be removed, preparing and negotiating contracts, administering sales of forest products, appraisals and inventories, and assisting in tax treatment of woodlands.

- **Forest Stewards Guild:** The Guild engages in education, training, policy analysis, research, and advocacy to foster excellence in stewardship, support practicing foresters and allied professionals, and engage a broader community in the challenges of forest conservation and management. #
- **Keeping Track®:** An organization that assists individuals in monitoring habitats for wildlife to help determine the status of different species through various programs, workshops, and trainings.
- **Land Trust Alliance:** An organization dedicated to land trust initiatives and strengthening conservation throughout the nation.
- **Merck Forest:** Merck Forest's mission is "to inspire curiosity, love and responsibility for natural and working lands." This organization offers events, programs, and publications on various topics.
- **National Wildlife Federation:** NWF works to inspire Americans to protect wildlife for our children's future. Through the Certified Wildlife Habitat program, individuals can certify their land or a portion of their land by creating habitats that attract different wildlife.
- **Northeast Wilderness Trust:** A land trust dedicated to preserving wilderness and rewilding by allowing lands to mature into old growth forests.
- **Northern Woodlands and the Center for Northern Woodlands Education:** A magazine and organization that advocates for a culture of forest stewardship by providing educational information on caring for woodlands.
- **Northwoods Stewardship Center:** An organization dedicated to education, research, and conservation with programs that provide "the knowledge and skills needed to understand the northern landscape, make use of its resources wisely, and help sustain vibrant communities and a healthier natural environment."
- **Staying Connected Initiative:** SCI seeks to enhance and protect landscape connectivity for animals and people in the northeastern U.S. and eastern Canada, including parts of Vermont, New York, New Hampshire, and Maine.
- **The Nature Conservancy (Vermont):** TNC is a global conservation organization working nationwide and around the world to protect ecologically important lands and waters for nature and people. TNC offers tools to landowners to conserve their property through land trusts, conservation easements, private reserves, and incentives, including the Family Forest Carbon Program in which landowners receive compensation for implementing carbon sequestration enhancing forest management practices.
- **The Trust for Public Land (Vermont):** TPL secures conservation easements on lands until the public is able to purchase them for the creation of community forests, parks, trails and other important public places.
- **University of Vermont - Extension:** UVM offers a range of forestry resources related to climate change, forest carbon, forest health & ecology, and forest management & planning.
- **Vermont Center for Ecostudies:** VCE offers biodiversity research and monitoring projects with a science-based approach to maintaining healthy ecosystems.
- **Vermont Coverts: Woodlands for Wildlife:** Vermont Coverts is a nonprofit peer-to-peer organization that works to connect people to the land, wildlife and each other, providing education and outreach on sound forest management and wildlife stewardship. They offer landowner trainings, workshops and webinars on wildlife, forests, successional planning and more.
- **Vermont Family Forests:** VFF is a family forest conservation organization that provides research and education programs along with consulting services in support of "family ecoforestry."
- **Vermont Housing and Conservation Board:** VHCB is an independent, state-supported funding agency that provides grants, loans and technical assistance to nonprofit organizations, municipalities and state agencies for the development of perpetually affordable housing and for the conservation of important agricultural land, forestland, recreational land, natural areas and historic properties in Vermont.
- **Vermont Land Trust:** VLT is a member-supported, nonprofit land conservation organization that provides technical and legal assistance to individuals, communities, and local land trusts to help them achieve their conservation objectives.
- **Vermont Natural Resources Council:** VNRC's mission is to protect and restore Vermont's natural resources and environment for present and future generations through research, education, collaboration and advocacy. VNRC assists landowners, communities and all levels of government with innovative strategies for conserving forestland and wildlife habitat.
- **Vermont Trails & Greenways Council:** VTGC works to improve the trail systems throughout Vermont, and provides information for landowners interested in establishing trails on their lands.
- **Vermont Woodlands Association:** A nonprofit organization that strives to educate, train, and support private forest landowners in sound forest management practices that support wildlife, water quality, wood products and recreation. VWA also sponsors successional planning, community, and teacher educational programs.

VNRC

VERMONT NATURAL
RESOURCES COUNCIL

11 BALDWIN STREET
MONTPELIER, VT 05602

Email: info@vnrc.org
Web: www.vnrc.org
Instagram: @vt_naturalresources