

# 8.1 TIMBER PRODUCTS

## BACKGROUND

**Under most circumstances, it is financially advantageous for landowners to manage their forests so they grow and market the highest value timber products possible.**

Forest growth refers to the volume of wood or biomass that a site produces over a period of time. Yield is the marketable timber volume available for harvest (or harvested) at a given point in time or during a particular period. Many factors influence forest growth and how much timber is ultimately produced. Factors include site and soil conditions, species composition, forest health, and forest management activities. Both past and present natural disturbances and management activities, as manifested in stand structure, play a major role in yield.

Timber products commonly generated from New Hampshire's forests include sawtimber (veneer, sawlogs, bolts), cordwood (firewood and pulp), and biomass (chipwood). Sawtimber is usually the most valuable product by volume. For example, a trailer load of veneer may be worth 100 times the value of an equal volume of chipwood. Sawtimber is measured and sold per thousand board feet (MBF). Firewood is usually sold by the cord. Pulp and chipwood are usually weighed and sold by the ton.

Trees that produce mostly firewood, chips, pulp, or pallet sawlogs are considered low-grade. All forests contain low-grade wood. Although low-grade trees can be valuable for wildlife, managing to favor the growth of well-formed, healthy, vigorous trees provides more options and revenue over the long term than stewarding a forest replete with low-value products such as firewood.

Silvicultural management influences the tree-density, species composition, and the structural characteristics of a forest stand. Providing tree crowns with adequate space may accelerate the trees' growth rate. Forest landowners can optimize value growth by providing adequate space to valuable and potentially valuable trees. Stocking guides can help determine optimal stand densities for particular forest types (2.4 Managing for High-Value Trees). Refer to *Summary of Growth Rates and Yields of Common New Hampshire Forest Types* in the appendix for expected growth rates.

For landowners, the point of sale for timber is usually as the tree stands on the stump. "Stumpage" value is the value of standing timber before it is cut; this is the value landowners are paid when they sell timber. Once the tree is harvested, processed, and transported to market, timber is valued as "delivered" value. The value added by the logger's labor and use of equipment covers the logger's production cost and profit. This value-added is the difference between delivered and stumpage values.

Sawtimber is processed into more valuable products depending on the species and how clear, straight, and defect-free the wood is. Logs are downgraded by the number and kind of defects (knots, curves in the stem, rot, etc.). Poor-quality tree sections that aren't marketable as logs may be processed and sold as firewood, pulp, chipwood, or left in the woods.

A variety of factors affects the value of wood products, including (1) supply and demand for different species and grades of wood, (2) harvesting costs, (3) distance from markets, and (4) seasonality, which affects wood flow and logging costs.

## OBJECTIVE

**Manage for high-value timber products.**

## 8.1: Timber Products

### CONSIDERATIONS

- Considering forest growth provides a framework for devising a realistic timber-yield plan. To remain sustainable, timber yield typically doesn't exceed forest growth over the planned harvest cycle. Attempts to sustain production of quality timber by simple rules such as keeping harvest equal to growth is only possible after the stand structure becomes balanced at an optimum level (2.2 Forest Structure). Keeping harvest equal to growth may not allow for other practices in this publication and may be difficult on smaller ownerships.
- Forest growth rates are typically optimal on moist, fertile soils. As soil fertility decreases, there are fewer nutrients to support potential growth relative to a more productive site. However, a poor site for one species may be adequate for another.
- A forest inventory provides baseline information about present timber volumes and projected growth. Future inventories can reference the baseline inventory to determine if forest harvesting is occurring at a sustainable level.
- Sawtimber is usually more valuable—often dramatically—than firewood, pulp, or biomass chips.
- For landowners, stumpage value is usually the relevant value for selling timber.
- While all forests contain at least some low-quality, low-value wood, it isn't financially advantageous to deliberately grow poor-quality trees. Silvicultural management to favor the growth of high-quality, high-value timber products results in the greatest financial return from the forest over the long term.
- Decisions about how to utilize and process a harvested tree can greatly impact the financial return from any given timber sale. Similarly, the type of logging equipment used and the care taken to operate a timber harvest may affect the future value of the forest's residual trees.
- Several sources publish the general value of wood products including the N.H Dept. of Revenue Administration and N.H. Timberland Owners Association (NHTOA). However, stumpage values are specific to the situation, with regard to timber quality and quantity, logging costs, distance to market, and other factors. Moreover, markets fluctuate rapidly, and information from published sources may become quickly outdated.
- Specialty markets exist and may continue to emerge that provide alternatives to traditional timber forest products.
- Managing for high-value timber products may not be possible due to site constraints from soils and current forest cover, or may conflict with other important forest resources. Application of specific practices depends on the site and the landowner's priorities.

### RECOMMENDED PRACTICES

- ✓ Seek professional help. (See below for listings of licensed foresters and certified loggers). Consider hiring a licensed forester to inventory, develop a forest management plan, and/or prepare a timber sale, including selecting and marking trees for harvest and sale. RSA 227-J:15 requires a timber sale contract.
- ✓ Refer to 2.4 Managing for High-Value Trees for silvicultural recommendations and refer to other chapters for information and guidance on integrating managing high-value trees with other important resources.
- ✓ Adjust harvest plans—consistent with the goals of the management plan—to take advantage of fluctuating markets for certain wood products.

### CROSS REFERENCES

1.1 First Steps in Forest Management; 1.2 Setting Objectives; 1.3 Forest Management Planning; 2.1 New Hampshire Forest Types; 2.2 Forest Structure; 2.3 Regeneration Methods; 2.4 Managing for High-Value Trees; 3.1 Timber Harvesting Systems; 6.2 Cavity Trees, Dens and Snags; other chapters addressing specific landowner objectives; appendix *Summary of Growth Rates and Yields of Common New Hampshire Forest Types*.

### ADDITIONAL INFORMATION

Bennett, K. P. 2010. *Directory of Licensed Foresters Providing Service to Forest Landowners in New Hampshire*. UNH Cooperative Extension, Durham, N.H. <http://extension.unh.edu/fwt/dir/index.cfm> Accessed on August 2, 2010.

N.H. Dept. of Revenue Administration. *Average Stumpage Values*. [http://www.nh.gov/revenue/munc\\_prop/avgstumpval.htm](http://www.nh.gov/revenue/munc_prop/avgstumpval.htm) Accessed May 27, 2010.

N.H. Timberland Owners Association. *Certified Loggers List*. <http://www.nhtoa.org/> Accessed March 5, 2010.

RSA 227-J. *Timber Harvesting*. <http://www.gencourt.state.nh.us/rsa/html/xix-a/227-j/227-j-mrg.htm> Accessed May 27, 2010.

Simpson, W., and A. TenWolde. 1999. *Wood handbook—wood as an engineering material*. USDA For. Serv. Gen. Tech. Rep. FLP-GTR-113.

Edmonds, R.L., G.D. Wells, F.E. Gilman, S.W. Knowles, and N. Engalichev. 1988. *Lumber From Local Woodlots*. Natural Resource, Agriculture, and Engineering Service. NRAES-27. NRAES Cooperative Extension, Ithaca, N.Y. 42 p.

Smith, S. 1991. *N.H. Best Log Scaling Practices Guide*. UNH Cooperative Extension, Durham, N.H. 13 p.