

Welcome to an Active Timber Harvest

By Dave Anderson



The Forest Society owns more than 165 permanent reservations totaling nearly 50,000 acres statewide. Most winters, we invite the public to tour our reservations when logging contractors are conducting active timber harvests. Some people wonder why we would invite neighbors and even potential critics to witness logging operations that necessarily alter the landscape and create visual chaos—logs, stumps, limbs, and slash.

The reason is simple: sustainable forest management yields healthy forests and is among the tools that make land conservation possible. We welcome the opportunity to demonstrate this principal in action—to show our visitors how to see past the temporary chaos created by logging operations and to better appreciate the long-term benefits of a well-managed forest.

It Starts with a Plan

Sustainable forestry begins with a plan. A good forestry plan outlines the landowner's objectives, identifying the trees to be cut and those to be left to grow until the next stand re-entry. Harvest boundaries and trees to be cut are marked by blue paint. Sometimes desirable crop trees to remain after the harvest are flagged with pink ribbon, so loggers develop an eye for operating their machinery around the trees that the forester is attempting to favor and "release" by removing competing trees.

Occasionally, a prescription for silvicultural clear-cutting is part of the overall forestry plan. Even-aged clear-cuts and smaller patch cuts are designed to regenerate sun-loving, pioneer species such as poplar, white birch, and white pine. Uneven-aged, single-tree, and small group selection cuts create favorable conditions for the

regeneration of shade-tolerant species like beech, yellow birch, maple, hemlock, and spruce.

The range of tree species and quality of timber on the property shapes the harvest plan, timber volumes, and revenue. Revenues for standing timber (stumpage) vary by tree species, by log size (both diameter and length), and by overall timber quality. Only after this data is gathered by the forester can an estimate be made of the value each tree will generate from the sale.

A forest management plan also takes into consideration the site's non-timber values. These can include wildlife habitat, recreational trails, and scenic vistas as well as the protection of water quality, wetlands, steep slopes, fragile areas, and cultural or historic resources including stonewalls and cellar holes often accompanied by old apple trees.

The three primary partners involved in the creation and implementation of a forest management plan are the landowner, the consulting forester, and the logging contractor. The landowner conveys his or her goals to the forester, who defines the site-specific steps required to establish the balance of tree species needed to meet the plan's objectives. The logger cuts the trees and moves them to the landing as carefully as possible.

On the Landing

Cutting each tree to its highest-valued product often takes place on the landing. This is where the role of available markets is most tangible. Trees are sorted into piles for the chips used for wood biomass energy markets, hardwood pulp, softwood pulp, firewood, sawlogs for lumber, and a range of specialty products including



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white ash for tool handles and a precious few veneer logs for high-end furniture or flooring.

Professional logging crews operate their machinery in a complex choreography of feller-buncher, grapple skidders, loading crane, de-limber and slasher, and chipper sorting boles and tree tops into various wood products to be loaded onto log trucks or into chip vans for transport.

In addition to the skillful merchandizing of wood on the landing, foresters and loggers also cooperate to arrange for trucking wood to various mills throughout New Hampshire, Maine, Vermont, and New York. An average of 5,000 board feet per truckload of sawlogs, 30 tons of chips per tractor trailer load of chips, and 20 tons per truckload of roundwood pulp logs helps people visualize the wood volume they see traveling our state's roadways.

To Market

Wood markets are complex. The range of prices paid for various wood products is based on species, volume, and quality. The various units by which timber volume is measured include tons of fuel-wood chips for biomass energy markets; cords of hardwood and softwood for the pulp and paper industries; and board feet of hardwood and softwood sawlogs for the lumber mills. Changing weather conditions, operating conditions, and market conditions also dictate the viability of the timber sale.

Timber harvesting remains an important tool to ensure that owning private forestland remains economically viable. Forest management income allows landowners to pay property taxes and generates timber tax revenues to local communities. New Hamp-

1. Meadowsend Timberlands consulting forester Jeremy Turner describes the timber management plan objectives, explaining which trees are marked to be cut and which will be left to grow until the next stand entry. The landowner may wish to encourage the growth of certain crop trees by removing competing trees and leaving a few of the desired trees standing to reseed.

Photo by Danny Richardson.

2. Trees are sometimes cut by hand to minimize the impact upon sensitive natural areas such as wildlife habitat, recreational trails, wetlands, and steep slopes that might be vulnerable to damage by large machinery.

Photo by Ned Therrien.

3. The "feller-buncher" can extract an individual tree from a tight stand, move it, and lower it to the ground without damaging the crowns of the surrounding trees. The machine's fingers or "arms" grasp the stem—in this case, a large and heavy red oak near a stonewall—and hold the tree upright while the saw head is deployed outward from the bottom to sever the entire tree at the stump. The feller-buncher can then carry the tree—or bunch of tree stems—upright through the woods to a clearing to await transport by a "grapple skidder" to the timber landing. Photo by Ned Therrien.

4. A grapple skidder like this one pictured will back up to the felled logs left by the feller-buncher. The arms of the grapple open and wrap around the stump end of the unwieldy hitch of trees, then close and cinch the logs together. The entire grapple assembly then lifts the hitch, and the skidder drags, or "skids", the logs to the landing. Photo by Danny Richardson.

5. This crane, also known as a "yard loader," can pick apart a hitch of logs left at the landing by the grapple skidder. The "slasher" then cuts the logs to length in the log cradle shown. After the logs are cut to proper length and the tops are chipped, the crane will deck the logs into a neat pile to await trucking to a mill. Photo by Jack Savage.



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6. Wood is merchandized on the landing where each tree is cut to maximize its value. The cut trees are then sorted into chip piles for wood biomass energy markets, hardwood pulp, softwood pulp, firewood, and more valuable sawlogs such as these shown. Photo by Geoff Sluder.

7. The whole tree “chipper” (the machine on the right) will chew the hardwood boles (the logs on the right) into chips for biomass energy and wood energy markets. The yard loader on the left will use the attached crane to lift the white pine sawlogs (left) onto the slasher carriage to be cut to length by the slasher sawhead—like a giant chainsaw bar. The crane then lifts the cut log into a pile. This is integrated logging and chipping—a mechanized harvest operation that runs at high efficiency and moves a large volume of wood, unlike a conventional logging operation with chainsaw and cable skidder.

Photo by Geoff Sluder.

8. Log-carrying trucks often have two parts: a “cherry-picker” crane and the truck itself. Wood is transported to various mills throughout New Hampshire, Maine, Vermont, and New York. An average truckload of sawlogs, like this one shown, contains 5,000 board feet per truckload. Photo by Ned Therrien.

9. Small institutional wood-chip burning operations, like the wood gasifier at the Forest Society’s Conservation Center shown here, provide a venue for local loggers to sell their products regionally, which keeps both jobs and revenue within the state while providing a local source of renewable energy. A wood gasifier burns wood chips, sawdust, or similar materials in a fire box to produce wood gas, which can then be filtered, cooled, and directed to an engine or fuel cell to produce electricity. Photo by Jack Savage.

10. Careful logging operations, such as this planned harvest on Mount Monadnock, fulfill long-term forest management plans that take into consideration the site’s non-timber values, such as wildlife habitat, recreational trails, scenic vistas, and the protection of water quality, steep slopes, fragile areas, and cultural resources. Heavy rains impacted this operation, which took place in autumn 2005. Photo by Geoff Jones.

11. This photo was taken in summer of 2006 of the same site on Mount Monadnock. The rocks and signage in the foreground were placed to keep ATVs off the job site after the harvest was complete. Photo by Geoff Jones.

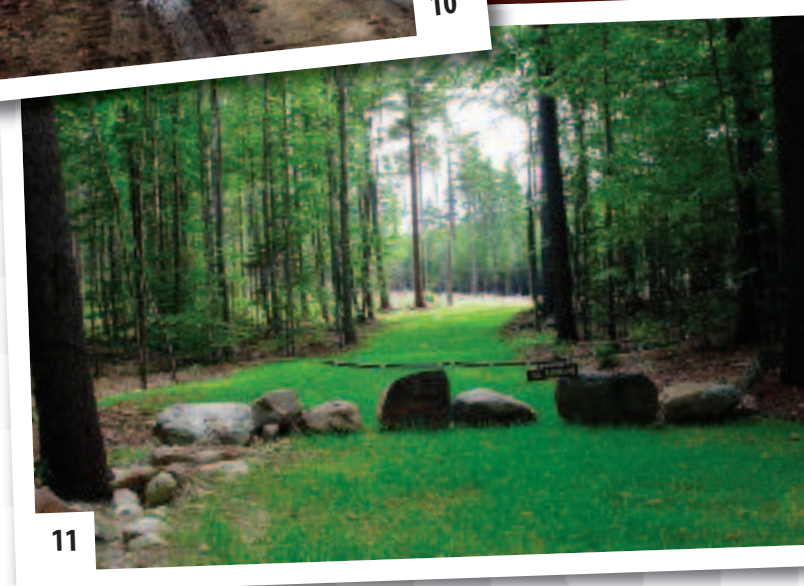
shire’s forest products industry provides \$2.3 billion in annual revenues and employs nearly 10,000 workers in logging, trucking, sawmills, and pulp and paper industries.

The proper care and responsible management of our state’s forests contribute to local, statewide, and regional forest products economies while providing economic revenue ripple effects across the entire Northeast. We live in one of the most productive wood-growing regions in the world, and we use wood, paper, and cellulose products every day. Those who would just rather not see any logging in New Hampshire forests are merely exporting their daily demand for forest products to some other region of the world—someplace we don’t see—where timber may be harvested without the forethought, care, and environmental regulations that we apply right in our own backyards.

Good Cut/Bad Cut

When real estate values spike, forestland can become “too valuable for its own good.” When productive open space is perceived as mere empty space, it’s hard to see trees as anything other than an encumbrance on the land. Heavy cutting temporarily forecloses future opportunities to manage forestland for several decades as a site recovers.

It takes a trained eye to discern the hallmarks of careful logging operations that fulfill long-term forest management plans and maintain forest health from the more rough-and-tumble extractive logging that precedes conversion of a site to non-forest use. Is it any wonder that logging is often misunderstood and widely perceived negatively as guilty until proven innocent? Too often, the public is left to judge all logging by the most egregious examples where no forestry is being practiced. However, sustainable timber harvesting allows private lands to continue growing trees that provide green jobs and future revenue.



A Bonanza for Wildlife

Slash—the woody debris and rotting logs created during the logging operation—creates habitat for wood-boring beetles and ants as well as resting cover for amphibians, like wood frogs and spotted salamanders. In less than a decade, the slash melts to form soil, while stumps rot beneath raspberry canes, followed by thick seedling and sapling regeneration. Black bears eat raspberries and blackberries and forage for the grubs of ants and beetles found in rotting wood, while deer and moose browse the twigs and buds in the thick regeneration of hardwood sapling in larger patch cuts.

Small mammal populations temporarily explode in response to the sudden flush of tender new herbaceous vegetation—grasses, forbs, ferns—found where sunlight reaches the forest floor. The sudden expansion of the small mammals draws foxes and coyotes, which hunt along the forest edges, as well as hawks and owls, which use the linear flyways of skid trails and haul roads to hunt for prey. Bats also use the airspace above skid trails and haul roads to hunt insects by night. Chestnut-sided warblers favor the sunlit, early successional forest habitat of young sapling and pole-size trees that become established next.

Taking the Long View

At first glance, the altered landscape that emerges after a timber harvest can be jarring. However, this is a temporary disruption. The changes wrought during logging operations, whether in the

coldest months of winter or the driest months of summer, leave a lasting legacy: excellent wildlife habitat, better stocking, thinning to favor highest quality timber, good jobs, and green energy.

It will be 15 or 20 years before the next entry into thinned timber stands that are buttoned-up at the end of the timber harvest. In the meantime, crop trees released during the timber harvest and the sun-lit patches of seed bed underfoot develop into a healthy and diverse forest that provides excellent wildlife habitat while growing wood for future generations.

Logging operations on Forest Society land are one of many tangible expressions of good forest management and long-term stewardship. We are proud to protect and manage our state’s forests while helping to perpetuate New Hampshire’s traditional natural resource-based economy.

So why not invite the neighbors over to take a good look around?

Naturalist and Tree Farmer Dave Anderson is director of education and volunteer services for the Forest Society. He may be reached via e-mail at danderson@forest.society.org.