

Marketing **Forest Products**

Understanding the Sale Process

Bulletin 367



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Maryland's Forest Stewardship Information Service

www.naturalresources.umd.edu

Table of Contents

1) Develop a forest stewardship plan.	7
2) Interview, select, and enter into a contract with a consultant forester.	9
Steps to Selecting a Consulting Forester	9
3) Conduct Preharvest Planning	10
Select a Harvest Method Based on Sound Silviculture	10
Mark and Tally the Timber to be Harvested	14
Understanding Stumpage Value	15
Stumpage Price Reports	17
4) Solicit Competitive Bids on the Same Timber	19
The Case for Horse Logging	19
5) Select a Logger and Sign a Contract.	19
6) Oversee the Sale	20
Forestry Best Management Practices (BMPs).	21
Where to Get Help	22
Live in Another State?	22
APPENDIX A	
Selected Timber Management Terminology	23
APPENDIX B	
Sample Landowner Contract	25
APPENDIX C	
Sample Bid	27
APPENDIX D	
Sample Sales Contract	29
Explanation of Sample Sales Contract	31
References	33

There are many reasons for choosing to harvest timber on your land—both economic and non-economic. Landowners who choose to sell their forest products as fuelwood, timber, or pulpwood have the opportunity to generate income. This income can provide for special “life needs” such as a child’s education, retirement, or help with the costs of starting a business.

However, depending on the landowner’s management goals, harvesting forest products can also create or modify wildlife habitat on the property; removing immature trees can promote the growth and vigor of residual trees; and natural events such as damage by gypsy moth and storm damage can provide an opportunity to harvest forest products and receive some revenue that would otherwise be lost. Many landowners wishing to create recreational trails for hiking, biking, or horseback riding can use roads created by forest harvesting to greatly improve access with little direct cost.

Landowners who leave their woodlands alone may not produce optimal wildlife habitat. In an unmanaged forest, overcrowding often retards tree growth, makes forests more susceptible to disease and insect damage, and reduces the diversity of wildlife habitats. Woodland areas of any size can be managed to improve wildlife habitat and tree growth. In many cases, owners of adjacent properties can work together to improve management and reach shared goals. As forest properties have become smaller, it may be necessary for adjacent landowners to work together to have sufficient timber resources to make a commercial harvest possible.

This fact sheet is intended to guide the forest landowner through the timber marketing process. There are six basic steps to ensure a successful timber harvest:

- 1) Develop a forest stewardship plan.
- 2) Interview, select, and enter into a contract with a consultant forester.
- 3) Conduct preharvest planning activities—mark and tally the timber and lay out roads.
- 4) Solicit competitive bids on the timber.
- 5) Select a logger and sign a written contract.
- 6) Oversee the sale until logging is complete.

Each of these steps is detailed in the text that follows.

1) Develop a forest stewardship plan.

Forest stewardship requires the management of forest resources in a way that meets the needs of current owners, but does not adversely affect future generations. Therefore, the decision to harvest trees should be part of a written forest stewardship plan and not the result of a sudden offer from a timber buyer. Forest stewardship plans describe the forest resources present on the property, the landowner’s management goals and objectives, and the recommended practices or activities to be carried out over the next 10 years on the land. The plan serves as

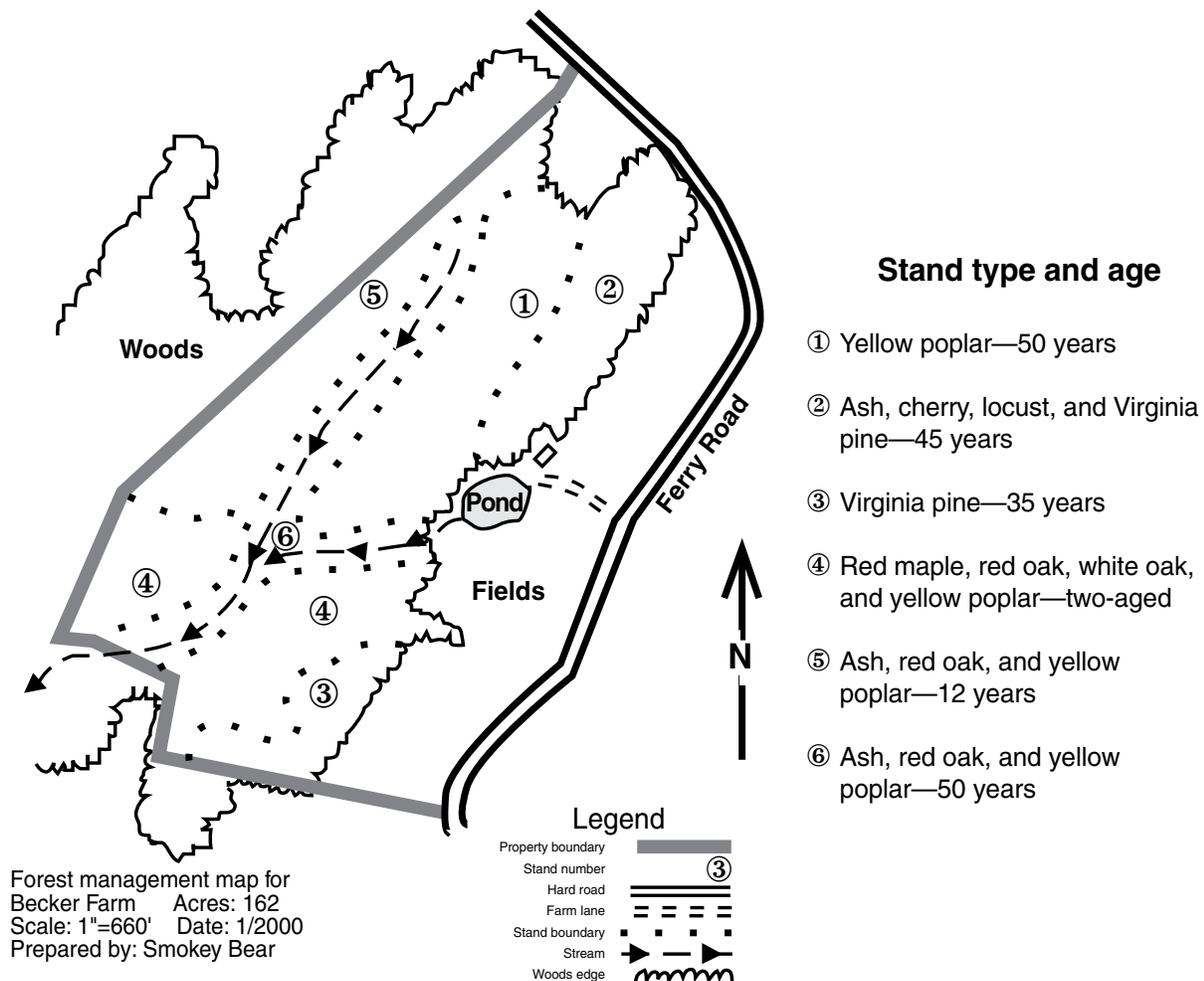


Figure 1. A forest stand map of the Becker farm from Fact Sheet 625, “Developing a Forest Stewardship Plan.”

a “roadmap” to guide your actions and can be developed by any professional forester. More information on the details of a forest stewardship plan can be found in Fact Sheet 625, “Developing a Forest Stewardship Plan,” available from Maryland Cooperative Extension.

What type of forester do I need? Maryland is one of the few states in this region that requires a professional forester to have a state license. To be licensed, the forester must have a 4-year forestry degree, have forestry experience, and complete eight continuing education credits every two years. There are four types of foresters:

- A **public agency forester** is typically based in a specific county or multi-county area and works for the State

of Maryland DNR Forest Service. They can develop forest stewardship plans but will not handle commercial timber sales.

- A **consultant forester** is an independent forester who works as the landowner’s agent representing the landowner’s interests. They work on a commission or fee basis. They can develop forest stewardship plans as well as work with the loggers to carry out the timber harvest. They provide other services as well.
- An **industrial forester** works for a particular mill and represents the interests of that mill. Different companies offer forest management services.

- An **extension forester** is a professional educator who works for the University of Maryland Cooperative Extension and provides educational materials, workshops, research, and other assistance.

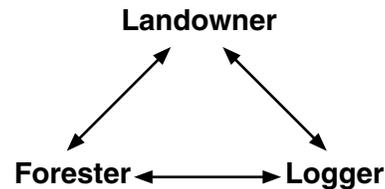
A listing of state, consultant, and industrial foresters can be found at www.naturalresources.umd.edu.

2) Interview, select, and enter into a contract with a consultant forester.

The harvest of timber is an activity that most landowners will only do a few times during their lifetime. It is not recommended that you sell directly to a buyer who comes to your door and offers money for your timber. Most landowners lack the knowledge to know if they are getting an equitable financial return, what the impact will be on their future forest, and even what a good logging job looks like.

Instead, landowners are encouraged to use an agent or representative of their choice to guide them through the process of selling timber. In most situations, the landowner hires a consultant forester to act as the landowner's agent in the sale. A well-run timber sale includes three people: the landowner, the logger, and the professional forester. Using a consultant forester will usually result in a better job environmentally and a better financial return. A written sales contract is used to assure protection of the land resources. Ideally, the consulting forester should regularly check on the harvest progress and work with the logger to protect the landowner's interests. Normally, trees in the sale area are individually selected, marked, and tallied by type, size, and product. With specific volume and tree information developed by the consultant, the landowner knows what trees will be cut before the harvest and can visualize

what the trees will look like. Finally, using a consultant forester will usually result in more income because the timber is properly measured, evaluated and sold using a competitive bid, or "sealed" process with guidance from a knowledgeable professional.



Timber Sale Triangle

Some forest landowners are reluctant to hire a professional consultant forester because a fee is involved. However, experience proves that a higher sale price more than makes up for the forester's fee (often many times over) and the site is usually left in better condition for the future. An additional benefit to having a consultant forester assist in a timber sale is that fees associated with hiring a consultant are normally deducted as a sale expense. A consultant forester can help the landowner through all the steps of a timber harvest.

Steps to Selecting a Consulting Forester

As with other professionals, some consulting foresters are better than others at representing the landowner's and the forest's best interests and following through on all duties. The following recommendations will help you select the best forester for your needs.

First, it is highly recommended that you talk with other landowners who have used a private consultant forester. Word of mouth will usually help you find reputable foresters whom your neighbors have been satisfied with.

Second, after selecting several consulting foresters, interview them on the phone about your forest stewardship objectives, their cost of services, availability, etc. You should ask for references, experience, and a prior job site to inspect. While they must be registered in Maryland, ask if they are a member of a professional association such as the Society of American Foresters or Association of Consultant Foresters.

Third, have one or more of the foresters visit you on your property. Most will provide an initial visit at no cost. You should select a forester who understands and can fulfill your goals, provides a reasonable cost for services, has good references, and has a personality compatible with yours.

Finally, sign a written contract with the forester regarding the services and fees and communicate with him or her regularly. Appendix B provides an example of a sample landowner contract. The forester will become a partner in the stewardship of your land.

3) Conduct Preharvest Planning

Select a Harvest Method Based on Sound Silviculture

Silviculture is a planned process for tending immature trees and establishing new trees in a forest—how to grow them, how to maximize growth and return, and how to manipulate tree species compositions to meet landowner objectives. Silviculture plans are developed to enhance forest benefits including visual and scenic qualities, wildlife habitat, ecological aspects, water quality and quantity, wood production, and recreation enjoyment.

Perhaps it is worthwhile to mention what silviculture is *not*.

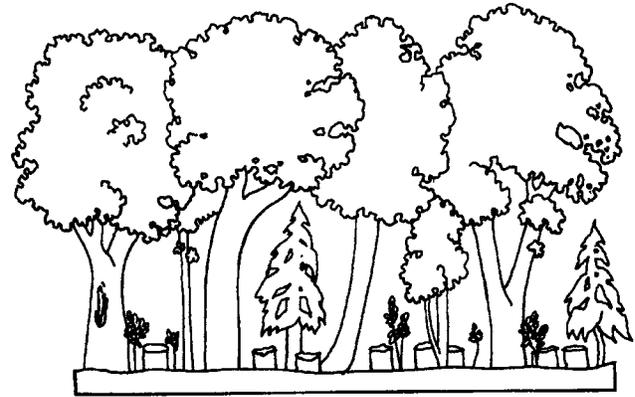


Figure 2. High-grading cutting.

“High-grading” and “diameter-limit cutting” are not acceptable silviculture practices.

High grading (often referred to as “select cutting”) is cutting only the highest value trees with smaller, defective, and lower value trees left for continued growth or as a potential seed source. Diameter-limit cutting can also result in high-grading because trees are not selected based on their individual attributes, but only on their diameter. Diameter-limit cutting can also be very confusing and difficult to administer because the location of the “diameter” that is being used for reference is often quite variable and may be based on the stump diameter rather than the actual size tree, which is normally calculated at breast height (4.5 feet above the ground).

Because most forests in Maryland are even-aged the smaller diameter trees are usually the same age as the larger ones, but are slow-growing and lack the potential to form the new forest. When only larger, better trees are removed and the smaller, inferior ones remain, the quality of the forest declines rapidly. The financial gain of high-grading or diameter-limit cutting exists only briefly, yet ownership objectives will be sacrificed for decades. A similar analogy from livestock is the farmer who shoots the blue ribbon bull and keeps the runts of the litter for breeding stock.

Silviculture looks not only at the current forest, but also at the effects of present-day harvesting on the *next* forest. Foresters are in a unique business in that they commonly make management decisions that can impact tree quality, wildlife habitat, and growth many years into the future. Most landowners are not interested in maximizing timber production and silvicultural practices can be applied that allow a combination of objectives to be achieved (for example, a balance between wildlife habitat, aesthetics, and timber production).

Silvicultural harvesting methods can be categorized into three practices: uneven-aged management, even-aged management, and improvement cuttings. The three practices are described below:

Uneven-aged Management

Uneven-aged management harvesting systems—those that have a mix of trees of different ages, involve the removal of trees through either *single tree selection* or *group selection*. Single tree selection removes individual trees dispersed throughout the forest. Every 10 to 25 years, some trees of all sizes, quality conditions, or ages are removed. Small openings are created for the establishment of new trees. Also, by removing some of the trees, nutrients and growing space are available to the remaining trees. This type of harvest requires the movement of equipment throughout the forest to remove selected trees and may result in damage to trees that are left.

With the group selection system, small groups of trees covering one-fifth to one-acre are removed to create an opening. The openings provide conditions for the establishment of new trees. Between the openings, the cutting will also remove scattered individual trees to thin the rest of the forest and promote the growth of the trees remaining. Repeated application of this system creates groups of trees of

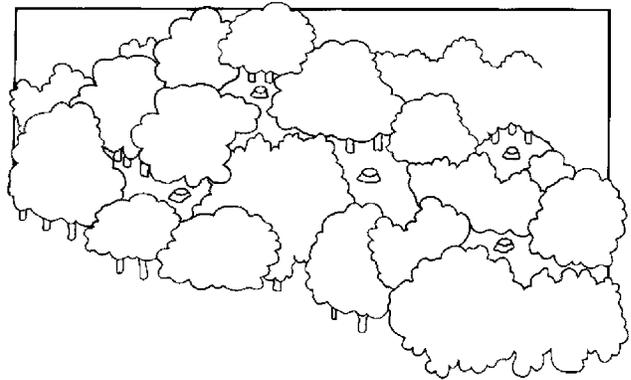


Figure 3. Single tree selection.

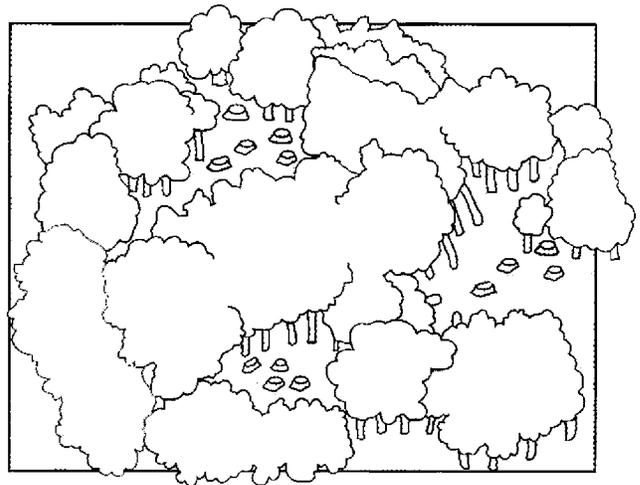


Figure 4. Group selection.

different ages, dispersed throughout a stand. Due to the locations and sizes of the groups, each of the age classes occupies a similar amount of space in the stand.

Even-aged Management

Even-aged management involves *shelterwood*, *seed-tree*, and *clearcutting* methods. The shelterwood system creates stands with trees all about the same age after a series of two or three harvests. Generally one-half to two-thirds of the mature trees are removed. This lightens the overstory, but leaves a reserve of tall trees to serve as a source of seed and to partially shade the ground. New trees become established from their seeds. Then another cutting removes the remaining

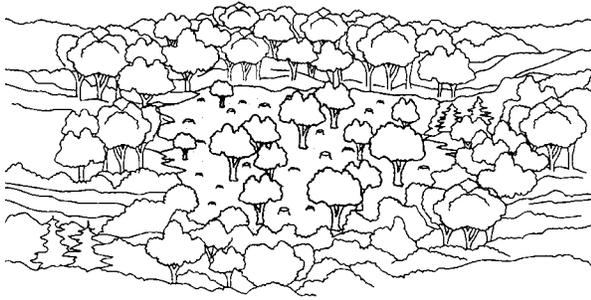


Figure 5. Shelterwood.

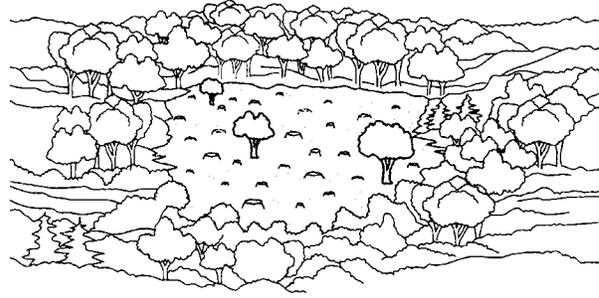


Figure 6. Seed tree cutting.

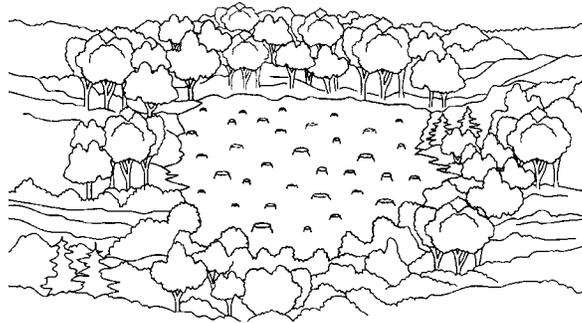


Figure 7. Clear-cutting.

older trees when the new trees reach heights of 5 to 10 feet. This type of harvest may be more desirable by landowners who are concerned about the visual impacts of removing large numbers of trees at one time. It also is very effective in encouraging regeneration in forests of heavy seeded species such as oak, hickory and walnut, where deer have browsed much of the understory regeneration. The increased sunlight will encourage the establishment of new tree seedlings that can be a part of the future forest when the tree canopy is removed.

Seed-tree and clearcutting systems also create stands where all the trees are about the same age, but most or all of the trees are removed during the initial harvest. The seed-tree method removes all but a handful of widely scattered mature trees and these provide seeds for the new tree seedlings. A second cutting removes all of the mature

trees when new trees reach heights of 5 to 10 feet. Clearcutting removes all the older trees at one time, providing an open environment for a new age class to become established and grow. Seed tree and clearcutting cause dramatic visual changes in the forest that are usually minimized after a few years of growth. They are valuable and essential management tools in the following situations:

- When the existing forest has been repeatedly highgraded and there are not enough trees of desirable species or genetics to make a new forest.
- When you are trying to regenerate tree species that need full sunlight to survive and grow to maturity. This is important for many of the species we value, such as white and loblolly pine, oak species, black walnut, ash, yellow-poplar, and black cherry.



Figure 8. Overabundant deer have browsed the vegetation in this oak forest up to a height of 6 feet. The harvest system chosen must consider how to encourage adequate regeneration for the future forest.

Improvement Cuttings

Improvement cutting includes a range of practices, such as commercial thinning, timber stand improvement, and crop tree release. The practice removes poorer quality trees, as well as some of the better quality ones, to allow the remaining trees to take advantage of the new growing space between the tops of the trees (see Figure 9). The remaining trees use the available sunlight and space to produce more leaves, which increases the production of “food” in the leaves. This increase in food is used by the tree for growth, and results in a more rapid rate of diameter growth, compared to trees that are crowded. It is important to understand that the primary purpose of improvement cuttings is not to regenerate the forest, but to increase the growth rate of the remaining trees and alter the species that will dominate the future forest. It also provides a source of income for landowners.

Thinning the forest can have major benefits for wildlife habitat, an objective that interests most landowners. Most producing trees (oaks, hickory, cherry, walnut, etc.) left after the harvest will expand their crowns and provide ample food crops for wildlife. The creation of small openings in the forest will fill with new growth and improve food and shelter for wildlife on the ground. You may want to keep a few hollow trees or dead trees per acre for wildlife, or favor trees that bear fruit and nuts for wildlife, such as oaks, hickory, or cherry. Your forester can mark trees that should be left for wildlife. About a year prior to harvesting, grapevines and other vines should be cut at the ground so that they do not smother the new forest regeneration. However, remember to leave some vines in poorer quality trees for wildlife.



Figure 9. Forest improvement cuttings or thinnings open up spaces in the existing forest canopy (left) so sunlight hits the forest floor and the crowns of remaining trees have room to expand (right). This results in more rapid diameter growth of the remaining trees.

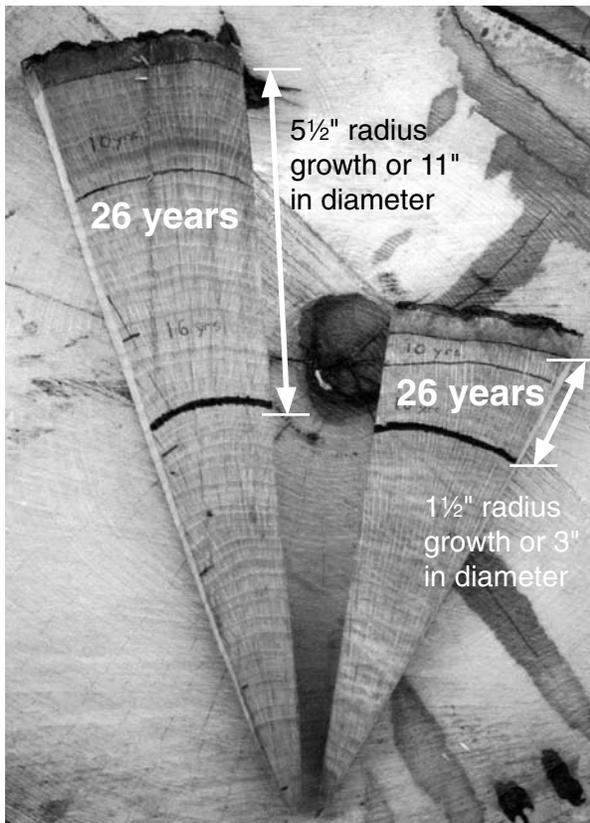


Figure 10. Slices from two trees demonstrate how thinning the forest at the right time can improve diameter growth. The tree on the left came from a part of the forest that was thinned at 35 years of age (the black line) and grew about 11 inches in diameter over the next 26 years. The tree on the right was from a part of the forest that was not thinned. Without room to grow, this tree only grew about 3 inches in diameter over the next 26 years. The response of a tree to thinning will depend on a number of factors.

Mark and Tally the Timber to be Harvested

The forester should meet with you on the property to review the forest stewardship plan recommendations and explain how or why the plan may differ from his recommendation. A plan is only a guide. Your objectives, forest conditions, and other factors may have changed since your plan was developed or last revised. If no plan exists, you may want to ask that one be developed along with the timber sale work.

You will need to provide the forester with an accurate map, survey, or other information so the boundaries can be clearly marked. The forester is typically responsible for generating or researching the map to mark the boundaries based on your information. An accurate survey may be needed before the sale can proceed. You want to avoid any potential problems with cutting trees on your neighbor's property that could lead to legal action. The forester should be able to explain the silvicultural method being used and how it will benefit the forest and meet your objectives. Trees in the sale area should be selected for harvest based on their individual attributes, such as species, size, products, growth potential, and other factors. Trees are individually marked with paint about

4.5 feet above the ground, as well as with a spot of paint on the stump near the ground. When the tree is harvested, the stump mark will remain and verify that the tree was selected to be cut.

Understanding Stumpage Value

The consultant forester will tally the trees that have been marked by species, diameter range, and quality. Timber is usually sold as “stumpage,” which is the price paid to the landowner for the standing trees.

Stumpage values are usually provided for the four main forest products: fuelwood, pulpwood, sawtimber, and veneer. Markets for other forest products such as posts and poles are usually more specialized and are not considered in this publication. Fuelwood and pulpwood are low value products and are usually removed to provide growing space for more desirable forest regeneration and provide some income. Markets for sawtimber and veneer are commercially available in most areas.

A common mistake made by some landowners is harvesting trees when they are too small in diameter, which results in a loss of potential value. Once trees reach the size of sawtimber their value greatly increases compared to prices paid



Figure 11. Tree properly marked.

Table 1. Diameter Range and Economic Value of Different Forest Products.

Type of Forest Product	Diameter at 4 [?] ft from ground (DBH)	Economic Value	Stumpage Value
None	1-4.9	Low	
Pulpwood/fuelwood	5-10.9	Low	\$ per cord or per ton
Pulpwood/fuelwood/ some sawtimber possible	11-14.9	Medium	\$ per cord or per ton \$ per 1,000 board feet (MBF)
Medium sawtimber	15-17.9	High	\$ per 1,000 board feet (MBF)
Large sawtimber	>18	High	\$ per 1,000 board feet (MBF)
Veneer	>18	Very High	\$ per 1,000 board feet (MBF)

for pulpwood and firewood. Also, once a tree becomes sawtimber size, allowing it to grow to a larger diameter may provide a much greater return than cutting it now. These are issues you should discuss with your forester prior to determining which trees will be harvested.

Stumpage values are expressed as the amount of money the landowner receives for the forest products harvested.

- Pulpwood and fuelwood (firewood) is valued as the \$ per ton of green wood or per cord of wood harvested. A cord of wood is a unit of measure, which is a stack of cut logs 4 ft wide by 4 ft high by 8 ft long, while the weight of green wood per ton (2,000 lbs.) is strictly a weight measure. Both can be estimated prior to harvest and/or validated after the harvest.
- Sawtimber and veneer products are valued per 1,000 board feet of timber harvested. A board foot is a standard

measure that is one-inch thick and one-foot square. After measuring the diameter of a tree in the forest at 4.5 feet from the ground (commonly known as diameter at breast height or DBH) and determining the number of 16-foot logs that can be harvested from each tree, tables are used to determine how many board feet of timber would be produced from that tree if it were cut down and sawn into boards in a sawmill.

Landowners should know that different log rules are used to measure the amount of board feet in a standing tree. A log rule is a table or formula that estimates volume, usually board feet, in logs or trees based on the diameter and height measurements. The International ¼" rule is the most accurate, while the commonly used Doyle rule tends to underestimate the amount of board foot volume in standing trees, especially smaller trees. For example, if the average diameter of harvested trees was 20 inches and each had

Table 2. Merchantable Height for International Log Rule and Doyle Log Rule.

DBH	Merchantable Height in Number of 16-foot Logs for International Log Rule and Doyle Log Rule													
	1		1.5		2		2.5		3		3.5		4	
Inches	Volume in board feet													
	Int	Doy	Int	Doy	Int	Doy	Int	Doy	Int	Doy	Int	Doy	Int	Doy
12	56	29	74	36	92	43	106	48	120	53	128	54	137	56
14	78	48	105	62	132	75	153	84	174	93	187	98	200	103
16	106	72	143	94	180	116	210	132	241	149	263	160	285	170
18	136	100	184	132	233	164	274	190	314	215	344	232	374	248
20	171	135	234	180	296	225	348	261	401	297	440	322	480	346
22	211	174	290	234	368	295	434	344	500	392	552	427	603	462
24	251	216	346	293	441	370	523	433	605	496	664	539	723	582
26	299	266	414	362	528	459	626	539	725	619	801	678	877	737
28	347	317	482	434	616	551	733	651	850	750	938	820	1027	890

1.5 logs, using the Doyle rule would result in 180 board feet of timber per tree, while the International ¼" would yield 234 board feet per tree. This is a difference of 54 board feet per tree or a 30% increase using the International ¼" rule compared to the Doyle Rule. If you are selling timber by the board foot, discuss and understand which rule is being used to measure the timber. If the timber is going to be sold using a lump sum sale, the type of rule used will usually not matter, because all buyers will be bidding on the same amount of timber, and should understand the rule differences.

Stumpage Price Reports

A common question asked by those selling timber is, "How much is the timber worth?" Some factors that affect value are unchangeable at the time of sale, such as the species, size, spacing, and quality. Other factors, such as access roads, time of year and the reputation and demands of the seller, are factors the landowner does have control over. Trees are likely to bring a good price if they are

- of valuable species that grow in that area (e.g., oaks, ash, black walnut, yellow-poplar, cherry, and loblolly pine);
- fairly large in diameter and uniform in size (trees greater than 18 inches in diameter 4½ feet from the ground); and
- relatively free from defects such as rot, branch stubs, knots, cracks, etc. (e.g., have clear lumber for at least 17 feet to the first major branch or knot).

Stumpage prices are collected in various states and regions and can provide the landowner with a general idea of what the timber may be worth in the present market and past trends in the market. Since timber usually is not a perishable product, the landowner should consider stumpage prices and their trends and

schedule sales to take advantage of this information. Most consultant foresters can assist landowners by providing a good understanding of current markets.

The Maryland Stumpage Price Report can be found on the Maryland Cooperative Extension website at www.naturalresources.umd.edu.

Pennsylvania also provides a stumpage price report that may be of value to buyers served from that state. It is available from the Maryland website above or directly at www.sfr.cas.psu.edu/TMR/TMR.htm. Landowners can also check with Cooperative Extension and state forestry agencies in other border states such as West Virginia and Virginia regarding the availability of stumpage price reports. Stumpage price reports are collected from consulting, industrial, and state agency foresters and are intended to serve ONLY AS A GUIDE in the marketing of standing timber.

A sample of a stumpage price report is provided in Table 3 to demonstrate the information usually provided. The report is usually for a 3-6 month period, depending on the state, and provides details on how the data was collected, log rule used, etc. The species or product is detailed and reported for different regions of the state because not all species occur in all regions, and the value of a species might differ between regions. Maryland is divided into four regions (Eastern Shore, southern, central, and western) but only the Eastern Shore and central region are provided in the sample. Within a region the number of timber price reports are indicated for the product, the range of the values received by landowners, and the average of all those values. It is easy to see that timber values vary widely in some cases. The actual value of a specific stand of timber may be influenced by numerous factors, including timber quality, volume to be cut, logging terrain, market demand, distance to the mill, season of the year, size of the average tree, and environmental restrictions.

Table 3. SAMPLE—Maryland-Delaware Stumpage Price Report Survey Results

January–April 2003
International ¼" log rule

Species/Product	Eastern Shore Region			Central Region		
	#	Average	Range	#	Average	Range
Red Oak	1	150	150	5	610	500-750
White Oak	1	120	120	5	330	250-500
Mixed Oaks	2	130	100-160	5	436	400-510
Oak/mixed Hardwood (high quality)	0			5	610	550-650
Ash	1	120	120	5	300	300
Cherry	0			4	613	500-750
Sugar Maple	0			3	447	410-500
Tulip Poplar	2	200	180-220	5	390	300-450
Other Hardwood	0					
Sassafras					500	500
Soft Maple				4	300	300
*Mixed Hardwood (low quality)	4	63	60-70	5	150	150
Loblolly Pine	7	288	200-359	0		
Virginia Pine	0			0		
Fuelwood (\$/cord)	0			0		
Pulpwood (\$/cord)				0		
Pulpwood (\$/ton)				2	1.75	1.50-2.00
Biomass (\$/ton)	0			0		

4) Solicit Competitive Bids on the Same Timber

The forester will prepare an invitation to bid based on the information collected that will be mailed to many potential buyers in the area.

The invitation to bid provides needed information to all potential buyers, in addition to the diameter, species, and estimated number of board feet. This includes the name of the owner and forester, location of the property, terms of the sale, a time and location when the forester will meet with interested parties to tour the sale areas, and when the bids will be opened. The owner typically reserves the right to reject all bids. A sample invitation to bid is provided in the appendix.

The forester and owner will meet at the specified time and open all the bids received. Depending on the size and quality of the sale, there may be many bids or a few. The consultant forester can provide advice on the pros and cons of selecting various bids. In some cases, the size of the sale, markets, location, or other factors may result in few or no bids. In these cases, the consultant forester may be able to contact a few buyers directly and negotiate a sale at an acceptable price, or the sale may be postponed.

The use of an invitation to bid allows the landowner to receive bids on the same timber. Landowners often receive unsolicited offers from timber buyers through the mail or personal contact; however, it is impossible to compare the financial aspects of different offers, since each buyer may be interested in different trees.

The Case for Horse Logging

Many landowners are interested in hiring a logger who uses horses to remove the logs. This method of harvesting has the following advantages: 1) horses cause

little impact on the land so extensive road systems are not needed; 2) damage to trees that are left is reduced since the logs are skid by horses; and 3) it caters to landowners seeking a nostalgic view of their woodland. Horse logging also has some limitations landowners need to be aware of: 1) upgrading and building roads that can be used for future harvest and recreational access is not usually possible; 2) horse loggers usually harvest higher quality mature timber that provides a good return, not pulpwood and other low quality material; and 3) there are few operators available so many sales are negotiated. The lack of competitive bids means you may not get as good a price for the timber and you may have to wait a long time.

5) Select a Logger and Sign a Contract

During the logger selection process, consider using a Maryland Master Logger current in his training. This voluntary training program offers instruction in forest management principles, forest ecology, proper harvest design and layout, safety practices, and lifesaving skills. In addition to the training courses, Master Loggers must attend one continuing education course on a related topic per year. This ensures that Master Loggers are up-to-date on the most recent laws and techniques in the industry. Additionally, Master Loggers understand the principles of forest stewardship and can partner with the forester in accomplishing your objectives. For more information on the Maryland Master Logger Program, visit the website of the Maryland Forests Association at www.mdforests.org.

Once you have selected a logger, sign a written contract guaranteeing the rights of all parties. All timber sales, regardless of size, should be accompanied by a written contract. There is usually some percentage

of the sale price paid at the time of the contract signing. However, the type of sale method will control how you get the rest of your money. Most timber sale contracts allow for 6 months to 2 years to harvest the timber. A sample timber sales contract can be found in Appendix C.

The method of payment agreed upon in the contract should be carefully considered, because it can have serious tax implications. There are three basic types of sale methods:

- 1) **Lump Sum Sale**—The buyer and owner agree on a price for the total sale, based on marked timber volume and value. The buyer will typically provide a significant portion of the money at the time of signing, with the owner receiving all the money before any timber is cut. This is the most common and preferred method by landowners.
- 2) **Sell by Unit**—The buyer offers a price per unit—so much per thousand board feet—which is measured at the landing or at the mill. This method assumes that all the wood harvested will go to the mill you have selected. If the logger or mill go bankrupt or have financial problems, it may be difficult to collect your money in a timely manner. There must be a high level of trust with the logger and mill to justify this method. The buyer must also understand which rule is being used to measure the volume given the large differences.
- 3) **Percentage Basis**—Provides the seller with 30 to 60 percent of the profit from sale to the mill. Like the previous method, this requires a high level of trust with the logger and mill. In general, most landowners benefit from the lump sum sale method. Because payments received in a percentage sale are normally based on the amount of

volume that actually makes it to the sawmill, utilization of harvested trees and corresponding income can be extremely variable and is highly dependent upon the ethics and professional demeanor of the harvesting contractor. However, if you are in the timber sale business, lump sum sales will prevent you from claiming that status on your taxes.

It is essential to consider the timber tax implications of the sale method used, and spreading the sale out over multiple years to reduce capital gains. But, there are other basic tax considerations that should be discussed with the forester during your initial meetings because it might affect what type of information is collected during the inventory process. These include deductible expenses, capital gains treatment, determining the basis, tax credits for boundary marking in the year of the sale, and asset depreciation. More information on the details of timber tax planning can be found in Fact Sheet 630, "Tax Planning and Estate Planning for Maryland Forest Landowners," and in Extension Bulletin 360, "Forest Management Account Book," both available from Maryland Cooperative Extension at www.naturalresources.umd.edu.

6) **Oversee the Sale**

To be successful, a timber harvest requires time and planning on the part of the forester. The forester should meet with the logger onsite before any timber is cut to assure that the location of roads, what is harvested, harvesting technique, and other details are clearly understood. The forester should visit the site on a regular basis during the harvest to make sure there are no major problems.

The operation of modern logging equipment has the potential to cause damage to the trees that are left, which can reduce their value in the future.



Figure 12. This tree has serious damage to the base caused by the skidding of logs that will reduce its future value. A forester should communicate with the logger to reduce this damage and require payment for damaged trees that were not part of the original sale.

Damage can be minimized if the forester communicates regularly with the operator. Roads must be constructed to protect water quality, and stream buffers and wetlands require best management practices (BMPs). The number and variety of agencies and regulations involved in the timber marketing process are good reasons why most forest owners should use a professional forester to assure the timber harvest is done properly. However, it is ultimately the landowner who is responsible for seeing that harvesting complies with any and all regulations.

This is why most foresters require that the logger have a performance bond that is returned only after all roads and other erosion and sediment control tasks are completed. In the event there is a problem, the bond can provide payment for tasks completed by another operator.

Forestry Best Management Practices (BMPs)

The use of forestry BMPs is required in forest harvest operations to help reduce sediment and nutrient runoff into streams and rivers. BMPs also protect sensitive areas and wildlife habitat. Your professional forester will ensure that BMPs are being practiced. After your harvest, it is important that the landowner maintain the roads and stream crossings to control possible erosion. The seeding of roads and landings with Kentucky-31 fescue is commonly done as a part of many BMPs to control erosion. However, other planting mixes have greater food and cover value for wildlife and should be considered. For example, a commercially available pasture mix is another option. You should discuss seeding options with your forester so that it is included in the logging contract. More information on wildlife plantings can be found in Fact Sheet 598, "Wildlife Management: Planting Crops for Wildlife," available from Maryland Cooperative Extension.

Forestry BMPs can be grouped into five main categories:

1. **Haul roads and skid trails**—the location, construction and use of haul roads and skid trails; maintenance of surface water drainage; and soil rutting caused by tires.
2. **Stream crossing**—the number of stream crossings, the amount of stream bank disturbance, and the maintenance of surface water drainage.

3. **Streamside management zones**—the retention of required forest buffers, the amount of disturbance in these areas, and the amount of logging debris in the stream channels.
4. **Landings and log decks**—the location of landing and log decks relative to stream channels, maintenance of surface water drainage, and the amount of litter left on the site.
5. **Soil stabilization**—surface erosion control on cut-and-fill slopes, landings, and skid trails.

The Maryland Department of Natural Resources Forest Service has a very informative website that contains more information on BMPs as well as information on the Chesapeake Bay, public lands, and wildlife and plants. Log on to the site at www.dnr.state.md.us/forests.

Where to Get Help

If you have been approached by a buyer to sell your timber or are considering the possibility of selling your timber, do not act quickly. First, call your state forester with the Department of Natural Resources Forest Service and get some general guidance. Regional DNR Forest Service offices are provided below. If you already have a relationship with a consultant forester then you are well positioned to move ahead. A full listing of state, consultant and industrial foresters is available from your state forester or local Maryland Cooperative Extension office (<http://www.agnr.umd.edu/MCE/offices.cfm>).

A full range of educational information and resources on forest stewardship (including a listing of state, consultant, and industrial foresters) can be found at the Maryland Cooperative Extension website at www.naturalresources.umd.edu.

DNR Headquarters & Regional Offices (<http://www.dnr.state.md.us/forests/phonelist.html>)

- Headquarters & Southern Region Office (Anne Arundel, Calvert, Charles, Prince George's, and St. Mary's), Tawes State Office Building, E-1, 580 Taylor Avenue, Annapolis, MD 21401, 410-260-8540, TTY 410-260-8835.
- Western Regional Office (Allegany, Frederick, Garrett, and Washington), 3 Pershing Street, Room 1011, Cumberland, MD 21502, 301-777-2137.
- Central Region Office (Baltimore, Carroll, Cecil, Harford, Howard, Montgomery, and Baltimore City), 2 S. Bond Street, Bel Air, MD 21014, 410-879-4500 ext. 4557.
- Eastern Regional Office (Caroline, Dorchester, Kent, Queen Anne, Somerset, Talbot, Wicomico, and Worcester), 201 Baptist Street, Suite 22, Salisbury, MD 21801, 410-543-6595.

Maryland Cooperative Extension— Extension Forester

18330 Keedysville Road, Keedysville, MD 21756, 301-432-2767 ext. 323.

Live in Another State?

Marketing forest products in other states follows a similar process and the information in this publication can provide guidance. However, you should contact the state forest agency and Cooperative Extension forester in your state to get more specific information. A contact for your state forester can be found on the Internet at the National Association of State Foresters website: www.stateforesters.org. Your state Cooperative Extension contact can be found locally or through the following website: www.reeusda.gov/1700/statepartners/usa.htm.

APPENDIX A

Selected Timber Management Terminology

Clearcut—a regeneration technique that removes all the trees, regardless of size, from an area in one operation. Clear-cutting is most often used with species like yellow-poplar, pine or black cherry, which require full sunlight to reproduce and grow well, or to create specific habitat for certain wildlife species. Clear-cutting produces an even-aged forest stand.

Diameter-limit cut—a timber harvesting treatment in which all trees over a specified diameter may be cut. Diameter-limit cuts often result in high-grading.

Even-aged stand—a group of trees that do not differ in age by more than 10 to 20 years or by 20 percent of the rotation age.

High-grading—a type of timber harvesting in which larger trees of commercially valuable species are removed with little regard for the quality, quantity, or distribution of trees and regeneration left on the site.

Release—removal of overtopping trees to allow understory or overtopped trees to grow in response to increased light.

Regeneration—the replacement of one forest stand by another as a result of natural seeding, sprouting, planting or other methods; also young trees that will develop into the future forest.

Regeneration method—a timber harvest designed to promote and enhance natural establishment of trees. Even-aged stands are perpetuated by three regeneration methods: seed tree, shelterwood, and clear-cutting. Uneven-aged stands are perpetuated by selecting individual or small groups of trees for removal.

Residual stand—trees remaining following any cutting operation.

Salvage cut—the removal of dead, damaged, or diseased trees with the intent of recovering maximum value prior to deterioration.

Sawlog—a log large enough to yield lumber. Usually the small end of a sawlog must be at least 6 to 8 inches in diameter for softwoods and 10 to 12 inches for hardwoods.

Seed tree method—a regeneration technique where mature trees are left standing in a harvested area to provide seed for regeneration of the cut-over site.

Selection method—a regeneration technique designed to create and perpetuate an uneven-aged forest. Trees may be removed singly or in small groups. A well-designed selection cut removes trees of lesser quality and trees in all diameter classes along with merchantable and mature high-quality sawlog trees. Should be differentiated from “select” or “selective” cuts, which often equate to high-grading.

Silviculture—the art, science, and practice of establishing, tending, and reproducing forest stands.

Silviculture treatment—altering the existing composition and structure of a stand to achieve a given management objective, such as thinning a timber stand.

Site quality—the inherent productive capacity of a specific location (site) in the forest affected by available growth factors (light, heat, water nutrients, anchorage); often expressed as tree height at a base age.

Stand—a grouping of vegetation sufficiently uniform in species composition, age, and condition to be distinguished from surrounding vegetation types and managed as a single unit.

Stumpage—the commercial value of standing trees.

Succession—the natural series of replacements of one plant community (and the associated fauna) by another over time and in the absence of disturbance.

Thinning—removal of trees to encourage growth of other selected individual trees. May be commercial or pre-commercial.

Timber-stand improvement (TSI)—a combination of intermediate treatments designed to improve growth and composition of the forest.

Understory—the smaller vegetation (shrubs, seedlings, saplings, small trees) within a forest stand that occupies the vertical zone between the overstory and the herbaceous plants of the forest floor.

Uneven-aged stand—a group of trees of a variety of ages and sizes growing together on a site.

APPENDIX B

Sample Landowner Contract

1. The Owner(s) hereby ret
with the sale of marked forest products located upon the Owner(s) property herein described and the Consultant Forester accepts such retainer upon the terms and conditions herein set forth.
2. The property that is the subject of this agree
3. The duties and responsibilities of the consulting
 - A. He shall measure
this is a scale sale he shall designate the timber in an appropriate way.
 - B. He shall solicit bids
products and shall put forth a sale proposal stating the conditions of the proposed sale.
 - C. He shall collect all
to the landowner, deducting his fees. If partial payment is made, he will withhold the appropriate proportional payment to cover his services.
 - D. He shall personally lay o
control devices.
 - E. He shall mark and ta
_____.
 - F. He shall inspect th
 - G. He shall have full a
by the purchaser, his agent or employees. His decision shall be conclusive.
 - H. He will flag the sale boundaries as necessary.
4. In consideration o
Owner(s) shall pay the Consulting Forester in the following manner: (See item 3C for method of payment)
 - A. MARKING OF TIMBER
highest bid price of the sale, whichever is greater.
 - B. SALES (Solicitation
of the timber or \$50.00/hr.
 - C. COMPLIANCE IN

The owner(s) reserves the right to reject any and or all bids received for the sale of the above timber. In the event the owners do reject all bids, the Consultant Forester will be paid at the rates stated in Items A & B not to exceed 15% of the highest bid received.
5. The terms, provis
heirs, distributees, legal representatives, successors and assigns of the respective parties.
6. The forester will rece
filing permit applications or attending any required meeting pertaining to obtaining said permits. (Stream Crossing Permits, Timber Harvesting Permits, Road Cut Permits, etc.)

IN WITNESS WHEREOF the Owner(s) and the Consulting Forester have duly signed this agreement as of the _____.

Date: _____ Owner(s) _____

Date: _____ William Hohmann

APPENDIX C

Sample Bid

The following sample invitation to bid statement is what loggers will receive and use as a guide to provide you and your forester with a price quote.

Owned by: Joe Landowner

1234 Tree Lane

Forest City, MD 22229

Marked by: Paul Professional Forester; Forests-R-Us—MD LPF #33

4444 Dirt Drive

Forest City, MD 22229

NOTICE OF INVITATION TO BID ON FOREST PRODUCTS

Forests-R-Us is offering for sale an estimated 125,000 board feet of timber and 75 cords of pulpwood/fuelwood. Trees to be sold have been marked with blue paint. The trees marked for cutting will be sold on a lump-sum basis, using the International ¼" Rule. Timber has been marked on approximately 35 acres.

Timber Description (A more detailed timber description is attached.)

Species	Estimated Volume	No. of Trees	Avg. Vol./Tree
Red Oak	21,420 BF	102	210 BF
Yellow-Poplar	47,357 BF	135	350 BF
Black Oak	10,106 BF	24	421 BF
Black Walnut	8,123 BF	50	162 BF
Black Cherry	1,671 BF	7	238 BF

The timber is located on the Landowner property at the address above. The timber will be shown on January 19, 2003 at 8 a.m. Interested buyers should meet at the Forest City Post Office. See attached map.

- Sealed bids should be sent to the address listed above. Bids should contain the lump sum amount offered for the marked timber. Bid envelopes should be marked "Bid—Landowner" and will be accepted until 4 p.m. on February 9, 2003, at which time they will be opened and read. All bidders will be notified of the results within one week. The landowner reserves the right to reject any and all bids.
- The successful bidder will be expected to sign the timber sale contract within 10 days. Full sample contracts will be available at the showing. The following payment schedule will be required:
 - 20% at the time of contract signing;
 - 30% before the beginning of operations, or by August 1, 2004, whichever comes first;
 - 50% within one week after the beginning of operations, or by October 1, 2004, whichever comes first.

A performance deposit of \$1,000 will be required.
For additional information, call 301-555-1234.

APPENDIX D

Sample Sales Contract

The following sample sales contract is a guide to the features that should be included in an agreement between a private forest owner and a party who wishes to purchase timber or fuelwood. Explanations and examples for each section are given at the end of the agreement.

This agreement is made and entered into this _____ day of _____, 2____ between (name) _____ of (address) _____ hereinafter designated the SELLER and (name) _____ of (address) _____ hereinafter designated the BUYER.

The SELLER agrees to sell and the BUYER agrees to buy the forest products described below on the following terms:

Section I. Scope of the agreement.

1. (a) Products _____

(b) Product of designation _____

2. (a) Location of sale area _____

(b) Number of acres _____

3. Payment: _____

4. _____ Harvesting dates: _____ and will expire on the _____ day of _____, 2____. Harvesting will be restricted during the following period: _____. The BUYER shall notify the SELLER or his or her agent at least _____ days in advance of the beginning of the logging operation.

5. _____ Performance bond: A form acceptable to the SELLER. The bond will be returned within 14 days following the removal of the BUYER'S equipment at the satisfactory completion of the operation.

6. _____ BUYER and SELLER shall act as the seller's agent and shall have the full authority of the SELLER to take any action contemplated by the Agreement, except as follows: _____

7. _____ Declaration of ownership: The SELLER warrants that

(a) _____ He or she has the full legal right to sell the

(b) _____ There are no mortgages or liens on the property, except as may be listed on a separate sheet attached to this agreement.

(c) _____ The title of the marked trees is clear and free of all claims, liens, or encumbrances, nothing to jeopardize the rights of the BUYER to said marked or designated trees.

(d) _____ Property lines necessary for this sale are clearly and accurately shown on the map attached to this agreement.

8. Special considerations: _____

Section II. Harvesting considerations.

1. designated in this contract. The BUYER has th
2. are cut or damaged, the BUYER shall be liable for a penalty three times the value of each tree. The BUYER is not liable for damage that is customary in the harvesting of timber, fuelwood, and pulpwood. In the event of a discrepancy, a three-person team, including a person selected by the BUYER, a person selected by the SELLER and a third person agreed to by both parties, will settle the dispute. Only those trees t
3. her agents to the roads, gates, fences or other improvements on the property of the SELLER or any other landowners affected by this operation. The BUYER agrees to
4. Slash shall be removed completely from roads and trails and 50 feet from public roads. All slash shall be lopped to within _____ feet of the ground. Unless otherwise m
5. are present in the tree. In such cases, the BUYER will cut as low to the defect as possible. Stumps shall be cut

Section III. Erosion and sediment control.

1. Title 4, Subtitle 1 of the Environment Article of the Annotated Code of Maryland. Before harvest activities begin, the BUYER will file a Standard Erosion and Sediment Control Plan for Forest Harvest Operations (SESCP) and gain approval for this plan from the county Soil Conservation District. The BUYER shall
2. before the operation begins. The BUYER shall leave all roads in proper repair (as approved by the SELLER) at the completion of logging. The location of all m
3. to an area in the course of logging, skidding, loading or trucking, the SELLER reserves the right to suspend operations until more favorable conditions prevail. SELLER-designated shutdown time will be added to the life of this agreement if such a request is made, in writing, by the BUYER before the expiration of this Agreement. When, in the opera
4. SELLER and in accordance with the SESCO both during and at the completion of the operation. Such activity may include back-dragging (smoothing out the road to eliminate ruts and get property grade), waterbar construction, seeding, mulching, or the installation of silt fencing. However, the SELLER has final responsibility for meeting requirements of the SESCO. The BUYER will be r

Section IV. Liability.

1. for personal injuries or property damages incurred by the BUYER, his or her employees or associates or by any third parties resulting in any way from the BUYER's operations under this agreement. The BUYER agrees to abide by all applicable federal, state, and local laws and regulations. The BUYER hereby
2. workman's compensation insurance in connection with all operations under this contract and shall, upon request by the SELLER, provide evidence of said insurance. The BUYER and an
3. enforce upon subcontractors all applicable provisions in this agreement. The SELLER reserve
4. suppression activity immediately on any fires that may occur on or adjacent to the sale area. The BUYER shall be liable for any claims arising from forest fires attributable to the BUYER's operation while it is in progress. The BUYER agrees

Section V. Permits and violations.

1. any government agency in order to conduct the operation. The BUYER/SELLER
2. this agreement or the completion of the operation, whichever occurs first. The BUYER will rem
3. removed. Estimates of the volume provided by the SELLER are provided as a service to assist the BUYER in evaluating the proposed sale. The degree of utilization of the timber by the BUYER may produce a difference between actual volumes and estimated volumes. The SELLER makes no
4. parties hereto. This agreement sha

IN WITNESS THEREOF, the parties have set their hands on this _____ day of _____, 2_____

SELLER _____

SELLER'S AGENT _____

BUYER _____

WITNESS _____

Explanation of Sample Sales Contract

Section I

1. **(a) Product** products to be sold. This list should be followed by a statement of the type of log rule used to determine the volumes. (The accepted log rule in Maryland is the International ¼-inch.) The list for lump-sum sales usually includes a total estimated volume and the log rule used. The breakdown of total estimated volume by tree species, product designation (veneer, sawtimber, or cordwood), and price per cord or thousand board feet may be included in unit-price sales.
(b) Product designation. In this section note how the buyer can identify trees designated for removal.
2. **Location** an accurate description of where the property with the products being sold can be found. It is best to walk the boundaries with the buyer before harvesting to make sure both parties agree on the location.
3. **Payment** when payments are made depends on the type of sale. Sales are usually lump sum or unit price. Lump sum is the preferred method because all financial arrangements are handled before harvesting. Payments for a lump-sum sale are received before any trees are removed.
4. **Harvesting dates** should specify the dates harvesting will begin and end. Circumstances may require detailing times or dates during which harvesting may not take place.
5. **Performance bond** idea to require a performance deposit to ensure compliance with the terms of the agreement. The logger purchases this bond from the insurance company for a small percentage of the face value. The bond is held in escrow and returned to the buyer after logging is completed and a final inspection made. The standard bond is usually 10 percent of the total sale price, but there are many instances in which this amount would not be necessary and a 5 percent bond would be adequate. The minimum bond is usually \$500.
6. **Seller's agent** may employ a professional forester to handle the sale of his or her forest products. Anyone the seller relies on to represent his or her interests is designated as the seller's agent. It is essential to have a separate written contract with the agent that spells out duties, responsibilities, commissions, and other important items.
7. **Special considerations** the sale that is not spelled out elsewhere in the agreement should be itemized here.

Section II

2. **Cutting penalties**
should be assessed for cutting undesignated trees. This amount should be high enough so that it would be impossible to cut undesignated trees, pay the fine, and still make a profit. Maryland law specifies a rate of three times the value of the tree for cutting undesignated trees; however, a higher amount per tree can be specified in the contract. Some trees not specifically marked for cutting will have to be cut for skid trail placement or the safety of the cutter when felling larger trees. This penalty clause should not be interpreted to penalize the cutter in those instances; it is intended to safeguard the trees that should be left to form the next crop.
5. **Stumps** should be cut as low to the ground as possible, but it should be realized that circumstances could prohibit a logger from cutting them very low without severe damage to his equipment.

Section III

1. **Erosion and sediment control responsibility**
Before the start of any Maryland forest harvest operation that disturbs more than 5,000 square feet, a SESCO must be filed and approved by the county Soil Conservation District office. The requirements for culverts, buffer strips and other erosion and sediment control structures are specified, as are other restrictions that may apply. There are special restrictions on harvest sites located in the Critical Area (within 1,000 feet of the Chesapeake Bay and its tributaries), as well as in wetland areas.

3. **Hazardous ground conditions**
ground conditions warrant shutting down an operation. Heavy rains or an unexpected late-winter thaw may cause excessive mud. Often, a shutdown is necessary to avoid excessive erosion or rutting. This shutdown is not intended to penalize the buyer, and an extension of the agreement is warranted if additional time is needed.

Section IV

Proper insurance coverage is essential, and it is a good idea to obtain written proof of the buyer's insurance coverage.

Section V

Many regulations apply to timber harvesting, and the process can change from one county to the next. One individual, buyer or seller should be designated responsible for conducting the operation in accordance with all laws and ordinances, for obtaining all necessary permits or licenses, and for posting any necessary bonds.

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