



NEW ENGLAND
FORESTRY
FOUNDATION

FOREST MANAGEMENT: AN INTRODUCTION FOR NON-FORESTERS

New England Forestry Foundation’s Approach to Forest Management: An Introduction for Non-Foresters

New England Forestry Foundation encourages forestry in the region to provide society with green, sustainable and ecologically sound wood products, as well as ecosystem services like clean water, fresh air, and wildlife habitat.

Society needs the products and services forests provide; on average, each American consumes 3,000 pounds of wood per year in various forms, including furniture, building structures, and paper. Look around you and identify the products made of wood. Then consider other, non-wood substitutes. Plastics are typically fashioned from petroleum. Steel and concrete must be heated to over 2,700 degrees Fahrenheit using fossil fuels, and rely on raw materials mined from the earth. These non-wood products are not sustainable or renewable, and they are burdened with the geopolitics of fossil fuels and climate change. That is why wood products are a logical green choice in our quest for sustainability.

Maximizing our use of wood products can reduce our use of fossil fuels, and maximizing our use of New England wood products helps ensure those materials are produced without shifting demand to tropical forests, where wood production is far more likely to cause deforestation or other negative impacts. New England forests are resilient—capable of naturally regenerating from cutting or other disturbances without loss of soil fertility—and the quality of forestry in the region is excellent, helping ensure that New England wood is truly a sustainable, renewable resource. In addition, studies show that well managed forests here in New England do a better job than unmanaged forests in protecting drinking water quality (for example, protecting Boston’s Quabbin reservoir) when faced with extreme weather events. Forestry also benefits New England wildlife species that depend on young forests such as those created through harvesting. Sustainable wood, clean drinking water, wildlife habitat—these are just some of the reasons that New England Forestry Foundation believes in forestry.

Specifically, the organization promotes high quality forest management conducted in a landscape context, an approach we call Exemplary Forestry and describe in more detail later in this document. For 74 years New England Forestry Foundation (NEFF) has advocated for improvement in forestry practices. Now, with demands on forests greater than ever, NEFF aims to promote Exemplary Forestry widely across the region in order to deliver the best outcomes from our forests.

New England Forests: The Path to Sustainability

If society didn’t require the goods and services that forests provide or want to nurture wildlife habitat, there would be little need to practice forestry and manipulate forests through thinning and harvests. Wild or natural forests do well on their own; old age, natural mortality, ice damage, wind throw, pest damage, and other disturbances are part of the natural changes in forests over time. Forest harvesting

often evokes mixed feelings; people everywhere endow trees with emotional energy and layers of meaning. Trees are among the oldest and largest living organisms and their importance to human health and well-being is scientifically proven. They form the backdrop of our lives here in New England. Trees appear in our poems, our paintings, and our songs. When they live interdependently in groups known as woods or forests, the whole forest is much greater than the sum of its parts. New England also is blessed with good soils and plenty of rain, so trees grow back following harvest or other disturbances without human intervention.

But just as New Englanders have long demanded options to purchase local, sustainably produced food, local forests similarly can provide us with sustainable, local products and many people in the region see that fostering that demand is critical to regional sustainability. Understanding the connection between consumption and production for wood is more challenging than for food, however. Most New Englanders don't perceive themselves as making wood purchasing decisions. Our needs for some wood products—like a house or furniture—occur only over long intervals, and wood products we buy frequently (such as toilet tissue or greeting cards) are so processed that their connection to trees is not obvious.

NEFF's [Path to Sustainability](#) report identifies twelve important forest benefits to society including providing wildlife habitat, improving air and water quality, protecting human health, creating local jobs, and reducing our use of foreign oil.

NEFF's [Build It With Wood](#) initiative is a perfect example of how exemplary forestry is inseparable from regional sustainability, in this case the quest to mitigate climate change. Over the next 50 years, hundreds of thousands of residential and business buildings from 4-12 stories tall will be built around the world to accommodate three billion more people and a globally urbanizing population. Currently such mid-rise buildings are largely constructed with steel and concrete, two materials whose production processes consume massive amounts of energy and emit carbon pollution. If we follow this path, a great deal of carbon will enter the atmosphere and exacerbate global warming just from construction of new buildings. An alternative path is to build tall structures with wood grown and harvested from sustainably managed forests, some of it right here in New England. The carbon our trees have pulled out of the atmosphere stays sequestered in the buildings, and the energy-intensive production of steel and concrete never takes place.

Although each New Englander uses a tremendous amount of wood, right now the majority of that wood is harvested outside our region and imported to New England, and may or may not have been grown or harvested sustainably. An important Harvard University paper, *The Illusion of Preservation*, examines how displacing the burden of producing wood to other regions and countries does not lead to regional or global sustainability. (Mary M. Berlik, David B. Kittredge, and David R. Foster 2002 *J. Biogeography* 29, 1557–1568, available for download [here](#).)

To move in the right direction we need to produce as many forest products as possible here in our region by practicing more exemplary forestry on more forest ownerships, all while ensuring we have

allocated the right amount of land to wildland forests and preserves, agriculture, and renewable energy development.

This societal imperative is best reflected by the report *Wildlands and Woodlands: Farmlands and Communities*—a picture of the next 50 years of forests and forestry in New England published by Harvard Forest, Highstead Foundation and New England Forestry Foundation, and championed by a growing number of partners. The vision calls for protecting 30 million acres of forestland—or 90 percent of the current forest cover—with three million acres set aside as wild forests and 27 million acres of productive managed forests. NEFF wholeheartedly embraces and integrates the Wildlands and Woodlands vision into its organizational mission. NEFF works closely with the Wildlands and Woodlands partnership to describe the type of forest management that should be practiced on those 27 million acres and the organization intends that NEFF’s vision for Exemplary Forestry will influence the management of those lands.

Under Exemplary Forestry, the forests of New England could provide clean air and water, improved wildlife habitat, and recreational access, while still producing twice as much wood as they do now. Achieving that goal, however, requires the implementation of exemplary forestry techniques in more forests.

To What Standards Does NEFF Hold Itself?

New England Forestry Foundation practices forestry on our own network of community forests to demonstrate exemplary techniques of forestry, to educate the public as to the benefits and techniques of forestry, and arouse public interest in the societal benefits forests can provide, and to advance scientific understanding of forests and forestry. New England Forestry Foundation’s forests are demonstration areas where the region’s 170,000 other private forest landowners can learn the skills, tools, practices and techniques needed to practice exemplary forestry on their own lands. When NEFF earns income from its forest harvests, those funds are directed right back into its educational programs or used to expand NEFF’s forest ownership.

Here are some of the principles NEFF stands by, the standards NEFF holds itself to, and the practices NEFF employs to make this happen.

NEFF’s work is guided at the top end by ethical principles of conduct articulated by the profession of forestry. The golden rule that guides us is to leave our forests better than when we found them—similar to the medical profession’s mandate to do no harm. This mandate and others are embodied in the principles developed for the [Grey Towers Protocol](#). NEFF embraces the ethical codes of the [Society of American Foresters](#) and the [Forest Stewards Guild](#) that direct NEFF’s ethical responsibilities to the public good as well as to the ecological well-being of the forest.

Third party reviewers audit all of NEFF's forestry to give the organization accreditation under the Forest Stewardship Council and the Tree Farm program. Through the association with the Tree Farm Program we are also accredited under the Sustainable Forestry Initiative. These voluntary certifications give the public assurance that NEFF's work is excellent. In addition, NEFF follows all the relevant state regulations involving forestry, harvesting, and inland wetland protection. Finally, NEFF is committed to following the Best Management Practices that exist in each of the states it operates in.

These programs and regulations establish basic guidelines for the practice of forestry. If they are followed, NEFF as well as the public can be reasonably certain the organization is practicing sustainable forestry. However, NEFF's goal lies beyond following Best Management Practices and meeting the goals of sustainability; NEFF strives to practice Exemplary Forestry as a model for other forest landowners and as a way for forests to participate more robustly in achieving regional sustainability and mitigating climate change.

Exemplary Forestry: What It Means and How NEFF Applies It

New England Forestry Foundation was founded to encourage more environmentally sensitive and productive management of the region's forests. NEFF's Exemplary Forestry practices aim to balance society's material needs with the ecological health of the forest across multiple landowners. In this short overview, we will introduce Exemplary Forestry and provide resources for you to learn more if you are interested.

Exemplary Forestry does not dictate one single harvest technique or goal for forest structure for every acre the organization manages; the approach analyzes and responds to site characteristics, history, landscape context, and current forest condition. Exemplary forestry is organized around seven core principles:

- 1. Maintain and restore natural forest capital.** New England forests have evolved over millennia to be naturally productive, resilient, and efficient. The productive capacity of the soils and the natural heritage of species and their genetic diversity must be maintained. The natural disturbance regimes that shaped the components of the New England forests provide a template for forest management. Our interventions should mimic these patterns as closely as possible while still providing an economically viable approach to producing the goods and services required by twenty-first century society.
- 2. Grow more than is harvested.** Exemplary Forestry calls for assessing the productive capacity of the land and estimating its potential, and then aiming to harvest less than will grow through each harvest cycle. This creates a margin of productive capacity to maintain ecological values and optimal stocking, even in face of unpredictable events such as ice storms or hurricanes.

3. **Encourage native species.** New England is blessed with a variety of tree species that grow well in our climate. Some perform better than others on different sites. Exemplary Forestry works with these native species and encourages them to grow where they will be most productive.
4. **Grow high-value products.** Certain species have qualities that make them more adaptable for societal use; they may produce wood that is more resistant to rot, or easier to saw into lumber, or harder and more resilient for heavy use such as flooring. In addition, individual trees may grow straighter and taller due to variations in their history and site conditions—trees may bend when growing on steep slopes, may branch earlier in their lives if growing in an open field, or may have damage from past ice storms, lightning strikes or other disturbances. Exemplary Forestry calls for selecting high quality individuals of diverse native species adapted to their sites.
5. **Aim for a multi-aged forest.** Young, middle-aged, and mature forests all have different qualities for wildlife and thus support different species of wildlife. Exemplary Forestry calls for maintaining representation of all age classes across the landscape. This requires management of any one property to be adjusted depending on the condition of other forests in the immediate vicinity, creating young forests where early-successional forests are rare, and nurturing older forests in younger forest landscapes.
6. **Maintain stocking above regional averages.** Stocking refers to the amount of wood present in a forest at any given point in time. It is frequently measured in cords of wood per acre. In New England, higher stocking levels tend to produce more growth—more additional wood each year—than lower stocking levels. Exemplary Forestry aims for stocking that will produce the greatest amount and value of products while maintaining ecological values. For example, NEFF-owned properties currently carry 33 cords per acre, far above the average for New England as a whole. This is an outcome of NEFF’s application of high quality forestry over decades. While the average may temporarily decrease if the organization acquires new lands that are not as well-stocked, these elevated levels are the organization’s long term target. They are in line with other well-managed New England forests and considerably more than the regional average.
7. **Practice forest management techniques best suited to the specific site.** Most forests in New England are even-aged—meaning most of the trees in the forest are the same age. This ubiquitous pattern often dictates which management approaches can be used effectively. The dominance of even-aged forests limits the diversity of wildlife in the region and lessens forests’ resilience to climate change, major weather events, and insect infestations.

Foresters can address even-aged forests through applying one or another of the techniques developed over decades through the practice and study of silviculture—the science that studies growth and management of forests. These techniques include single tree selection, shelterwood harvests, seed-tree harvests, group selection, and clear cuts. Descriptions of the use of each of these techniques can be found [here](#).

On its own properties, NEFF frequently uses group selection, in which small patches of trees are removed. When NEFF returns in 15 or 20 years for the next harvest, desired species will have regenerated in the initial patch, and the organization can either enlarge the patches or create new patches to encourage the growth of trees in the original patch, and to allow additional regeneration in the newly harvested area. With time and repeated harvests, group selection leads to a new forest of diverse age classes while always maintaining some large mature trees that most people find attractive. This practice is sometimes called continuous-cover forest management. Another fancy name for this technique is the Femelschlag approach and you can learn more about it [here](#).

When a group of trees larger than about 5 acres is removed, the result is a clearcut. Despite the public concern, clearcutting may be called upon where mature trees are in poor health or condition due to ice damage, insect infestation or other disturbances, or to create habitat for birds and mammals requiring larger patches of early-successional forest—such as lynx.

NEFF has produced a [one-page document](#) that provides a short, technical description of the standards and metrics that comprise exemplary forestry.

Read Further and Get Involved

If you'd like to learn more about New England Forestry Foundation and its approach to forest management, start by exploring [newenglandforestry.org](#) and [visiting one of our forests](#). When they're available, you can also register for one of NEFF's Forester for a Day training sessions [here](#).

For more in-depth information about forestry, experts at NEFF have compiled these useful documents and reports:

- [Path to Sustainability](#)
- [NEFF Guide to Sustainable Forestry](#)
- [Exemplary Forestry in the Acadian Forest Region](#)
- [Standards and Metrics of Exemplary Forestry](#)
- For property-specific Forest Management Plans, contact cpryor@newenglandforestry.org

If you are considering managing your forestlands, NEFF recommends you hire a consulting forester to work in your best interest. More information: [newenglandforestry.org/learn/forestry/landowner-faq](#)

Many landowners wish to permanently protect their land for forest management, and NEFF can explain how to do so through a conservation easement or donation. More information: [newenglandforestry.org/learn/land-conservation/how-to-conserve-land](#)