

Chapter III

Managing Forestlands with a Focus on the Northeast

A. Overview and Purpose

Knowing your forest, its assets, and how it functions are important for making financial and estate planning decisions. Before going into detail about specific estate planning concepts, this chapter provides some very general information on some key topics in forest management. Although not extensive, this chapter should provide a starting point for seeking more information. Forest management is both an art and a science. There are specific scientific tools and methods available for making decisions about tending, harvesting, and regenerating forests. However, because every forest is unique, the decisions must incorporate site-specific considerations. First and foremost, every forest landowner should have a well-written management plan that describes the forest conditions and directs future activities. In addition, and especially for estate planning purposes, a landowner should know the value of their forest assets. This chapter highlights some of the approaches used to value forests. Another central part of forest management is dealing with taxes, other than estate or gift taxes. Property taxes are usually paid on an annual basis, and each state has different rules for forestland assessment and valuation. Income taxes are paid when revenue is received from timber sales or other forest activities. In addition forest landowners may be able to deduct certain management expenses from their income taxes. This chapter provides an overview of taxes and the importance of record keeping. Finally, the chapter provides information about where landowners can find additional forest management assistance.

B. Lesson Objectives

When you have successfully completed this chapter you will be able to accomplish the following objectives:

1. Understand some basic concepts in forestry.
2. Understand the importance of a forest management plan.
3. Describe the key steps involved in writing a management plan.
4. Understand some basic elements of forest valuation.
5. Learn the importance of record keeping, especially for income tax purposes.
6. Know where to obtain assistance in forest management.

C. Introduction

In the twenty northeast states,¹ approximately 4 million private forest landowners own almost 130 million acres. Over 50% of the ownerships are in tracts of 10 acres or less, and 25% are in ownerships of 500 acres or more. Forest types in the region are diverse and vary from spruce-fir along Canadian border states to northern hardwoods and oak hickory in the Mid Atlantic states.

¹ Connecticut, Delaware, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, Wisconsin.

Many of these owners want to be good stewards of the land they own—that is, they want to protect and enhance their forest resources for themselves and future generations.

Forestland is owned for a variety of reasons. Some think of their land primarily in terms of timber production or investment potential. Others value the land primarily for its recreational or aesthetic value. Frequently, landowners seek a combination of benefits, using the land for wildlife habitat and recreation as well as a source of income from timber production. Each landowner should have their own set of management objectives to guide them in planning their activities.

Managing your forest estate is a long-term process. It requires planning beyond normal horizons because forests and trees may take hundreds of years to mature and provide the desired benefits. An important part of the estate forest planning process is knowing the value of your forest and managing it for those values it provides. A wisely managed forest can provide many resources and benefits. Not everyone who acquires forestland realizes the need for management. However, careful planning for most forest-based activities, such as timber sales and building roads, will ensure that the forest benefits are not lost. Lack of planning can result in erosion, poor water quality, destruction of natural beauty, lowered timber value, and loss of wildlife habitat, all of which can reduce the future value of the forestland.

D. Important Forestry Concepts

For a basic understanding of tree growth one needs to know a few key concepts. This is by no means exhaustive but provides some initial understanding. The first concept is **site**. A forest grows differently depending on its location or site conditions. If your forest runs along a stream the soil may feel cool, moist and spongy. However, if your forest runs along a ridgetop the forest floor may feel firm, and the soil thinner and dryer. Site is the physical environment in which trees grow. The factors that make up the site conditions include soils, air temperature, humidity, and water availability. In addition, the living vegetation itself affects the site conditions. As trees grow they may shade out sunlight, thereby affecting soils and temperature. Also, wildlife that live in the forest influence site conditions. Trees adapt to the site conditions. One finds different tree species and different growth rates of trees because of site conditions.

The next key concept is **growing space**. This is the space that allows the tree to grow, including the area around a tree and the light, water and nutrients available to that tree. This concept is important in understanding the growth rate of trees. Trees that are clumped together compete for the same resources and may not grow to their maximum potential unless one out competes others for the resources. The trees that are crowded out grow less well, and may not be as healthy. As trees grow bigger they need more space.

The third concept is **shade tolerance**. This has to do with how well a tree does in the shade of other trees. Typically, species are either defined as shade tolerant or shade intolerant. Tolerant species can survive, prosper and reproduce in the shade of trees. Intolerant species are those that can only survive in the open or as overtopping trees. Seedlings of intolerant species can only survive in the shade for a few years, whereas tolerant species may survive in undergrowth for

decades. If there is complete sunlight the intolerant species usually out-compete tolerant species. Species such as hemlock and sugar maple are tolerant species, while pines, some oaks, black cherry and yellow-poplar are examples of intolerant species. Knowledge about species' tolerance helps explain why some species are present and others absent. It is also useful in planning a harvest and thinking about the residual trees and what will regenerate.

The fourth concept is **succession**. This is the process of plant communities succeeding each other over time. This provides the landowner with knowledge about the type of vegetation that will grow in an area at a given time. Typically an area devoid of vegetation will first return to grasses and weeds. Then in a simple scenario, seeds of trees may blow or be carried in by animals. The intolerant and tolerant species will compete with the intolerant usually emerging in the canopy. As the forest ages the tolerant species in the understory emerge when the overlying intolerant species begin to die.

All these concepts relate the process of management planning, and determining how long a forest should grow before a harvest. The length of time a forest is allowed to grow is known as the **rotation age**. This is important from a financial perspective as trees grow more valuable as they age. Trees start off with low value but value increases rapidly as the tree matures. Later in the rotation the growth rate slows. In financial terms you want to harvest a tree when it reaches financial maturity, i.e., when the expected value of the increased tree growth no longer equals or exceeds the net return possible from cutting the tree. Another way to put it is if the landowner's acceptable rate of return for the timber is 4%, the landowner will let the tree grow as long as the annual value increase exceeds 4%. When the tree begins to slow in growth and the annual value drops to 4% or below it is time, from a financial perspective, to harvest. However, there are other values a landowner may be concerned about such as wildlife habitat that require rotations that may be longer than when the trees reach financial maturity.

E. Developing a Management Plan

The first step in being a good forest steward is developing a management plan. The plan is a tool to guide the landowner toward meeting their goals and objectives. Some landowners may not realize that most forestry activities are compatible with maintaining the aesthetic quality and recreational value of their land. In fact, properly planned forestry activities can enhance visual appearance, provide improved recreational opportunities, and sustain and often increase wildlife populations.

An important approach in forest planning is to realize that forests do not stop at legal property boundaries and that your forest may be part of a larger forested area involving a number of landowners. Foresters generally think about a forest as a collection of individual stands. This is suitable for prescribing timber harvests and regeneration plans. However, many attributes of a forest such as wildlife and water quality are components of the larger landscape, not just one forest stand. Managing at the forest or landscape level allows one to consider the complexities and linkages among the various attributes, ecological communities, and stands. This does not imply that you should manage the land together but adapt your planning to limit potential negative impacts of your actions on adjacent owner's properties.

Also, in managing forests you should have a long-term perspective. Creating desired landscapes may take many years. Rotation ages for certain species or stands may be lengthened to address wildlife or ecological issues. The approach to thinking about the larger landscape and over longer time periods is often referred to as **ecosystem management**. Ecosystem management is not intended to impose management restrictions on private forest landowners. Private landowners have the right to manage their land as they wish, within the range of applicable laws and guidelines.

As discussed already, you should talk about goals and objectives with family members and those who will assist you in carrying out forest management activities. Often the assistance of forestry professionals is needed to achieve the best results. You should think about short- and long-term goals and objectives. Begin by asking yourself questions about why you own the land. Answers may include the following:

1. The forest has been in the family for years and I want to continue the tradition.
2. I am looking for a future income source.
3. I like the beauty of the woods.
4. I like watching or hunting animals in my woods.

Then ask, how would you like your land to look? Answers may require you to make some investments. Are you willing to conduct a timber sale? Will you allow public recreation on your land? Will hunting be allowed? Once this is done you can start thinking about the tradeoffs you are willing to make. For many landowners this gives them the opportunity to focus their thoughts. Goals may include maintaining a forested appearance around your home or along access roads or manage timber stands for scenic beauty, recreational trails, and responsible profits.

Based on your goals you should work with a resource professional such as a forester when writing the management plan. A forester can even help frame your goals and objectives. The professional will then need some information about your land to develop a complete resource inventory of your property. Maps provide information on vegetation types, unique features, bodies of water, timber stands, fields, clearings, and boundaries. Topographic maps delineate major features and show property lines. Aerial photographs provide birds-eye views of the land uses and vegetative cover within you boundaries and on adjacent land. After reviewing the maps, walk the property to note the type and condition of the resource. Examples of resources noted in the field include vegetation, landscape features, wildlife, and water bodies. Once the evaluation is done, the plan is written and a schedule of activities for the short and long-term is developed. For more information on writing management plans see:

 The Elements of a Successful Forest Management Plan: The Key to Forest Stewardship
<http://www.agnr.umd.edu/ces/pubs/pdf/FS625.pdf>

 Forestry Management Workshop Manual
<http://www.webcom.com/duane/wood/woodindx.html>

F. Valuing Your Forest

Typically appraisers value forestland based on its land and timber values. However, there are other benefits such as wildlife or recreation which have value but are not calculated for tax or estate planning purposes. The land value is typically derived from sale prices of recently cutover forestland in your area, but there are other methods if sales of cutover land are difficult to find. It is important to use a certified appraiser to derive land value for estate tax purposes.

Property appraisers generally use one of three approaches to determine market value of forestland:

1. Market or comparable sales approach. This method compares properties to others that have recently sold.
2. Cost approach. This method is based on how much it would cost to replace a property with a similar one.
3. Income approach. This method values the property based on the potential income from the property.

The appraiser may use more than one approach to check for accuracy. Factors involved in determining timber value include species type, age, size, timber quality, and quantity per acre. An inventory (or timber cruise) is carried out to determine the volume of timber products on a tract of land.

It is important that timber value is appraised separately from land value. This will ensure an identifiable timber basis (discussed in next section) for tax purposes when the timber is eventually sold. Timber values depend on many factors, including land accessibility, markets, interest rates, mortgage rates, and overall economic climate. For bare timberland, the market sales approach is usually most reliable. Generally, for land with mature timber, the income approach is the most practical method for a number of reasons. For timber that is not yet mature, some hybrid of the cost and income approach may be most effective. For more information on forest valuation see:

When to Harvest Your Trees

<http://www.ag.iastate.edu/departments/forestry/ext/pubs/F-325.pdf>

G. Income Tax Aspects of Forest Management and Recordkeeping

The Federal government provides tax incentives to encourage timber production, and many local and state governments provide preferential property tax for forested properties. One of the keys to taking advantage of tax incentives is to keep good records. Not only is recording keeping beneficial for tax filing or saving money, but it should provide information needed to make wise forest management decisions. Forest management for timber is a long-term investment that requires knowledge about the land that is built up over many years. Records are one of the keys to having a successful and sustainable forest to enjoy for many generations. Well-organized

records are also important for reporting forest management expenses and revenues for income tax purposes.

Good records help you determine production costs, establish basis, and estimate taxable income or expenses due to timber sales, involuntary conversions, casualty losses, timber theft, and estate transfers. Many of these topics are complex and details are found in reports such as. “Timber Taxation: A General Guide for Forestland Owners” (Penn State Extension) which provides a simplified overview of forest taxation while “Forest Landowners Guide to the Federal Income Tax” (USDA Forest Service) provides more detailed information. Also, landowners should consult with accountants, estate planners, lawyers or foresters familiar with the tax code.

Landowners who manage their forestlands as an investment or trade or business should consider a formal system of accounts, since these owners can deduct expenses. Generally, those active in a trade or business are allowed the most deductions. The IRS has strict rules for reporting revenues and expenses, and provides the Federal tax form T (Timber), “The Forest Activities Schedule” to show and separate capital assets (land, timber, buildings, equipment), and report timber sales, land improvements, and reforestation expenses. The Form T has schedules showing where to record each activity. Information recorded on Form T transfers to your Income Tax Schedules depending on your income classification (personal, corporate, or farmer). Copies of Form T and other tax forms and schedules are downloadable and available at www.irs.com.

There are three key situations when a forest landowner needs to keep accurate records for tax purposes:

1. To establish accounts and allocate costs for land and timber purchases.
2. To record expenses associated with forest management activities.
3. To record income from timber sales and adjust timber accounts.

The first step, establishing accounts is done on Form T. This provides the framework for recording all other income and expenses associated with forest management activities. The following sections describe the process for setting up initial accounts, and recording expenses and income. Remember, many of the specific tax related details for filing taxes are dealt with in other publications.

1. Establishing Capital Accounts: Recording Land and Timber Purchases

When you purchase, inherit or are gifted forestland you are acquiring a capital asset. Record these capital assets on Schedule B of Form T. Differentiated from assets with a life of less than a year, capital assets are not be deductible from income taxes in the year acquired. The costs associated with acquiring (or improving) capital assets are only deductible when disposed of through sale, depletion, or depreciation. There are three main types of capital accounts for forest landowners: land, timber, and durable equipment and buildings.

When establishing an account for each asset, determine each assets **original cost basis**. This is important as you can report less taxable income when filing because the basis is deductible from

the sale proceeds. The basis requires an estimate of the fair market value (FMV) on the date of purchase or acquisition. It is best to establish the basis when the property is acquired; however, it is possible to establish the basis later. To establish original basis you allocate the acquisition costs proportionally to each account relative to the FMV of each account. If the property is acquired by purchase or inheritance, the original basis is based on the FMV of the date of acquisition. If the acquisition is a gift, then the original basis is the donors adjusted basis. The original basis is adjusted with acquisition or depletions of the capital assets. For more details on allocating and depleting basis see the tax publications referred to at the end.

A discussion of each of the three primary capital accounts follows:

Land account: The FMV is the bare land value. To derive the FMV you can use the sale price of recently cutover forestland in your area. Cost or income appraisal methods are used if sales of cutover land are difficult to find. In the land account keep track of land costs and improvements such as permanent roads and firebreaks. These types of improvements and the land itself cannot be depreciated or depleted. Some improvements such as culverts, bridges, fences, or temporary roads are depreciable and you may want to establish a separate sub-account for such assets. The basis in the land account is recovered when the land is sold or disposed of.

Timber account: You can divide your timber account into two sub-accounts: merchantable timber, and young growth (pre-merchantable timber). The merchantable (marketable) timber is recorded in standard units – usually board feet, cords, or tons, depending on the intended product. Pre-merchantable timber is usually recorded in acres. As the timber matures, adjust the accounts accordingly. The IRS allows landowners to separate accounts for each timber stand (a individual management unit). The criteria for a stand include, similar species type and age, a separate plan and identifiable on a map.

Equipment and Buildings account. This account includes all non-land and timber assets, such as tractors, chainsaws, skidders, and farm buildings, or residential rental properties. You can establish separate accounts for each type of equipment and the buildings based on the FMV at time of acquisition or purchase price. These items, as capital assets, should be depreciated. Major repairs that extend the life of the equipment or buildings can be considered as capital improvements, and also should be depreciated. Normal operating expenses on equipment and buildings such as repair and maintenance (discussed below) are deductible in the year they occur.

2. Recording Management and Operating Expenses

Landowners should distinguish between capital expenses and normal operating expenses. Capital expenses include those that improve a capital asset that has a life generally of a year or more. Capital expenses were discussed above and depreciable over the life of the asset. However some expenses such as permanent roads are usually only recovered when the property is sold.

There is a special exception for reforestation expenses, which are considered capital expenses and should be included in the pre-merchantable account. However, the IRS allows up to \$10,000

of those expenses deducted in the year they are incurred through a special reforestation tax credit and amortization option. See references for details. Expenses incurred during the life of the rotation such as timber stand improvement costs (thinnings, herbicide or fertilizer applications) can be deducted as operating expenses or carried as a capital expense, depending on whether the owner is a trade or business or investor.

Operating expenses are considered ordinary and necessary to managing, maintaining and improving the profitability of your forestland. Types of expenses include consulting fees, property taxes, insurance premiums, equipment repairs, travel and meeting costs for forest-related events. Expenses incurred for using your land for tours, demonstrations and other forestry related events may also be tax deductible. Landowners may wish to lump expenses or divide them into separate categories such as fixed expenses and variable expenses. Expenses for personal use such as recreation are not tax deductible. Reporting expenses for tax purposes, the type and how much of an expense the IRS allows you to deduct depends on how you own your forest: as a business, for investment or only for personal enjoyment. For details on IRS criteria for which category you may fit refer to other publications.

3. Recording Income From Timber Sales

There are a number of legal and tax implications for timber sales, including the type of sale, length of ownership, and ownership classification. Income is received when timber, land or equipment is sold. Landowners can deduct expenses associated with the sale of the asset from the sale proceeds. These may include lawyers or consulting fees, surveys, maps, advertising, and state and local taxes. In addition to these expenses one may also deduct the basis of the timber you sold. Details on adjusting basis from timber sale are shown in tax references. Depending on the method of timber sale, (lump-sum vs. pay as cut), the length of ownership, and ownership classification (investor or trade and business) you can receive capital gains treatment. All other income such as cost-share payments, hunting leases, maple syrup, and firewood permits are considered ordinary income. Some cost-share payments may be excluded from income taxes. Schedule C on Form T is where you record profit or loss for timber sales. Schedule C is also where the adjustment to your timber accounts is made. It allows you adjust your basis as timber is depleted.

A timber sale often involves a substantial sum of money, not to mention that such a sale is something the typical landowner does infrequently. Anyone considering a timber sale should not rely on personal judgment, but should confer instead with a recognized professional forester. First, when selling timber, be certain your interests are protected. Professional assistance is well worth the cost. Usually, matters that deal with deeds, contracts, and other legal formalities are generally complex and confuse laymen. Ideally, the sale agreement should be prepared with the advice of a forester who is knowledgeable of provisions that an attorney could express in legal terms. Second, a good timber sale agreement is clearly understandable, workable, and enforceable for both buyer and seller.

A contract establishes both the conditions to which buyer and seller agree and also their rights and duties under these conditions. No two timber-cutting contracts are exactly alike, but all contracts should include basic provisions such as:

1. Guarantee of title and description of the land and boundary lines.
2. Specific description of timber being conveyed, method of designating trees to cut, and when, where, and how to determine volume.
3. Terms of payment.
4. Duration and starting date of agreement.
5. Clauses to cover damages to non-designated trees, fences, ditches, streams, roads, bridges, fields, and buildings.
6. Clauses to cover fire damage where harvesting crew acts in a negligent, willful, reckless, or malicious manner to protect the seller from liability that may arise in the course of harvesting. Also, a clause about indemnification from liability should be inserted.
7. A standard to completely utilize the merchantable portion of trees.
8. Clauses for arbitration in case of disagreement.

4. Key Terms

Adjusted Basis: The original basis of a capital asset minus any reductions from sales, depletion, depreciation, amortization or losses claimed.

Basis: The money invested in a capital asset.

Capital account: An account used to keep track of the basis and quantity of capital assets

Capital Asset: An income-producing property used for investment or in a trade or business that is acquired through purchase, inheritance or gift of an asset with a useful life of more than one year. Examples include land, timber, buildings, machinery, equipment, bridges, roads, and tree planting.

Capital gain (or loss): The net income realized from the sale or disposal of a capital asset. Capital gains (or losses) are treated differently for tax purposes from ordinary income.

Depreciation: The wearing out of an asset for which the IRS allows the cost recovered over a certain number of years, depending on the type of asset.

Depletion: The removal or using up of trees or other natural resources from property. The depletion allows recovery of the owner's basis. The depletion allowance is the portion of the adjusted basis and is based on the volume removed. Unexpected losses of timber from events such as tornado or fire also result in depletion of basis. This is not to be confused with "depletion allowances" from mineral exploration.

Fair Market Value: The current price at which an asset would exchange hands in a transaction between both a willing and informed buyer and seller.

Operating Expense: An ordinary and necessary expense associated with carrying on a trade or business. Operating expenses may be deducted annually as they occur.

Ordinary Income: Reportable income other than a capital gain. Ordinary income is liable for self-employment taxes.

Original Cost Basis. The amount entered in a capital asset account (land, timber, or equipment) when it was acquired. If the asset is purchased the original basis is the total cost of acquisition. If the asset is inherited the original basis is the FMV on the date of the decedent's death (or alternate valuation date). If the asset is gifted the original basis is the donor's adjusted basis.

5. For more detailed income tax information:

Jones, S. and M. Jacobson 2000 Timber Taxation: A General Guide for Forestland Owners. Penn State Extension. <http://pubs.cas.psu.edu/FreePubs/uh131.html>

Haney, H. et al. 2001. Forest Landowners Guide to the Federal Income Tax. USDA Forest Service Agriculture Handbook No, 718. www.fs.fed.us/spf/coop/

National Timber Tax Web Site: <http://www.timbertax.org/>

H. Obtaining assistance


Forest landowners often seek advice and information about improving their forests for production and conservation purposes. Managing forests is a complex process that involves information from a number of disciplines, including biological sciences, social sciences, economics, policy, and law. A landowner's questions may range from how to acquire and sell forest land, to the variety of approaches for growing and marketing forest products. Some questions may require a lawyer or tax accountant, others a professional forester or wildlife expert. A variety of public and private services are available to forest landowners. Many owners indicate that much of the success and satisfaction they derive from their land comes from services provided by forestry or natural resource professionals

Professional foresters can provide landowners with management assistance that will increase the value and productivity of their forested acreage. There are foresters who work with state agencies, often at the county level, and administer government cost-share and incentive programs. The county extension service may also have forestry experts on staff. They are useful sources of information and technical assistance. Contact your county extension office for more information.

Private consulting foresters are another source of assistance for landowners. A consulting forester represents, for a fee, the best interests of clients in all matters concerning the forest. A consulting forester usually provides more services than the government forester. They can help improve the quality of the forest environment and increase the production of marketable products. When the trees become merchantable, he or she can secure buyers and supervise the

timber sale. The fees charged by a consultant may be based on an hourly or daily rate, forest acreage, or a contract price based on a percentage of gross revenues from the sale of forest products. The cost of services can be repaid by faster tree growth and the higher prices received for timber that is marketed correctly.

Industrial foresters and timber dealers procure wood from private owners who are ready to harvest. There are also forestry companies that have landowner assistance programs that provide technical advice and planning services. Generally the assistance is geared to timber production. County foresters or extension agents can identify participating forest industries in your county. Other sources of assistance for specific situations include timber harvesters, accountants and lawyers who are experienced in these matters. Not all professionals have the experience in the areas in which you are concerned. Be sure to find reputable and knowledgeable assistance. Talking to other forest landowners, specifically your neighbors, may also be a useful source of information. For more information, see:

 Sources of Information and Guidance for Forest Stewards

<http://pubs.cas.psu.edu/FreePubs/uh076.html>

 USDA Landowner Assistance Programs

<http://www.fs.fed.us/na/morgantown/frm/perkey/ctpub/ctpub.html>

I. Student Exercises

1. List the key factors that affect how a tree grows on your land.
2. What does the concept of ecosystem management imply for managing lands?
3. Describe how your objectives may be translated into a management plan.
4. What is basis and why it is important?
5. Why is a written contract important prior to conducting a timber sale?