

# Become a Forest Steward

Source: NYSDEC

## Got Trees? Become a Forest Steward

*Sustaining the diverse interests and  
needs of private forest owners in  
New York.*

Whether it's 5 acres or 1000, assistance is  
available to help private forest landowners  
sustainably manage their forests.



### Got Trees?

#### RESOURCE DIRECTORY

##### NYS DEPARTMENT OF

##### ENVIRONMENTAL CONSERVATION - FORESTRY

*CENTRAL OFFICE* - Bureau of Private Land Services

Albany (518) 402 - 9425

##### *REGION 3* (DUTCHESS, ORANGE, PUTNAM,

ROCKLAND, SULLIVAN, ULSTER, WESTCHESTER)

Wappingers Falls: (845) 831 - 8780

New Paltz: (845) 256 - 3076

##### CORNELL COOPERATIVE EXTENSION

##### & MASTER FOREST OWNER/COVERTS VOLUNTEERS

Dutchess: (845) 677 - 8223

Orange: (845) 344 - 1234

Putnam: (845) 278 - 6738

Rockland: (845) 429 - 7085

Sullivan: (845) 292 - 6180

Ulster: (845) 340 - 3990

Westchester: (914) 285 - 4630

##### WOODLAND OWNER ASSOCIATIONS

NY Forest Owners Association:

(800) 836 - 3566

Catskill Forest Association:

(845) 586 - 3054

NYC Watershed Forestry Program

607-865-7790

[www.nycwatershed.org](http://www.nycwatershed.org)

<http://www.dnr.cornell.edu/ext/forestrypage>



### How Do I Become a Forest Steward?

If managed properly your land can provide ecological, social, and economic benefits forever. Forest Stewardship means setting and achieving objectives for your land while maintaining its environmental integrity for future generations. Your stewardship objectives can include a variety of benefits like timber production, wildlife habitat enhancement, aesthetics, recreational use, and protection of soil and water. Whatever your objectives might be, there are people and resources available to help you identify your objectives, develop a plan to achieve your goals and become a Forest Steward.

### Know Your Objectives

Do you know what you want from your land? Do you want wildlife habitat, recreational opportunities, financial return, a place to "get away", or a combination of these? Though not all goals are compatible, a variety of benefits are possible with careful planning. Talk to other landowners for ideas and carefully consider all of your options before you take action. Hasty decisions and actions can limit your options for future benefits from your land.

### Develop a Forest Stewardship Plan

A forest stewardship plan is your road map to responsible forest management. Developed in cooperation with a forester, it is a guide to help you define your objectives and describe your resources. The plan also provides a gauge to evaluate opportunities, and a schedule of activities to enhance the desired aspects of your property. Your plan will consider not only timber resources but also other resources and aspects of long-term forest management, such as soil and water quality, riparian and wetland values, wildlife and fish habitat, outdoor recreation and aesthetics, and maintenance of biological diversity (the different varieties and variations of plants and animals).

In New York State, free technical assistance is available to help landowners identify their objectives and develop a plan. A NYS DEC Service Forester can.....

- visit your forest free of charge
- assess, characterize, and map the forest resources on your property
- help you identify realistic goals and objectives for your land
- write a plan that includes a step-by-step, ten-year activity schedule that will help you meet your goals.

### Forest Stewardship in New York

New York supports the sustainable use of forest resources on private lands by helping landowners become good forest stewards. Private lands are critical to the health, beauty and economy of New York. Private forests represent 85% of forest land in New York and provide approximately 70% of the raw material for forest industries. Private forests also provide clean air and water, wildlife habitat, and countless recreational opportunities.



Private landowners can receive technical assistance and educational materials on issues related to forest and wildlife management. In addition, cost-share assistance may be available for preparing stewardship plans and implementing forest management practices.

For more information about forest stewardship assistance, contact your regional NYS DEC service forester or visit: [www.dnr.cornell.edu/ext/forestrypage/](http://www.dnr.cornell.edu/ext/forestrypage/)

### Other Resources and Sources of Assistance

See the Resource Directory on the back panel for contact information for local sources of assistance. Below is a description of the resources and sources of assistance available to you as you go through the process of setting your objectives for your land, developing a Forest Stewardship Plan, and taking action to meet your objectives.

#### DEC Service Foresters

- Work with landowners to write Forest Stewardship Plans free of charge.
- Provide technical assistance with forest improvement, tree planting, timber management, forest health, erosion control, and timber contracts.
- Connect landowners with cost share assistance if available.

#### Professional Foresters that Cooperate with DEC

- Provide technical assistance with forest improvement, tree planting, timber management, forest health, erosion control, timber contracts, and management planning.
- Offer timber sale assistance and administration, timber appraisals, and tax information.

#### Master Forest Owner/COVERTS Volunteers

- Are forest landowners who offer free site visits to other landowners.
- Provide general natural resource information and non-technical assistance.

#### Cornell Cooperative Extension

- Can connect you with an MFO in your area.
- Provide information on non-timber forest products, timber, wildlife, and rare plants
- Offer local education programs and publications

#### Forest Landowner Associations

- New York Forest Owners Association (NYFOA), its 10 chapters and other regional organizations such as Catskill Forest Association or THRIFT, provide various opportunities for learning through woodwalks, seminars, and publications.

#### NYC Watershed Forestry Program

- Provides cost share assistance for plans & water quality improvements in the NYC Watershed.

# Timber Harvesting Guidelines

Source: NYSDEC

These guidelines deal with problems caused by soil erosion, siltation and inattention to aesthetics. They include all the best management practices recommended for timber harvesting in New York State, plus additional aesthetic practices.

## Streams and Water Bodies

*What practices will maintain water quality of streams, lakes, ponds and marshes?*

When soil washes into streams and lakes, it reduces water quality and may harm spawning beds. With proper logging, erosion never starts. Streams are protected from careless disturbance and their water quality maintained.

*Keep Stream Crossings to a Minimum Locate Them Carefully*

- Check with the New York State Department of Environmental Conservation (DEC) about special regulations that apply to logging along wild, scenic and recreational rivers.
- Check with DEC about permits for crossing classified streams.
- Cross streams by the most direct route, but avoid crossing at bends and through pools.
- Find crossing sites that have low, stable banks, a firm stream bottom and gentle approaches.
- Cross at a few carefully chosen places, rather than at any convenient place.
- Use temporary culverts, bridges or runways where stream bottoms or banks might be damaged; remove them after use.

*Protect Stream Banks: Control Skidding and Felling Close to the Stream*

- Avoid cutting trees and destroying understory within 10 feet of the stream bank. This keeps the banks in place and shades the water.
- Don't skid up and down the stream channel -- a good rule for intermittent streams, too.
- Keep skidders at least 50 feet from the water. Winch off any logs that lie closer to the bank so they don't stir up the soil and start erosion. For slopes over 10 percent, it is good to keep skidders back at least 100 feet.
- Fell trees so the tops land away from the stream. Keep debris out of the water and skidders farther

away from the banks.

- Remove logging debris from the water, so stream flow isn't affected.
- When clearcutting, leave a 50-foot wide uncut strip along both sides of ponds, marshes and flowing streams. The shade cools the water.

## Roads, Skid Trails and Landings

*How can erosion be prevented on landings, logging roads, skid trails and steep slopes?*

Soil uncovered by skidding and truck traffic can erode. Poor drainage creates mud holes. Erosion occurs if water is not diverted away from the road surface; the steeper the slope, the greater the danger. Good design and proper maintenance are the best prevention.

*Protect Slopes Exceeding 30 Percent*

- On steep slopes, set roads and trails at least 150 feet away from streams, ponds and marshes.
- Winch logs off steep slopes, where possible, to minimize the number of skid trails and the amount of skidder traffic.
- Log steep slopes during dry weather, when soils are dry; or log when the ground is frozen and covered with snow.
- After logging, regrade roads and primary skid trails, and install water diversion devices as needed.

*Carefully Locate, Design and Build All Roads and Skid Trails*

- Keep roads and skid trails out of wet and poorly drained spots, and off the tops and toes of banks and slopes. This will keep machines from getting stuck and make skidding and hauling more economical.
- Divert running water off roads and primary skid trails when slopes exceed 10 percent. Figure out where streams of water will run off during rain or snow melt. Put in diversion devices to channel surface water off the road or trail.
- Keep roads away from streams, ponds and marshes. Set them back 100 feet on slopes less than 30 percent and 150 feet on steeper ones.
- Don't run ditch water directly into a stream. End roadside ditches before a stream crossing and divert the water into the woods.

*Carefully Locate Landings*

- Keep landings out of low spots and poorly drained places.
- Put landings on gently sloping ground that drains well.
- Set landings back at least 200 feet from streams, ponds, lakes and marshes to reduce siltation from erosion.

**Roadsides Along Major Travel Corridors***What will make logging jobs look better along major travel corridors?*

Some people object to logging slash, hung-up trees, poor utilization, deeply rutted roads and landings. Plan ahead to avoid these things. Be aware of the landscape. Logging a little differently usually keeps the roadside looking good.

*If a Major Travel Corridor Isn't Screened by a Hill, High Bank or Other Landform, Maintain a 100-foot-wide Buffer Strip.*

- Fell trees so the tops land away from the road. This puts the slash further out of sight and reduces the need for top lopping.
- Use all merchantable products. People don't like to see unused logs and bolts lying in the woods. If you cut them out, it lops off many of the large branches, too.
- Pull down hung-up or partly fallen trees. Fell bent and broken trees and use the merchantable material in them.
- Use care in skidding to protect understory vegetation -- shrubs and saplings make a good natural screen.
- Keep skidders back in the woods and off the right-of-way. This keeps the road banks from getting rutted and keeps skid trails out of sight.
- Cut lightly within 100 feet of the forest edge. Keep at least 50 square feet per acre in residual trees, including big ones. This keeps a forest-like appearance along the road.
- Keep in mind that trees at the edge of the woods provide the best screen.
- Cut stumps low.

*Try to Keep Landings Out of Sight. Dress Up Landings and Access Roads After You're Done*

- Put landings behind a hill, bank or landform that hides them from the road, or set landings as far back into the woods as practical. Use a set-back of

at least 200 feet whenever possible.

- Curve access roads somewhat: it is harder to see up a curved road than a straight one.
- Lay out landings so their long axes lie perpendicular to the road.
- Keep entrances from the road narrow to reduce visibility from the roadside. Widen the road back in the woods.
- Clear landings by burying debris or dragging waste material back into the forest. If you skid out only usable parts of the tree, there won't be much waste at the landing.
- Back-blade landings and access roads so they are smooth, level and free of ruts and mud holes. They look better and should rapidly seed into new vegetation.
- Place diversion devices where water might run down the roads and wash soil into roadside ditches.
- Regrade and clean ditches along the roadside. Close temporary roads.
- Where needed, seed access roads, landings and ditches, especially where they come close to the highway.
- Pick up oil cans, lunch wrappers, broken cable and other junk and litter.

**Fire Laws***Comply With New York State's Fire Laws*

- Keep logging debris and log piles at least 20 feet from the right-of-way.
- Lop all conifer tops.
- Check with DEC for more specific requirements for the town you're harvesting in.

**Try Them ... They Work**

Good stewardship of natural resources means careful use. Careful use provides for the needs of future generations as well as today's.

New York calls upon landowners, timber harvesters, contractors, forest managers and forest industries to harvest carefully. Everyone must work to keep our forests productive through safe and well planned logging. These guidelines offer solutions to problems. Use them. Do your part. Be a good steward of our forest resources.

The guidelines were developed by the New York State Department of Environmental Conservation, the New York Society of American Foresters, and the College of Environmental Science and Forestry.

# New York FLEP Practices

Source: Forest Land Enhancement Program (FLEP)

## FLEP 1

**Practice:** Landowner Forest Stewardship Plans (LFSP)

**Purpose:** Development or revision of a Forest Stewardship Plan, or upgrading of an existing forest management plan to meet Forest Stewardship Plan standards.

**Eligible Components and cost share rates:** Cost share shall be 75% of actual costs not to exceed the following rates for new plans and 50% for revised or updated plans:

New Forest Stewardship Plan	\$ 250 /plan
Plus 5 to 50 acres	\$ 9 /acre
51 to 100 acres	\$ 7 /acre
101 to 500 acres	\$ 5 /acre
500 plus acres	\$ 4 /acre
Revised or updated Plan	\$ 100 /plan
Plus 5 to 50 acres	\$ 4 /acre
51 to 100 acres	\$ 3 /acre
101 to 500 acres	\$ 2 /acre
500 plus acres	\$ 1 /acre

**Standards and Specifications:** Cost share is authorized for the preparation of a LFSP prepared to format dated October 2000, adopted by the State Forester and the State Forest Stewardship Coordinating Committee.

Cost share is authorized to revise existing LFSP with an expired life span (management recommendations not current) and update other forest management plans to LFSP standards.

Table 5. Area of timberland by county and site class (acres)										
	Total Site productivity class	225+	165-224	120-164	85-119	50-84	20-49	0-19	Not collected	Other
36105 Sullivan	507656.6	0	0	17120.7	40788	175487.1	274260.9	0	0	0
Total County code	507656.6	0	0	17120.7	40788	175487.1	274260.9	0	0	0



# Using Forest Service Inventory Data to Assess the Health of New York's Forest

By Douglas C. Allen

## Introduction

The U.S. Forest Service, in cooperation with the NYS Department of Environmental Conservation and forest landowners, periodically inventories New York's forest resources. The fourth, and most recent, inventory was completed in 1993. The final report includes summary statistics on such things as ownership pattern, amount and geographic distribution of forest land by forest type and tree size classes, growing stock volume by species, and annual net growth. Recently, I reviewed results from New York's latest inventory to see what they might suggest relative to forest health.

I propose that we think of a healthy condition, in general, as a situation where abiotic and biotic influences; i) do not threaten their ability to recover from natural or human-related stresses like insect defoliation, fire, disease, or air pollution and ii) do not imperil ownership objectives presently or in the future. The objective of this article leads me to a more focused definition that interprets health in terms of susceptibility to pest outbreaks and (or) vulnerability to damage. Any assessment or decision about forest health, however, requires that we compare present conditions (e.g., species composition, growth, crown condition, level of mortality, pest activity) to conditions that we normally might expect to encounter for a given set of site conditions, stage of forest development and geographic location.

The concept that damage has both economic and ecological components embraces concern for a wide range of commodity and non-commodity values. This view is evident in a common definition of "pest" as any agent (or combination of agents) that can prevent a landowner from optimizing values of interest or that is capable of eroding ecological conditions. In other words, we do not assume that wood products are the prime objective for, or even are of interest to, every forest landowner.

## Application & Interpretation of FIA Data

In its present form, information derived from the U.S. Forest Service Forest Inventory and Analysis (FIA) provides insight into some aspects of forest health. Useful interpretation in the context of forest pest problems, however, depends in large measure on the degree to which we understand a forest pest's life system and how the pest interacts with its host(s) and the forest community of which it is a part.

Recently a U.S. Forest Service scientist used FIA data on tree species composition and species abundance to improve our ability for estimating the likelihood that forest stands in south-central Pennsylvania will be defoliated by gypsy moth. Similarly, the Maine Forest Service has utilized FIA information on species composition, stand location and stand age to design damage surveys and to estimate the impact of specific agents that can threaten forest health; such as spruce budworm, hemlock looper and brown ash dieback.

## Hazard Rating

One of the most useful forest pest management tools is based on a concept known as hazard rating. The ability to describe forest conditions that are most susceptible to a specific pest problem or most vulnerable to damage allows the landowner or forest manager to apply limited resources for survey, control and (or) preventative measures to those stands where there is a high probability that damage will occur. This tool builds, in part, on a knowledge of pest ecology in relation to forest conditions such as the relative abundance of tree species, tree density and the occurrence and distribution of different age (size) classes.

In many instances we know very little about how changing the character of a forest will influence pest populations. Nonetheless, even for those poorly understood situations data currently provided by FIA may reveal potentially troublesome situations.

## Changes in Species Composition

The most recent inventory, for example, indicates a substantial increase in sugar maple and red maple growing stock in each of New York's eight forest regions since 1980. A similar, though less dramatic, pattern also is evident when one compares data from the 1968 inventory to that of 1980.

Undoubtedly, several events have influenced this trend. To begin with, even though the amount of timberland has remained about the same since the last inventory, the area occupied by northern hardwood groups (i.e., forest types that typically contain maple) has increased by approximately 500,000 acres. A legacy of selective cutting that discriminated against

economically more valuable species, such as ash, birch and black cherry, also has contributed to shifts in species composition. Additionally, red maple seedlings readily establish on many sites following a disturbance, and red maple stumps sprout prolifically. Both characteristics often give this species a competitive advantage. In many regions over the past three decades most of the large beech was removed from northern hardwood stands by beech bark disease, and the relative dominance (basal area) of this tree has been reduced even though it remains well represented in smaller diameter classes. Whatever the cause or causes, the continuing increase in maple abundance revealed by current FIA data suggests to me that future outbreaks of pests associated with sugar and red maple may be more frequent and (or) more damaging.

Experience with a variety of forest insects over the past several decades indicates that whenever one tree species or age class dominates a forest or landscape, there is a higher probability of more frequent or more damaging pest problems compared to conditions characterized by a mixture of species or more diverse structure.

One must be careful, however, when interpreting the significance of changing stand composition or shifts in the relative abundance of species. Whether or not these changes are significant from a forest health perspective depends on what is expected for a given time, site, geographic location, and forest type. The mere fact that a species is "gaining or losing ground" in terms of relative stocking does not necessarily signify a health concern. Such a change may, in fact, be a normal response to changing stand and/or site conditions.

### **Stand Density**

With the exception of beech and yellow birch in four of New York's nine forest regions and in a single region where ash and black cherry growing stock has decreased slightly since the 1980 inventory, the growing stock of all other major species associated with maple also has increased. This suggests that many stands are fully stocked and soon may be overstocked. Persistent overstocking encourages insects and disease-causing organisms that favor weakened or stressed trees.

### **Shift in Balance of Age Classes**

The most recent FIA report indicates that in all of New York's forest units there is substantially less area of hardwood timberland in the sapling/seedling size classes compared to the 1980 survey. Accompanying this change is an increase in the area occupied by the saw timber class (trees 11" or larger in diam.) in all units and an increased area of pole timber (trees greater than 5" but less than 11" in diam.) for five of eight units. This implies, of course, that the forest landscape is aging but also suggests that our northern hardwood forests are becoming more homogeneous structurally. As mentioned above, homogeneity in any form is thought to increase the probability of forest pest problems. An imbalance in the relative abundance of age classes also can have significance in the context of aesthetics, wildlife or timber.

### **Conclusions**

FIA was designed primarily to sample timber resources, but it is utilized frequently to evaluate other resource issues. From a forest health perspective, changes in stand stocking, density, distribution, age, and species composition may foreshadow potential forest pest problems. An example is the increasing abundance of red and sugar maple in New York's forests, which could set the stage for more frequent outbreaks of pests associated with these species.

What does this mean to the forest owner? Two things come to mind: i) whenever possible, a forest owner should take deliberate silvicultural steps to encourage species and/or age class diversity in their northern hardwood stands and ii) it will be prudent for forest owners to become familiar with potential maple pests in order to facilitate early detection of problems that can threaten owner objectives. To accomplish the latter, I recommend the following references:

Houston, D. R., D. C. Allen and D. Lachance. 1990. Sugarbush Management: a Guide to Maintaining Tree Health. USDA Forest Service. Gen. Tech. Rep. NE-129. 55p. (no charge)

Adams, K. B., D. C. Allen, P. D. Manion, and L. P. Abrahamson. 1995. Stewardship of Northern Hardwoods: a Forest Owner's Handbook. SUNY ESF. 84p. (\$10.00, check payable to "RF of SUNY") [Both publications are available from the SUNY College of Environmental Science and Forestry; Tree Pest and Disease Service; 133 Illick Hall; 1 Forestry Drive, Syracuse, NY 13210. (315)-470-6745]

A copy of the results of New York's most recent forest inventory is available from the USDA Forest Service; Publications Distribution; 359 Main Road, Delaware, OH 43015 (Alerich and Drake; 1995; Forest statistics for New York: 1980 and 1993; Resour. Bull. NE-132; 249 p.)

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# Sustainable Forest Harvesting: An Economic Perspective

Source: Penn State College of Agricultural Sciences  
Agricultural Research and Cooperative Extension

## Introduction

The future forest depends on your management decisions. Any decision to harvest timber requires careful planning, and you should compare alternative harvesting methods before you begin. This publication will compare two harvesting techniques— diameter-limit cutting and crown thinning - from the perspective of long-term economic sustainability. A professional forester can help you with the complete process of comparing methods and planning a harvest on your land, according to your short and long-term objectives.

Sustainable forestry encompasses social, ethical, ecological, and economic factors. Socially, sustainable forestry takes into account human activities such as forest jobs, forest recreation, and community involvement. Ethically, sustainable forestry suggests that landowners are obligated to leave healthy, productive forests for future generations. Ecologically, sustainable forestry considers biodiversity, water quality, and wildlife habitat. Economically, sustainable forestry should provide landowners with enough income to cover their costs and keep the forest a forest. By applying principles of sustainable forestry in their management activities - particularly timber harvesting— landowners can derive personal benefits while maintaining forests that are an asset to society. The key element in making sustainable forestry feasible is its affordability to the landowner. The following cost-benefit analysis will show you the short- and long-term economic results of two different harvesting methods.

## Harvesting techniques

Before harvesting timber, ask yourself two key questions: First, does the harvest meet your forestland objectives? You might harvest for a variety of reasons such as timber income, wildlife habitat, or aesthetics. Second, what will your future forest look like as a result of the harvest? Your answers to these two questions will heavily influence the type of harvest you carry out.

Generally speaking, there are two types of harvest: an intermediate cut (thinning) and a regeneration cut. A typical harvest prescription in Pennsylvania, where most of the forests are even-aged, is a series of intermediate treatments (to improve the stand quality) followed by a regeneration cut (to grow a new forest) at the end of the rotation. Boxes 1 and 2 describe two intermediate cuts, diameter-limit cutting and crown thinning. Many foresters argue that a diameter-limit cut is not a silvicultural practice since it does not address the residual forest, but focuses only on the trees removed. Both techniques provide economic revenue; however, the important question is which practice is more sustainable, measured from the

perspective of long-term income stream.

### 1. What is a diameter-limit cut?

In a diameter-limit cut, only trees having a diameter above a certain size (usually 12, 14, or 16 inches diameter at breast height) are harvested. This technique is popular because it is simple and easily understood. A diameter-limit cut provides high economic return (removing the larger trees), and because it leaves a residual stand (the smaller trees), the forest remains green. The proponents of diameter-limit cuts suggest that the smaller trees now will have room to grow.

However, most of Pennsylvania's forests are even-aged— where both large and small trees are the same age. After a cut, the remaining forest (composed of the smaller diameter trees) is usually poorer in species composition and quality. The remaining trees are not well spaced for improved growth and usually are slower growing, often damaged, sometimes genetically inferior, less desirable as commercially valuable timber species, and do not represent the same species mix as in the original stand. The remaining trees are likely to produce an inferior quality and quantity of seeds than the harvested trees. Also, the remaining trees do not respond well to the additional light conditions, producing physical defects such as epicormic branches and crown dieback, which further reduce their value. Therefore, repeated diameter-limit cutting eventually will degrade a forest, leaving it with poorly formed low-value trees and with less plant diversity for wildlife food and habitat.

### 2. What is a crown thinning?

A crown thinning is a harvesting method designed to provide increased growing space for the remaining trees. This type of thinning focuses on the remaining trees, rather than on the harvested trees. This process provides a relatively even distribution of residual trees across the harvest area and provides space for these trees to grow faster and expand their individual crowns. A crown thinning removes trees in the upper crown classes. It also removes many trees from below the average diameter of the stand, and some from above. (The typical ratio is two-thirds from below and one third from above.) In addition, the objective of any thinning is to remove poorer quality stems and undesirable species. This increases the average stand diameter, helps the remaining trees grow faster, and allows cutting choices between higher-quality trees in subsequent harvests.

### Comparing a diameter-limit cut to a crown thinning

In Table 1, we compare a crown thinning to a 12-inch diameter-limit cut in a 75-year-old even-aged northern hardwood stand that is predominantly sugar maple. The tree growth and yield data for this comparison come from

research in northern hardwood stands (Nyland 1993). This data simulates production from the two treatments over a 120-year rotation. From age 75 on, there is a harvest every 15 years (4 entries), with the final entry a regeneration cut.

The question is which harvesting technique provides the greatest economic revenue. Cost-benefit analysis (CBA) provides a comparison for returns from alternative investments. This analysis measures Net Present Value (NPV), the present value of future sums of money, and requires an interest rate. This rate compensates for the fact that money received in the future (from timber harvesting) is not worth as much in today's dollars because money earned today would increase in value as it earned interest over time—just as though it were held in the bank at a certain interest rate. The interest rate chosen for the calculation is one the landowner is comfortable using, and usually represents what he or she could expect to earn from the best comparable investment (e.g., a bank deposit or mutual fund).

Other information necessary to perform a cost-benefit analysis includes the time periods between cuts and the value of the wood at harvest. This analysis involves four critical times: the present (initial harvest), a cut at 15 years, a cut at 30 years, and a cut at 45 years (end of rotation). The value of the wood is the stumpage value, which is determined by multiplying the board-foot yield by the stumpage price (Table 1). (The board-foot yield for this analysis is from the growth and yield studies mentioned previously.) The stumpage price for northern hardwood species, primarily sugar maple, comes from the Penn State Timber Market Report. This price, for sugar maple, averaged about \$200 per thousand board feet (MBF) over the last few years.

The procedure for finding Net Present Value (NPV) requires summing the Present Value (PV) of each harvest. In this example, we used an interest rate of 4%. The formula used is:

$$NPV = \frac{\text{Sum of present value}}{(1+i)^n}$$

Where:  $i$  = interest rate  
 $n$  = year in the investment period when cost or revenue occurs

At a 4% discount, the results (Table 1) suggest that the diameter-limit cut is more profitable.

Is this correct? No, because we need to consider the improved quality and value of the trees left by the crown thinning. Note that the crown thinning has a higher proportion of its yield in larger diameter classes. This wood will include more Grade 1 logs, which will fetch a higher price than the average given in the Table 1 example. The

minimum diameter for Grade 1 logs is 16 inches, and trees larger than this may even produce some veneer, the most highly valued product.

To estimate these Grade 1 prices, we again use the Timber Market Report. The Grade 1 price has averaged about \$450/MBF over the last few years. We redo the calculation of NPV by separating the harvested tree volume into that above and below 16 inches in diameter (Table 2).

The results in Table 2 are markedly different from those in Table 1. Table 2 shows that the crown thinning is an economically superior investment over the course of the rotation. Also, this example does not account for pulpwood; if it were marketed, the crown thinning should do even better economically. This is because smaller diameter wood is removed during crown thinning, but not in a diameter-limit cut.

This example shows how important it is to consider not only short-term economic returns from a timber harvest but also the long-term consequences. The diameter-limit cut gives greater initial sawtimber removals and higher immediate returns. A diameter limit cut provides the landowner with short-run profits, but at the expense of potential revenues from future harvests. Over the rotation, however, we see that the crown-thinning technique provides higher sawtimber yields, more high-value sawlogs, and higher financial return.

From an economic sustainability perspective, the crown thinning not only is financially superior, but also prepares the site for the future rotations. The diameter-limit cut will be economically unsustainable because the remaining forest does not have any quality trees. However, your results may change if you use different prices or a higher interest rate. Higher interest rates discount revenue received in later years more than that received in earlier years. Since most of the crown thinning revenues are received toward the end of the rotation, they will be less in Present Value terms than diameter-limit cut revenues, which are received near the beginning of the rotation.

The diameter-limit cut in this example results in a degraded stand that is ecologically and economically unsustainable. Ecologically, the stand loses its habitat quality for many "desired" wildlife species. Economically, the forest changes in composition from high-value species like sugar maple to lower-value species such as birch, beech, and striped maple. Furthermore, the diameter-limit cut has narrowed the range of alternative management activities a landowner can pursue. The only alternative after repeated diameter-limit cuts may be expensive restorative activities. A healthy forest using sustainable harvesting techniques will provide the landowner with intangible benefits and a wider array of options to achieve future management objectives.

# Farmland Preservation Techniques

Source: Hillsdale Community Center

## Conservation Easements

A conservation easement is the voluntary donation of land to have restrictions placed on it for the protection of agriculture, open space, and natural resources. The landowner still owns the land and can use it for specific conditions that the landowner and the nonprofit easement holder have agreed upon. Agricultural easements are designed to benefit the landowner, to assist him in keeping agricultural lands productive and protected from development.

The easement is considered a charitable contribution for which the landowner does not receive direct income benefits from the donation of their land. The landowner benefits from the donation through federal and state income tax deduction, lower property taxes, and reduction in estate and inheritance taxes. The value of the conservation easement is the difference between the fair market value and the value of the land after restrictions have been imposed. These values are determined by a professional surveyor who considers the fair market value based on the development pressures of the land to determine how much the conservation easement is worth. The tax relief that the landowner receives can be used to keep the land productive without having to sell more land and ensure the property for future generations.

Conservation easements are flexible to the landowners needs and may have limited provisions for use and development. Certain rights to use the property can be held such as the right to grow crops, cut timber, construction of new farm buildings, careful location of house for family members, or subdivision of a lot for resale. Requesting to keep these rights will affect the value of what the conservation easement is worth. The easement holder assumes the responsibility to make sure that all the restrictions are enforced.

The length of the easement may be flexible from a few years to permanent preservation. However, federal tax benefits are only available on permanent easements. The conservation easement stays in effect if the property is bought, sold, given or transferred to another owner. The new owner than assumes all responsibility of the conservation easement. When the surrounding areas change to the extent that the restrictions of the conservation easement can no longer be met the easement may be changed or terminated by the courts.

## Purchase of Development Rights (PDR)

The purchase of development rights has a similar setup and advantages as conservation easements. The landowner voluntarily sells the development right to his property, for compensation for not developing the land. Like conservation easements the landowner maintains full ownership of their land for agricultural uses and the land can be sold or transferred, but can never be used for non-farm development.

The value for the purchase of the development rights is the difference between the fair market value and the agricultural use value of the land. With the income from the sale of the development rights the landowner has money to expand the farm operation, pay off debt, college education, inheritance to non-farm related children, retirement, and much more. Besides extra income, the sale of development rights allows the land to be assessed at a lower tax rate, decreasing property tax and inheritance taxes of the land.

However, none of these programs are entirely permanent and may be designed to allow some way out by proving through stringent test that keeping the land open for productive agriculture is no longer possible in that area. Then most programs allow the landowners to buy back development rights.

One fundamental concern with PDR programs is funding the program. The funds may come from private agencies like American Farmland Trust, state bond referendums, grants, donations, P.A. 116 lien fund, or an increase in other local funding sources like a special tax on building permits. An example of alternative funding can be taken from the state of Pennsylvania who issued an extra 2% sales tax on cigarettes. These programs have passed voter approval and have been largely supported by non-farming communities and urban residents who have witnessed the loss of farmland and open space. Most people may not live in rural communities, but enjoy viewing them on occasion and knowing that they will always be there.

### **Transfer of Development Rights (TDR)**

Transfer of development rights is another voluntary preservation option that compensates the land owner for not developing their land by allowing the development rights to be transferred to a development district.

For TDR to work properly two districts need to be established, a preservation, or "Sending" area, where no development will occur, and a "Receiving" area that uses the rights for higher development densities above communities zoning guidelines. The TDR then becomes a tool to redirect growth from one area of the community to another.

TDR has similar characteristics to PDR. Each has as its focus the protection of agricultural land while allowing the landowner to be compensated for not selling and developing their land. Compensation benefits include reduced tax assessments, the right to buy, sell, or transfer the property, and the knowledge that the land will be preserved for future generations to use and enjoy. TDR requires more planning and oversight by local government.

# Local Laws & Agricultural Districts

Source: NYS Department of Agriculture and Markets  
Agricultural Protection and Development

## Guidance for Local Governments and Farmers

Article XIV, Section 4 of the New York State Constitution, added in 1970, provides that the policy of the State shall be to encourage the development and improvement of its agricultural lands for the production of food and other agricultural products and states that the legislature, in implementing this policy, shall include adequate provision for the protection of agricultural lands. Shortly thereafter, in 1971, the Agricultural Districts Law, Agriculture and Markets Law (AML) Article 25-AA, was enacted implementing that policy. Section 305-a of Article 25-AA contains the following mandate:

“Local governments, when exercising their powers to enact and administer comprehensive plans and local laws, ordinances, rules or regulations, shall exercise these powers in such manner as may realize the policy and goals set forth in this article [Article 25-AA of the Agriculture and Markets Law], and shall not unreasonably restrict or regulate farm operations within agricultural districts in contravention of the purposes of this article unless it can be shown that the public health or safety is threatened.”

For purposes of AML §305-a, subd. 1, “Farm operation” means: “...the land and on-farm buildings, equipment, manure processing and handling facilities, and practices which contribute to the production, preparation and marketing of crops, livestock and livestock products as a commercial enterprise, including a 'commercial horse boarding operation' as defined in subdivision thirteen of this section. Such farm operation may consist of one or more parcels of owned or rented land, which parcels may be contiguous or noncontiguous to each other.” The definition of “crops, livestock and livestock products” is contained in AML §301(2).

The brochure *Local Laws and Agricultural Districts: How Do They Relate?* was prepared by the Department to assist municipalities in drafting and administering local laws and ordinances which may affect farming in an agricultural district. The brochure also offers guidance to farmers on the application of AML §305-a. Local governments and farmers are encouraged to review that document for information on the procedure for requesting Department assistance as well as general discussion of the law. The following guidelines provide more details on the application of AML §305-a to several common agricultural topics. However, they should not be substituted for legal advice from a municipality’s attorney. The Department hopes that this information will assist local governments and farmers in resolving issues that may impact farm operations within their communities.<sup>1</sup>

### GENERAL INFORMATION

In examining whether a local law is unreasonably restrictive, the Department of Agriculture and Markets considers several factors, including, but not limited to: whether the requirements adversely affect the farm operator’s ability to manage the farm operation effectively and efficiently; whether the requirements restrict production options which could affect the economic viability of the farm; whether the requirements will cause a lengthy delay in the construction of a farm building or implementation of a practice; the cost of compliance for the farm operation affected; and the availability of less onerous means to achieve the locality’s objective. The Department also takes into account any relevant standards established under State law and regulations. Where local standards have exceeded the State standards, the Department has, in many instances, found the

local laws to be unreasonably restrictive. Each law, however, is examined on its own merits. If a local government believes that local conditions warrant standards that differ from the State's, the Department considers those conditions in evaluating whether the local standards are unreasonably restrictive.

The Department recognizes and encourages the efforts of some local governments to comply with AML §305-a by providing a Right to Farm exemption, for example, stating that “[n]othing contained herein shall be deemed to limit the right to farm as set forth in Article 25-AA of the NYS Agriculture & Markets Law....” Such local laws often further provide that no “sound agricultural practice” as defined in Article 25-AA shall be deemed prohibited under the ordinance or subject to its permit requirements. This provision could be problematic for both the local government and farm operations. AML §308 (New York’s Right to Farm law) does not define “sound agricultural practices.” The Department does not make prospective judgments on agricultural practices and has not defined what constitutes a sound agricultural practice. Section 308 requires that agricultural practices be evaluated on a case-by-case basis. Department staff review each practice, for which an opinion is requested, on its own merit and a Commissioner’s Opinion only examines the condition and management of the practice in effect at the time of the review. Further, the absence of an opinion from the Commissioner does not mean that a particular practice is unsound.

Under the procedures followed by the Department in conducting sound agricultural practice reviews, generally staff consult the landowner, neighbors, State and local agencies, pertinent literature and experts in the particular field of interest. The landowner whose practice is under review generally needs to be a willing participant for the Department to fully evaluate a practice and reach a valid conclusion as to its soundness. Information regarding management of the practice and grant of access to the farm premises is usually needed from the farmer. The review process is time consuming and generally takes from six to twelve months before an opinion is issued. To require a farmer to obtain an opinion to avoid prosecution or permitting under the local law would be unduly burdensome and, generally, unreasonably restrictive.

#### AVAILABLE GUIDANCE DOCUMENTS

1. Guideline for Review of Local Laws Affecting Farm Worker Housing
2. Guideline for Review of Local Laws Affecting Nutrient Management Practices (i.e. Land Application of Animal Waste, Recognizable and Non-recognizable Food Waste, Sewage Sludge and Septage, Animal Waste Storage/Management)
3. Guideline for Review of Local Laws Affecting On-Farm Open Burning
4. Guideline for Review of Local Laws Affecting the Control of Farm Animals
5. Guideline for Review of Local Laws Affecting Farm Operations’ Use of Wetlands
6. Guideline for Review of Local Laws Affecting Direct Farm Marketing Activities
7. Guideline for Review of Local Laws Affecting On-Farm Composting Facilities
8. Guideline for Review of Local Laws Affecting Temporary Greenhouses (under development)
9. Guideline for Review of Local Zoning Laws (under development)

<sup>1</sup> Local laws and their administration are reviewed on a case-by– case basis. These guidance documents are intended to inform local governments and farmers generally of how the Department interprets and applies AML §305-a. The facts and circumstances of each particular matter are addressed uniformly and in accordance with applicable statutory requirements.

FACT

8

SHEET

# 9 Business Succession-Planning Mistakes to Avoid

Source: First Pioneer Farm Credit



**First Pioneer**  
FARM CREDIT

## 9 Business Succession-Planning Mistakes to Avoid

*Provided by Judy M. Sescil, as a member of Financial Planning Association*

Most business owners expect to pass on some day their pride and joy—mostly likely to their children, but possibly to an employee or an outside buyer. This change in ownership is what will fund the owner's retirement and carry the owner's creation down through the generations. Yet many small-business owners make mistakes when it comes to succession planning that can thwart their dream.

**Waiting too long to plan.** Many business owners leave succession planning until the last moment—if they plan at all. Yet an ideal succession plan requires laying the groundwork over many years—some experts recommend planning your exit strategy from the day you start the business. How you want to exit the business tomorrow strongly influences how you structure and operate the business today.

**Assuming your children will take over the business.** While many children want to eventually take over the family business, not all do. Perhaps your child really wants to be a schoolteacher or minister or doctor instead of the owner of a small factory. It's critical to talk to them about what they see for themselves. Encourage them to work in the business, but don't pressure them. It's not fair to them, and it will probably be a disaster for the business if you try to shove them into a role they don't want. You'll want to know their desires as soon as practical in order to pursue other avenues if necessary, such as selling to a valued employee or outside buyer.

**Dividing the business equally among heirs.** Equal partnership among heirs is usually a recipe for disaster because of inevitable conflicts, different skills and different visions. Ultimately, one child needs to run the company. That's why it's critical to plan well in advance, to see who among your children has the talent and genuine desire to run your business. And if a child doesn't want to be involved in the business, devise a way to leave the child nonbusiness assets such as insurance, or perhaps nonvoting shares in the business (though this, too, can lead to conflicts).

**Waiting too long to give real authority to the heir.** Another common mistake is to wait too long to give genuine responsibility and authority to a potential heir. Many owners never give it up until the day they retire—only to learn painfully that their child isn't up to the task. Involve them in your decisions and let them make decisions. Let them build the needed relationships with vendors, employees and customers. Let them make mistakes. You made mistakes, too, when you were starting and growing the business.

to the task. Involve them in your decisions and let them make decisions. Let them build the needed relationships with vendors, employees and customers. Let them make mistakes. You made mistakes, too, when you were starting and growing the business.

**Not trusting them.** This goes along with the failure to give your heir genuine authority. While you don't want to trust the person blindly just because they're family, don't be so suspicious that you're constantly peering over their shoulder. This creates an atmosphere of distrust.

**Not letting them work for another business.** Sometimes encouraging an heir to work a while for someone else before committing to the family business can be valuable training and can give them a clearer sense of whether they ultimately want to run the family business.

**Being secretive about your plans.** Business owners frequently play their succession plans close to the chest. Perhaps they're worried about stirring up family conflicts or they just don't like to talk about the family money. This is a disservice to your heirs and potentially a disaster for the business. The sooner you can inform them how you see your succession plan, the sooner they can make their own plans. It also gives you time to modify the plan, if necessary. Keep them informed, perhaps through periodic family meetings.

**Not thinking of your retirement years.** Retirement can be difficult for small-business owners because often their business is the all-consuming center of their life, even their personal identity. Without a clear sense of what they want to do in retirement, they inevitably drift back to the family business, frequently meddling in how it's currently being run—often to the detriment of the business and family relations.

**Planning alone.** Business succession planning is complicated (we haven't even discussed tax issues here) and fraught with land mines. Outside experts can be invaluable, particularly someone who can lead family meetings and ease family conflicts through their knowledgeable, objective perspective.

October 2003—This column is produced by the Financial Planning Association, the membership organization for the financial planning community, and is provided by Judy M. Sescil, a local member of the FPA.



# Estate Planning Tips

Source: First Pioneer Farm Credit

## Estate planning tips

If you are among the two out of three farmers who hasn't done any serious planning, your estate will probably be taxed significantly more than necessary. Most others pay no estate taxes at all, while the majority of farm families do. Estate planning cuts across the fields of legal, financial and insurance planning, and calls for an understanding of farm and family business issues. Bringing the next generation into the family business is also a part of estate planning.

### Why farmers need Estate Planning

- To reduce or postpone income tax while living
  - To reduce or eliminate income taxes and expenses at death
  - To provide the orderly distribution of assets upon death
  - To provide for fair or equitable distribution to non farming family members
  - To assure the family business/farm stays intact for family or if none of them is planning on farming to ensure they are not having to sell it after your death.
  - To verify that the current Will coincides with objectives and goals
  - To ensure that the current Will does not create additional costs or problems
  - To assure maximum advantage is taken regarding tax structures
  - Outline expenses and taxation upon death
  - Provides alternatives for passing down family business/farm
- Tailor made to your family, goals and situation

### Some areas to consider:

- Planning for untimely death and disability, including a contingency plan for your business. For example, will your spouse run the farm?
- Working out a plan with an estate planning team—accountant, lawyer, consultant and insurance underwriter
- Wills, estates, trusts
- Gifting

Special farm use valuation

### Questions to ask about retirement planning:

- Do you know how much income Social Security will provide?
- Are you familiar with various options in tax-deferred retirement plans (IRAs, Keoghs, SEPs)?
- Are you aware of the financial options your life insurance may provide at maturity?
- Have you considered the tax effects of leasing or selling real estate after retirement?

