

Business Management



Managing Your Own Timber Sale: Guidelines for Success

Getting started



Business and legal
considerations

Finding out what
you have to sell



Getting your
timber from stump
to mill

Getting help



Entering
the marketplace



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Owners of nonindustrial, private forestland often describe timber sales as the most significant activities conducted on their properties. Indeed, timber sales commonly occupy hundreds of hours of time, often involve hundreds of thousands of dollars, and can change the character of the forest property for decades.

Although they generally occur infrequently and for relatively short time periods, timber sales offer important opportunities to achieve ownership and management goals. There are few more important times in the management of your forest when you have the chance to do well for both biological and economic reasons.

If carefully planned and implemented, timber sales are both personally and financially rewarding. Poorly planned and/or conducted sales can be frustrating and possibly outright disasters. This publication will help you plan and conduct a successful, rewarding timber sale.

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Although a timber sale has many steps (see Figure 1), when taken as logical pieces, the whole process becomes quite manageable. All significant woodland activities, including timber sales, require planning. Thus, the first two sections of this publication cover “Getting Started” and “Finding Out What You Have To Sell.” They answer such questions as:

- Why harvest timber?
- What is involved in presale layout?
- What is a timber cruise?

The third section addresses “Business and Legal Considerations” pertaining to timber sales. Taxes, legal and regulatory obligations, and contracts are critically important in all phases of the timber sale. Planning, implementation, and followup are discussed.

While still part of the sale preparation, “Entering the Marketplace” describes how to seek offers when selling timber and how to evaluate those offers.

“Getting Your Timber from Stump to Mill” will help you to set reasonable expectations for your timber sale and to find and select a logger. It discusses logging systems and their costs, logging contracts, administration of timber sale contracts, and how to monitor the sale’s progress.

Finally, many landowners seek professional help for some or all phases of their timber sales. “Getting Help: Hiring a Consulting Forester” describes how to find and evaluate a professional consulting forester.

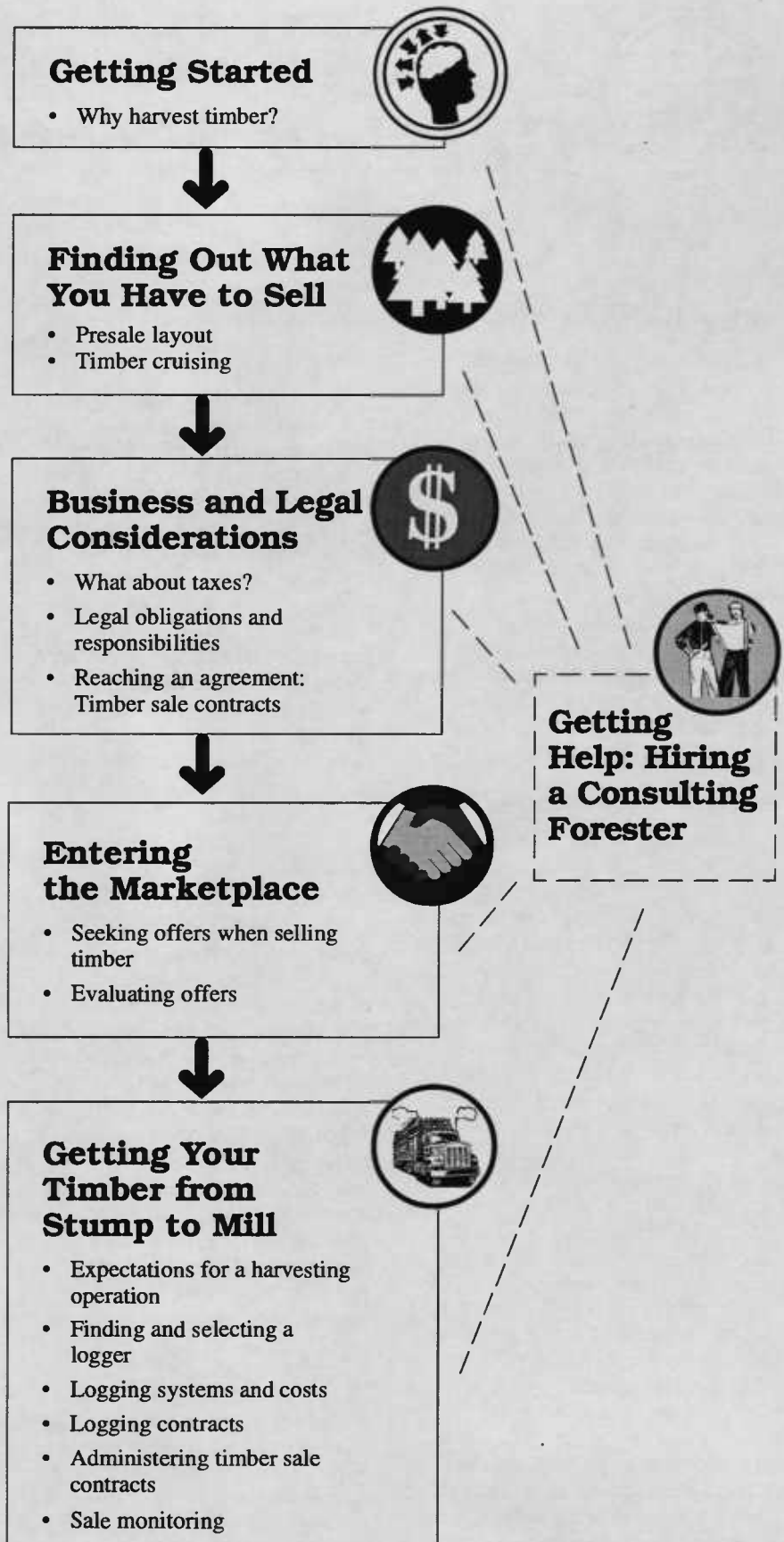


Figure 1.—Steps in preparing and conducting a timber sale.



Getting Started

Why harvest timber?

There are many reasons to harvest timber. Well-designed timber harvests help you achieve both short- and long-term management, silvicultural, and financial objectives. As you define your woodland ownership and management objectives and clarify the “what, where, when, and why” activities, you’ll find that timber sales are important tools in accomplishing the activities necessary for reaching your objective(s). Skillfully conducted sales help promote healthy forests, enhance wildlife habitat, improve access, and enrich other features of your property.

Silvicultural objectives

Knowing how you want to manage your woodland and what you want it to look like over time is important for designing a silvicultural management strategy. The strategy you choose should fit your objectives, the site, and stand conditions.

There are two primary silvicultural methods of managing forests: those that produce even-aged stands and those that produce uneven-aged stands (three or more age classes).

Over time, even-aged methods produce stands whose trees are about the same age and form one canopy layer. Even-aged stands are created by harvesting all or most of the trees (clearcutting). Selected trees can be reserved to provide shelter, wildlife habitat, seed for natural regeneration, and aesthetic enhancement. These sites then are planted, tended (thinned), and harvested again.

Managing for several age classes of trees in the same stand is called uneven-aged management. Periodically, individual trees (individual tree selection) or small groups (group selection) are removed, creating

openings in the forest canopy and providing opportunity for young trees to re-establish.

By periodically removing trees in this fashion, you can create a forest with several age classes in several canopy layers. Uneven-aged silviculture maintains a continuous canopy and has a high aesthetic appeal.

To be sure about which silvicultural strategy may best fit your situation, get advice from a consulting forester or an Oregon Department of Forestry (ODF) Service Forester, or attend one or more Extension Forestry workshops. Whatever strategy you choose, carefully planned timber harvests are the primary means for accomplishing your silvicultural objectives.

Financial objectives

Landowners often have both short- and long-term financial goals. Purchasing and managing forestland may involve harvesting some timber immediately to pay off the initial purchase cost and to pay annual management expenses and taxes.

Timber harvests can be used to meet other financial obligations such as sending children to college, paying for a trip, or paying estate taxes or other large debts. Conducting periodic thinnings or a series of “light” timber stand improvement harvests can provide periodic income both now and later to supplement fixed incomes. For many woodland owners, a tree farm can be a major source of retirement income.

Timber harvesting can play a crucial role in estate planning. Given recent increases in timber values, many woodland estates have increased substantially in value. When combined with other estate planning techniques such as gifting, properly timed and conducted timber sales may

offer ways to ease ownership transition and possibly reduce estate taxes. Consult an estate planning specialist when making these important decisions.

Timing the harvest, from the financial perspective, is important. This subject is covered more completely in Oregon State University (OSU) Extension Circular (EC) 1442, *Financial Considerations in Deciding When to Harvest Timber*.

Forest health

Timber harvest also can promote and sustain a healthy forest by reducing the threat of insects, disease, and catastrophic fire. Most insect problems and some diseases can be avoided, and sometimes remedied, by carefully planned and conducted timber harvests.

Bark beetles and defoliating insects are the most prevalent current problems, particularly in eastern Oregon. Bark beetles frequently attack trees under stress from competition. Frequent but light harvests, such as thinnings, reduce competition and improve vigor of remaining trees, making them less susceptible to bark beetle attack.

Salvage harvests of trees that have died or are severely affected by insects or disease often represent substantial value. Moreover, salvage harvests reduce live and dead fuel on your woodland, thereby reducing the potential for catastrophic wildfire. These two types of harvests sometimes are done in one sale, combining commercial thinning (proactive management) with a salvage operation (a reactive practice).

Nontimber objectives

Landowners often own forestland for reasons other than growing timber for income. Aesthetics, wildlife, watershed, personal, and/or other noncommodity values all are important.

Properly planned timber harvests can improve both how your woodland looks and the habitat available for certain wildlife. For example, you can create open areas that enhance browse for deer, elk, or nongame species by carefully planned and conducted timber harvests. You can leave snags for birds and small mammals that depend on dead trees. Timbered edges and thermal cover are important for big game habitat.

If you have a grazing operation or lease your property for grazing, you can use timber harvests to promote the growth of understory forage plants and grasses. Timely and periodic thinnings reduce competition between trees and grasses and promote good forage production while simultaneously maintaining healthy, vigorous trees.

Timber harvests also provide opportunities for further development of your property. Most landowners do not own the heavy equipment required for road construction. When developing timber harvesting plans, you can require the logging contractor to construct roads and skid trails, install culverts, surface roads, create fire breaks, or do other construction activities that you cannot do alone.

Remember, the contractor must be compensated for these improvements. Contractors often can be paid from timber harvest receipts. Be sure to negotiate the costs of these activities *before* timber harvesting begins.

Regardless of your reason for harvesting timber, the first step is to find out what you have to sell by completing the “presale layout” and obtaining a timber cruise. These topics are discussed in the following section.

SUMMARY



Getting Started

- Identify your short- and long-term objectives *before* starting the timber sale.
- Evaluate your silvicultural, financial, forest health, and nontimber objectives. What do you want this timber sale to achieve?
- The timber sale strategy should fit your objectives, the site, and stand conditions.



Finding Out What You Have to Sell

Presale layout

Laying out a timber sale can be one of your most rewarding woodland experiences. The job requires technical knowledge, creativity, and considerable time walking through the property—all things that most landowners enjoy greatly. The timber sale will change the look and character of the forest for decades to come, so it must be done with great care.

Collecting the right information

Before heading to the woods to lay out the timber sale, obtain maps showing soil and vegetation types, roads, streams, property lines, elevation contour lines, and other features. You also should have a set of the most recent aerial photographs available for your property.

Aerial photos come in color or black and white. A “stereo” pair of color photos usually is preferred because it provides a three-dimensional view of the area. This allows easier differentiation of vegetation types and topographic features. The checklist on page 7 highlights the array of maps and photos and offers possible sources.

The other principal information source to consult before going to the woods is your own management plan. The plan helps put the timber sale into the perspective of managing the entire forest property.

Many landowners already have plans that include the necessary maps and photos. If you do not have a plan, stop now, and consider preparing one before proceeding with the timber sale. For help in developing a forest management plan, see EC 1125, *Management Planning for Woodland Owners: Why and How*, and EC 1126, *Management Planning for Woodland Owners: An Example*.

“On-the-ground” aspects

The first field task is to locate the general timber sale boundaries. Don’t be preoccupied with exact locations now. Instead, identify logical control points such as ridge tops, roads, fencelines, or vegetation changes. Mark temporary boundaries with plastic flagging that can be moved easily if decisions change. Later, you can more clearly mark the flagged boundaries with paint and/or signs.

At this point, it is particularly important to consider and mark areas of nonharvest or special consideration such as springs, streams, unstable slopes, wildlife habitats, or visual buffers. Once harvesting begins, major problems can occur if areas that have not been clearly marked are treated by an unsuspecting contractor.

Discuss particularly sensitive habitat or riparian areas with the ODF Forest Practices Foresters who administer the Oregon Forest Practices Act (FPA) in your area. Contact them through the local ODF office. EC 1194, *Oregon’s Forest Practice Rules*, is an excellent overview of the law and its requirements.

Roads and access also are important considerations. Ensure that legal access exists from the timber sale area to the nearest public highway. Some public highways also have weight or other transportation restrictions, so it is wise to check the route all the way to the mill.

If another owner’s property will be crossed during log hauling, you may need an easement or other written road-use agreement. Oregon law requires that timber owners be granted access to their property, so you eventually can obtain access, but it may take patience and involve some expense in road-use fees and tolls.

Money spent on road engineering or gravel initially may seem extravagant, but may prove cost-effective over time. Roads on the timber sale

area and other access roads are, of course, developed to service the timber sale. They may, however, provide important post-sale access for future management activities.

Primary considerations include width, maximum grade, curve radius, and whether the road will be rocked. Stream crossings and culvert locations also must be determined. To learn more about road needs, see EC 1118, *Planning Woodland Roads*. A consulting forest engineer also can help with these activities.

The engineer also can help develop a logging plan for the proposed timber sale. This will include type of logging system needed (e.g., dozer, skidder, cable, horse, etc.) and maximum feasible yarding distances. Locations of landings and skid trails then can be marked on the ground and on a map.

You may want an overview of the harvesting process that will occur on your property before talking to loggers, forest engineers, or consulting foresters. EC 956, *Logging Woodland Properties*, is a short, easily read overview.

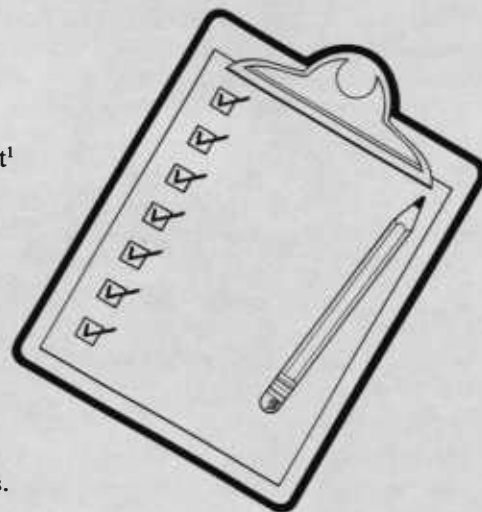
Marking timber to be cut is both rewarding and challenging. For a clearcut, this involves designating the harvest area boundaries and then, within the sale area, marking any trees to be retained.

For partial cuts, the tree-marking procedure is somewhat more involved. Foresters translate their goals for the sale into a set of tree-marking guidelines that specify when a tree will be marked for removal or retention. For example, “mark a tree for removal if it will release at least three smaller potential crop trees,” or “remove all trees infested with dwarf mistletoe.”

A critical consideration when marking trees is how they can be removed during the logging operation. If logging feasibility is a question, now is the time to get professional

Maps and photos useful in timber sale planning and layout

Document	Possible source(s)*
<input type="checkbox"/> Topographic map	United States Geological Survey ¹ Sporting goods, outdoor, or marine supply stores
<input type="checkbox"/> Soil map	Natural Resources Conservation Service ²
<input type="checkbox"/> Property boundary survey record	County surveyor
<input type="checkbox"/> Stream map	Oregon Department of Forestry office
<input type="checkbox"/> Vegetation map	Pacific Meridian Resources ³ Atterbury Consultants, Inc. ⁶
<input type="checkbox"/> Aerial photo	U.S. Forest Service ² Farm Service Agency ² Bureau of Land Management ¹ U.S. Geological Survey ⁵ Western Aerial Corporation ⁴ Private vendors Timber companies Neighboring landowners



*Offered as examples of possible sources *only*. No endorsement is intended or made by the OSU Extension Service.

¹ U.S. Department of Interior

² U.S. Department of Agriculture

³ Private company that prepares vegetation type maps on a custom order basis. Located at 421 SW 6th, Portland, OR 97204

⁴ Western Aerial Corporation, 520 Conger, Eugene, OR 97402

⁵ U.S. Geological Survey, EROS Data Center, phone 605-594-6511

⁶ Atterbury Consultants, Inc., 3800 SW Cedar Hills Blvd., Suite 280, Beaverton, OR 97005

advice. For a better understanding of the key elements in moving logs out of the woods and to the mill, see EC 1140, *Hauling Logs from Woodland Properties*.

Use only paint especially designed for marking trees, available from most saw shops and timber supply companies. You can use any color of paint, as long as it can be seen easily from at least 50 feet away. Apply paint marks to both the lower bole and below stump height so that marked trees can be identified after harvest. *Make sure the paint color actually used is the same color specified in the timber sale contract.*

Fire control during and after the harvest operation is of prime importance. Identify sources of water available for fire control. During periods of greater fire danger, good access to the sale area is vital. If fire danger is high, it also may be wise to establish fire breaks with a dozer or other equipment.

Landowners have legal obligations under Oregon law and ODF requirements to control fire hazards both during and after operations on their properties. This subject is discussed further in the "Legal obligations and responsibilities" section.

Where applicable, other necessary presale considerations include notifying neighboring landowners, marking gates and fences, identifying utility lines both above and below ground, and signing roads to warn others of the logging operation. Be sure of exact property line and boundary corner locations. If the sale area includes either, be sure they are accurately surveyed and clearly marked on the ground.

The final step in presale layout is preparing a sale area map. The map may be hand sketched or prepared professionally. Larger, more complex jobs usually require more detailed maps. Make sure the map includes information necessary for others

involved with the sale to do their jobs efficiently.

Timber cruising

What is a timber cruise?

A timber cruise is an activity that estimates the merchantable wood volume in standing trees and assesses the quality of logs that can be cut from those trees. The timber volume and quality information collected during a cruise is used to estimate the timber's value.

Since this value estimate is fundamental to planning a timber sale and is used to negotiate log prices, a cruise should be one of the first presale steps. Although you are not likely to do your own cruise, it is important that you know the right questions to ask and request the right kind of cruise.

Why do a timber cruise?

When differentiated by species, diameter class, and grade, timber volume and quality estimates from the cruise have many uses:

- Volume estimates help you decide if you have sufficient timber to justify a sale, and if you do, how much to harvest.
- The volume-by-species data help you design a harvest that meets silvicultural objectives, such as promoting desired species composition.
- Volume and quality estimates are useful marketing tools and help reduce uncertainty between the timber buyer and seller.
- Quality information can help you decide where to sell your timber. For example, you might sell high-quality and low-quality logs to different mills.
- The cruise generates information for evaluating sale bids and purchase offers, assessing logging conditions, and assisting in tax and business planning.
- You also might want to obtain other data such as hauling distances and market areas.

Important terms

Merchantable timber volume typically is measured in board feet. This volume is based on diameter at breast height (dbh) and height to a merchantable top diameter. This top diameter is where the tree bole tapers to a minimum specified diameter, usually 4 to 6 inches. Because timber volumes commonly are high, they often are quoted in thousands of board feet and abbreviated as “MBF.” Other units of measure include cubic feet and weight (generally tons).

Log rules are rules for estimating board foot volume in standing trees. Different regions use different log rules. Oregon uses the Scribner log rule on the westside and the Scribner “short log” log rule on the eastside. (See the “Selling by grade” section for more information.)

The volume you estimate in a tree using a log rule may differ from the actual volume of boards cut from that tree. Overrun occurs when the volume

of cut boards exceeds the estimated log rule volume. Underrun occurs when the cut board volume is less than the estimated log rule volume. These differences occur primarily because mill technology has changed significantly since the log rules were established and because of the uncertainties surrounding volume loss from defect in the log.

There are two volume categories. *Gross volume* is the total volume in a standing tree based on its dbh and height to a merchantable top diameter. *Net volume* is determined by reducing the gross volume by any defect that occurs.

Defect is that portion of the tree or log that can't be manufactured into a product. Defect includes decay, breakage and mechanical damage, forks in trees where trunks split to form double tops, and curve in a log (also known as “sweep”). Sellers are paid for the amount of net log volume delivered to the mill, usually determined by an independent third party such as a log scaling bureau.

A tree is considered *unmerchantable* if it has more than 66 $\frac{2}{3}$ percent defect. It's important to recognize that merchantability also depends on local market conditions and product specifications. Therefore, check with local timber buyers before deciding which trees are unmerchantable.

Log grade is a way of describing the quality of wood product that can be cut from a particular tree. Hence, log grade relates directly to value; log value increases as log grade improves. Correctly grading a standing tree requires considerable experience because grade depends on things such as log diameter; log length; and the size, number, and location of knots. For a more complete discussion of these terms, see EC 1127, *Measuring Timber Products Harvested from Your Woodland*.

What's in a timber cruise report?

A cruise report should contain some, preferably all, of the following information:

- Legal description of the property where the timber sale is located
- A map of the timber sale area showing roads, streams, and topographic features
- Number of acres in the sale area
- Gross and net merchantable volume for the total sale and per acre, by species, diameter class, and log grade
- Average log volume

Timber cruise intensity

In most timber cruises, only a sample of the trees in the sale area is measured. Total merchantable volume per acre then is estimated from this sample. Cruise intensity, or how many trees actually must be measured to accurately estimate volume, is based on several factors:

- *Stand variability.* If most of the trees are generally similar in diameter, height, and species, consider using a less intensive cruise, i.e., measuring fewer trees. Stands with several species of different diameters and heights require measuring more trees, i.e., a more intensive cruise.
- *Type of sale.* If you plan to conduct a lump-sum sale, consider using a more intensive cruise. (See the “Reaching an agreement: Timber sale contracts” section for a more complete discussion.)
- *Standing timber value.* If your preliminary evaluation suggests that the standing timber is of relatively high value, consider using a more intensive cruise, perhaps even a 100 percent cruise (i.e., measure every tree).

Remember, the more information you need, the more intensive the cruise and the more it will cost.

Who should do a timber cruise?

Good timber cruising requires skills that take a long time to acquire. Unless you have the skill and experience, leave cruising to an experienced consulting forester and/or timber cruiser. It often is advisable to use a cruiser known to your prospective log buyers. This may add credibility to the cruise results and avoid buyers' potential reluctance to accept results from, for example, "someone unfamiliar with our type of timber. . . ."

Early in the sale-planning process, several business and legal considerations merit your attention. Timber sales bring tax implications. You are responsible for complying with numerous laws and regulations. And, you'll want your sale to be based on a well-written contract. These elements are discussed in the next section.

SUMMARY



Finding Out What You Have to Sell

- Two key steps exist: presale layout and timber cruising.
- Prepare a preliminary map and plan *before* heading to the woods for the "on-the-ground" presale layout.
- A timber cruise can generate important information if you ask the right questions when arranging for one.
- The intensity of your timber cruise will vary with your stand's uniformity, type of sale, and relative value of standing timber.



Business and Legal Considerations

What about taxes?¹

Oregon taxes

Experienced nonindustrial, private forestland (NIPF) owners know that taxes are critically important when planning and conducting timber sales. When selling timber, you must consider the effects of both Oregon and federal taxes.

As a result of the sale, you may owe both privilege (formerly known as severance) and harvest taxes on the qualifying volume of timber sold. Both taxes apply to all locations in Oregon *except* for western Oregon NIPF owners under the Western Oregon Small Tract Optional Tax (WOSTOT) program. As a result of sales, owners under WOSTOT pay only the harvest tax since their forest property taxes and privilege taxes are paid annually in one WOSTOT "unit" based on their forestland's productivity.

The privilege and harvest tax programs are administered by the Oregon Department of Revenue (DOR), to whom the taxes are paid annually. Taxes are due January 31 for harvests in the previous calendar year. Some owners may owe quarterly estimates if they anticipate harvesting sufficiently large volumes of timber during the year. A more complete discussion of Oregon forest tax programs is found in EC 1151, *Taxes and Assessments on Oregon Forest Land and Timber*.

¹This is only an overview of taxes pertaining to timber sales. For a more comprehensive treatment of NIPF taxes, refer to the *Forest Owners' Guide to the Federal Income Tax*, Agricultural Handbook 708.

²631(b) and 631(a) refer to the Internal Revenue Code sections containing the rules governing tax treatment of these types of timber sales.

Federal taxes

You must pay federal income tax on timber sale income. Depending on the type of sale, the Internal Revenue Service (IRS) classifies the income as either *ordinary* or *capital gain* income.

Capital gain treatment often is advantageous since the tax rate on capital gain income can be lower than the tax rate on ordinary income. However, even when the tax rate on ordinary income is below the capital gain rate, capital gain treatment still may be advantageous since no self-employment tax is paid on capital gain income.

The IRS recognizes three kinds of timber sales that qualify for capital gain treatment: (1) lump-sum, (2) scale-out, and (3) certain log sales. Lump-sum and scale-out sales pertain to selling standing timber (stumpage). Log sales refer to selling timber that has been felled and bucked into logs.

In *lump-sum* sales, a fixed total dollar amount for the entire sale is agreed on in advance of the harvest. In *scale-out* (also called *point-of-measure*, *631(b)²*, *pay-as-cut*, and *recovery* sales), payments are based on the measured (scaled after cut) or estimated (cruised before cut) volume for an agreed-upon price per volume unit, usually MBF or tons.

While both sale types qualify for capital gain treatment, correctly handled scale-out sales are considered the best way to *absolutely* ensure it, especially when frequent lump-sum sales are made over a number of years.

Log sales, when accompanied by a 631(a)² tax election, permit you to sell cut logs and to have much of the income treated as capital gain income. Because of how the gain must be calculated, a portion *always* is classified as ordinary income.

To achieve capital gain status for income from a log sale, you must file a written 631(a) election with an original federal income tax return for the year of sale. You need to make the election only once. However, once made, it is binding for all log sales from all of your properties, henceforth into the future. You may, of course, still make stumpage sales; but, with a valid 631(a) election in effect, all future log sales must follow 631(a) tax calculation procedures.

Getting help

Many people in Oregon can provide help with forestry taxation. For help with Oregon forest taxes, talk with your county tax office, the ODF Service Forester, or a DOR timber tax representative. Consult the telephone book for local names and numbers.

Since Oregon licenses its income tax professionals, a large network of licensed tax preparers exists. Talk to other NIPF owners, call your local OSU Extension Service office, and consult the telephone yellow pages to begin getting names.

Be aware that taxation is a diverse field and that not all tax professionals have forestry experience. Ask tax people for references and about their experience with your type of situation. Then, contact those references to ask about their experience with the tax person.

Taxes are not the only business and legal dimensions when planning a timber sale. As discussed in the following section, numerous federal, state, county, and local laws, regulations, and ordinances may affect how the sale can be conducted.

Legal obligations and responsibilities

When selling timber, you have many regulatory obligations. It is impossible to describe all of them here. Some regulations are federal, but most are state. County and city regulations are fewer and are not covered here.

Sometimes it is possible to pass the responsibility for certain regulations on to the harvesting contractor;

however, most regulations hold the landowner either solely or jointly responsible for what occurs on the property. A condition not meeting the rules can be the basis for a violation regardless of the landowner's knowledge of the rules and/or intentions.

Protect yourself and your contractor(s). Punitive actions for not meeting regulations may include criminal prosecution or civil judgments for restoration, including liens on the property, fines and

penalties, stop-work actions, and warning citations.

Some general categories of obligations are highlighted in Table 1 and briefly discussed below. Both are intended as introductory only. You may want professional help in planning to meet regulations and in contract administration to ensure regulatory compliance. Consider regulations when planning, as they affect both how the harvest operation is conducted and its cost.

Table 1.—*Landowner obligations and responsibilities during harvesting.*

Category	Relevant agencies and information sources	Pertinent activities and/or issues
Oregon Forest Practices Act	Oregon Dept. of Forestry Oregon Dept. of Environmental Quality Oregon Dept. of Fish and Wildlife	Timber harvest Road construction and maintenance Reforestation activities Operations near streams Threatened and endangered species Use of chemicals Fish and wildlife protection
Endangered Species Act	Oregon Dept. of Forestry U.S. Fish and Wildlife Service	Habitat management Threatened and endangered species
Employment requirements	Oregon Employment Division	Workers' compensation insurance Equal employment opportunities Wage and hour requirements Payroll tax withholding
Fire regulations	Oregon Dept. of Forestry	Fire equipment operations restrictions Fire seasons Slash disposal and liability Fire prevention/suppression requirements
Transportation requirements	Oregon Dept. of Transportation Oregon State Police Oregon Highway Division County engineer Local truckers	Road access Hauling restrictions Road construction Road activities near streams and wetlands
Log accountability	Oregon Dept. of Forestry	Log branding Log load tickets
Chemicals, waste disposal, and hazardous materials	Oregon Dept. of Forestry Oregon Dept. of Agriculture Oregon Dept. of Forestry Oregon Dept. of Environmental Quality	Use of chemicals Chemical application licensing Waste disposal during harvesting Hazardous material requirements (diesel, gasoline, other petroleum products) Notification of hazardous material spills
Boundary determination	County surveyor Registered land surveyor	Property boundary location and marking Timber trespass Property ownership questions

Oregon Forest Practices Act (FPA)

The FPA became effective in 1972 and has evolved into a comprehensive set of regulations governing most aspects of timber sales and management of private forestlands. Beyond the current timber sale, the FPA prescribes continuing responsibilities for certain activities, e.g., road maintenance and reforestation. The FPA is enforced by on-site inspections during or after the operation. OSU Extension Service publications provide an introduction, but you should become familiar with the FPA through materials available at ODF offices.

Because many FPA provisions influence harvest planning, interact early with the ODF Forest Practices Forester(s). Establish rapport and demonstrate your desire to meet your legal obligations. It will pay dividends when, early in the timber sale process, you return to the ODF office to file for a "Permit to Operate Power Driven Equipment," done in conjunction with the "Notification of Operations Permit."

Numerous state regulations also reference the FPA as the basis for meeting requirements for other agencies, e.g., Oregon Department of Environmental Quality and Oregon Department of Fish and Wildlife. Thus, ODF may need to consult with other agencies about the forest practices you intend to conduct. You should be present at such meetings and seek independent professional expertise if issues and questions are substantial. A discussion of some, but not all, of the issues that may arise follows.

Finally, remember that the FPA is subject to update and change; keep current on its provisions and requirements. EC 1194, *Oregon's Forest Practices Rules*, is an excellent overview of the current law and its requirements.

Endangered Species Act

The listing of certain species of fish and wildlife under the federal Endangered Species Act (ESA) has complicated forest operations because rules and regulations continue to evolve on a species-by-species basis. Attempts are underway to specify regulations covering large

"landscape" areas or "watershed" areas for wildlife or fish. The large-area regulations would include public and private owners under some regulatory authority for maintaining habitats.

Precisely how to make forest operations comply with the ESA still is unclear. Landowners with properties where endangered species are likely to be found are wise to seek knowledgeable professional help.

Employment requirements

Individuals and firms that employ workers face many employment-related regulations. Separate agencies often are responsible for administering different regulations. Landowners hiring workers must know the employers' responsibilities and should consult the agencies directly.

Most landowners work with harvesting contractors who have employees. If you do, be sure to verify that the contractor(s) are "independent contractor(s)" in the legal sense. Otherwise, from the legal perspective, the contractor's employees may be considered as belonging to you, and you could be liable for tax withholding, Workers' Compensation Insurance, and other obligations on a back payment basis. It's essential to include a clause in the harvesting contract requiring the contractor to provide evidence of Workers' Compensation Insurance, other insurance requirements, and independent contractor status.

Fire regulations

Landowners have major responsibilities for preventing and containing fires originating on their properties. You can be held responsible for fire suppression costs and damages from fires that start on your properties and spread to adjacent lands.

State regulations regarding fire equipment and closures during the fire season provide a starting point for requirements during the harvest operation. In addition, you should become familiar with the slash liability resulting from harvest operations and the required post-harvest slash disposal.

The harvesting contract should include clauses that require the contractor to take the necessary precautions. A follow-up inspection

should be done to monitor compliance. Contract coverage should comply with ODF fire regulations including such protective measures as spark arrestors, sources of ignition, fire watchers, and fire suppression needs such as water sources, tools, and trained fire fighters.

To learn more about your potential fire-related liability and ways to insure against that liability, contact the Oregon Small Woodland Association (3415 Commercial St. S., Box 3079, Salem, OR 97302-0079, phone: 503-588-1813).

Transportation requirements

Several regulations govern the transportation of products from forest properties. Road construction operations that cross waterways could involve the Division of State Lands for permits to fill across streams or wetlands. Access to county and state highways must be approved by the County Engineer or District Engineer of the Oregon Highway Division. Weight limits on roads and bridges also may affect transportation routes from your property. Truckers hauling forest products must obey seasonal hauling restrictions and must have a contract and the Notification of Operations Permit number from either the landowner or the harvesting contractor to haul forest products.

Log accountability

Logs moving on Oregon highways need to be branded. Refer to the "Sale monitoring" section for a more complete discussion of log branding.

Chemicals, waste disposal, and hazardous materials

If you want to use chemicals on your property to control competing vegetation or pests, contact an ODF Forest Practices Forester. The Oregon Department of Agriculture administers the licensing requirements for chemical applications. OSU Extension Service offices have information regarding chemical use on forestlands.

You should be familiar with your responsibilities and options regarding waste or hazardous materials on your property. The FPA covers some treatment of waste disposal associated with harvesting. Thus, ODF is a good information source. Diesel fuels,

gasoline, and other petroleum products are considered hazardous chemicals. Some requirements apply if either landowners or their contractors have quantities of such products on the site. Specific notifications are required when spills occur.

Boundary determination

Landowners are responsible for restricting operations to their own properties. Trespass of harvesting operations on another's property can result in damage awards that are double or triple the amount of damage actually done.

Registered Land Surveyors can survey your property or the boundary lines related to the timber sale. The County Surveyor's Office can determine if there have been recent surveys of adjacent properties. If there is any doubt about your property's boundaries, have them resurveyed.

After deciding how to handle the tax and regulatory aspects of the sale, you'll need to ensure that these provisions are properly included in your written timber sale contract. As the next section discusses, taxes and regulations are just two of several considerations in a good timber sale contract.

Reaching an agreement: Timber sale contracts

If you plan to sell anything more than a few loads of timber, using a soundly written contract is important. A contract is a promise between two parties that becomes a legally binding document when signed by both people. It is the instrument recognized by the legal and tax system. Contracts help establish tax treatment for the sale and provide for legal remedy if anything goes wrong.

A well-written contract, however, does more than just provide legal remedy. It can be a key tool for communicating with your timber purchaser.

The well-written contract will describe in detail what is to be done and should set deadlines for achieving the desired results. The contract should specify performance standards; overall sale goals and objectives; payment schedules; performance

guarantees, such as deposits or bonds; and insurance requirements. These and other provisions in a good contract are outlined in the checklist below and discussed in more detail in EC 1192, *Contracts for Woodland Owners and Christmas Tree Growers*.

Make your contract detailed and concise, but also allow for modification or amendment. When goals, objectives, or conditions change, your contract becomes the basis for negotiations.

As previously noted, *from the tax perspective*, there are two ways to sell standing timber (stumpage): lump-sum and scale-out sales. *From the*

contractual and operational perspective, there are advantages and disadvantages to each method.

Lump-sum sales are easy to administer and require less of the seller's time and expertise. They do, however, require a very accurate timber cruise to determine volume and value of the timber being sold since all payment is based on this volume estimate.

Lump-sum sales may not bring the highest price because risk of any volume shortfall is borne by the buyer. Potential buyers factor that risk into their bids.

Provisions in a good contract

- Names and addresses of both parties
- Land description and area covered
- Product being sold
- Guarantee of ownership and when title passes
- Price and method of measure
- Who obtains operating and harvesting permits
- Who pays privilege and harvest taxes
- Performance bonds and cash deposits
- Payment schedule
- Insurance*
 - Liability
 - Fire
- Timing
 - Start date
 - End date
 - Work schedule
- Termination conditions
- Logging requirements
 - Equipment
 - Methods
 - Utilization standards
- Road access, tolls, fees, maintenance
- Fire protection
- Environmental and special conditions
 - Water riparian considerations
 - Wet weather operations
 - Soil-skid roads
 - Slash disposal
- Subcontractor clause
- Third party use
- Signatures of both parties



*For more information, contact the Oregon Small Woodland Association (3415 Commercial St. S., Box 3079, Salem, OR 97302-0079, phone: 503-588-1813).

When timber is sold on the basis of how many tons or MBF actually are measured, it is known as a scale-out sale. In this case, the seller is better able to control markets, delivery points, and what size logs actually are removed. There is less risk for buyers, since the seller retains ownership of the timber until it actually is cut, removed, and taken to a point of measure. This can help maximize the selling price and total return. It still is important for the owner to have good information on which to base the decision to sell; however, a less intense timber cruise may be acceptable since payment is based only on the timber cut and measured. Log tracking, volume reporting, and accountability requirements make scale-out sales more complicated.

Owners often choose to cut their timber and sell logs rather than to sell stumpage. When making bona fide 631(a) log sales, you may do the logging and merchandising yourself, or you may hire a contract logger. When using a logging contract in the 631(a) sale, it is best if the seller controls both the market and the logger.

Logs often are sold using a purchase order. Purchase orders are contracts agreeing to pay a set price for a specified time period and stipulating other sale requirements.

All purchase orders should contain a price list for species and grades. Purchase orders require close examination because they frequently differ in how they define what species, grade, and log length combinations can (must) be cut. You may decide that selling to the mill offering the

most money per MBF is not in your best interest, as explained in the "Evaluating offers" section.

When using a purchase order rather than a more detailed, written logging contract, it is common to have the log buyer or mill issuing the purchase order arrange for and control the logger. In such cases, it is important to have a good, trustful working relationship with the log buyer.

Owners typically combine methods for selling cut logs based on their situation.

After you've clarified your objectives for the timber sale, done the presale layout and cruise, planned for the sale's tax effects, and prepared the sale contract, you'll be ready to advertise your sale and seek offers from prospective buyers. The next section discusses several important aspects of seeking offers.



Business and Legal Considerations

- Timber sales bring both state and federal tax implications.
- Correctly structuring your timber sale to achieve federal capital gain treatment of the income *can* be advantageous.
- Owners face many federal and state regulations. County and city regulations are fewer. "Homework," attention to detail, and follow-through are required.
- Using a *written* timber sale contract is highly recommended.
- Make your contract's detail and stringency of requirements consistent with your objectives and type of sale.
- Allow the contractor some *reasonable* amount of flexibility. Unexpected events *frequently* occur.

SUMMARY



Entering the Marketplace

Seeking offers when selling timber

Why seek offers?

Selling timber is just like selling anything else of value in a competitive market; you generally get the best price by soliciting as many offers as possible. Because most landowners sell timber only occasionally, they often lack experience and knowledge about how to most effectively market their forest products. Many owners find EC 1384, *Selling Timber and Logs: Seven Steps to Success*, helpful in better understanding the timber marketing process.

Timber marketing is different from selling many agricultural commodities such as livestock sold at an auction yard. It's a complex process for several reasons:

- Buyers are diverse. They include mills, loggers, exporters, consultants, and brokers, each with a different interest.
- Buyers purchase stumpage, individual logs, or stumpage and land as a unit. Each involves a different purchase arrangement.
- Buyers' needs vary. Some buyers want peeler logs for veneer, others want sawlogs, some buy only pulp logs, and others buy only one or two species.
- Buyers frequently are found in different locations. This greatly affects transportation costs and, of course, your net profit.

In addition to fluctuating market demand and the type of buyer, payments received for your timber products depend on things such as species, log size and quality, measurement units, logging method, hauling and road construction costs, management costs (e.g., slash disposal), and log grading and scaling rules. Not

surprisingly, marketing your timber can be confusing.

Collecting and compiling information about what you have for sale is the first step in preparing to seek offers. Information from the timber cruise allows you to more effectively describe to loggers and buyers what you have to sell. It helps you decide when to enter the market and assists in evaluating offers.

Owners want both a fair price for their products and to meet their resource management objectives. However, expecting the highest price may be unreasonable if the sale has high planning and administrative costs, or increased costs are undertaken for meeting nontimber objectives such as aesthetics, wildlife, or recreation. Taking time to identify your sale objectives helps clarify what price you will accept and how you want the property to appear when the sale is completed.

How you sell your timber products influences how you seek offers. If you sell stumpage, you are paid for the value of standing timber. Logging (felling, bucking, skidding, loading) and hauling costs then are borne by the buyer.

Stumpage value is, therefore, calculated as follows:

Stumpage value = mill delivered log price – logging cost – hauling cost

Timber owners and buyers sometimes negotiate responsibility for other costs (e.g., taxes, unusual management costs, profit, or risk). If paid by the timber owner, these costs become part of this stumpage price equation and are subtracted from the mill-delivered log price.

With stumpage sales, be particularly cautious of percentage sales, where the buyer pays you a certain percentage of the mill-delivered price. To ensure receiving a fair value for your stumpage, you must know the mill-delivered price and at least have

a general idea of logging and hauling costs. When selling logs to a mill, you are paid a mill-delivered price for your logs. In this case, you or your representative must contract and pay for the logging and hauling to get the logs to the mill.

Some landowners sell timber or logs regularly and are familiar with the marketplace and buyers, enabling them to be successful "horse traders." However, as timber values increase and competition intensifies, using a sale prospectus is an approach worth considering even for experienced sellers.

The prospectus: A way to get offers³

A prospectus is a written description of what you have to sell and the basic sale conditions. Developing a prospectus helps you think through the sale process. The prospectus provides control in marketing and is a communication tool for use with buyers.

What's in a prospectus?

A prospectus, in the form of a letter, should describe the sale area and the timber being offered for sale. (See the checklist on page 16.) You want buyers to get a general idea of what you have for sale so they can decide if your sale matches their needs. They'll ask questions such as:

- Is the sale available when I need it?
- Does the sale have the right species and sizes of trees for my operation?
- Do I have the necessary equipment to log the trees cut from this sale?
- How much time do I have to log the sale?

³This section, including the material in the checklist on page 16, has been condensed from EC 1384, *Selling Timber and Logs*, which contains an example of a prospectus, bid form, and checklist of what to include.

The well-written prospectus will describe the type of cut to be made (partial or clearcut) and the species involved. It should give volumes by species. The prospectus should describe where the sale is and the sale area's size, and should include a map showing the sale area's legal description, topographic features, and roads.

Sound prospectuses include several key dates:

- A deadline after which you no longer will accept bids
- When bidders will be notified of your decision
- When the sale will begin and end

These dates will help buyers determine whether they can work the sale into their schedules and will help you get bids from all potential buyers.

Send each buyer identical information, at the same time and with identical sale terms. Playing fair with all buyers demonstrates your integrity and helps establish your reputation. The next time you sell timber, buyers will want to work with you.

To protect yourself, provide a statement (1) reserving the right to refuse any and all bids, and (2) saying that the volumes and/or grades offered are estimates and are not guaranteed. Attach a bid form to the letter. Use a standardized bid form to ensure continuity between bids and to give you an efficient way to compare bids.

Be sure to give bidders an opportunity to inspect the sale area and timber by offering to take them on an individual or a prearranged group tour during which payment schedules, scaling procedures, designated skid trails, roads, and other sale-related issues can be discussed. If it's a sale of logs, you might have your logger on the tour to discuss details such as log lengths and diameters or other log manufacturing issues.

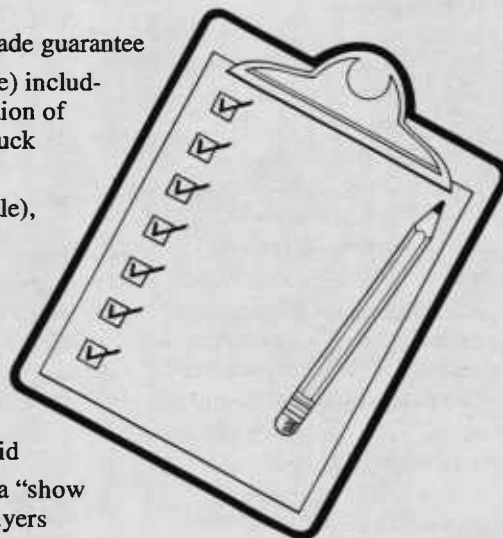
Who gets a prospectus?

Your objective is to send your prospectus to as many buyers as possible. Buyers can be located by talking to OSU Extension Service and ODF foresters, forestry consultants, other landowners, truckers, and loggers, or by looking in the phone book or newspaper classified ads under "logs," "timber," or "log/timber buyers."

Don't limit yourself to local communities. Buyers 100 or more

What should be in a prospectus?

- Specify sale type: stumpage (scale-out or lump sum) or delivered logs
- General idea of the type of harvest (partial cut or clearcut), description of logging conditions (terrain, slope, soils), and suggested logging method
- How the timber is designated for harvest: diameter cut, trees marked to cut (or leave), species, dead timber, etc.
- Timber sale boundary description
- Volume estimate and description of the timber, including tree volumes by species, diameter class, and log grade breakdown
- Map and/or description of the harvest area including legal description, access details, proposed woods road layout, and a location map showing how to get there
- Beginning and ending delivery dates, i.e., when the deliveries start and when the sale should be concluded
- Details on bidding or quotation procedures, including:
 - Closing dates for quotations
 - Time, date, and location for bid openings or selection of offers
- Form on which buyers state their offers or bids
- Request that bidders supply information on their sale conditions, e.g., minimum top diameter, preferred lengths, species, etc.
- Statement reserving your right to refuse any or all offers
- Waiver of log volume/grade guarantee
- Scaling details (if log sale) including provision for disposition of bureau certificates and truck scale tickets
- Logging details (if log sale), including seller's designated logger (if known)
- Payment details including payment date for logs or specified down payment (for timber), which may accompany bid
- Time, date, and place of a "show me" trip for interested buyers
- Special requirements such as ownership of tops, protection of crop fields and fences, location of roads and trails, and contract extension restrictions that would significantly affect timber values
- Copy of the timber sale agreement or purchase agreement



miles away may be interested. With higher timber demand and prices, more distant markets are more feasible.

Prospectus pros and cons

A prospectus has several advantages:

- It forces you to consider your sale options and objectives, including decisions about what you want to sell and how you want the property to look after the sale.
- All buyers are notified simultaneously with identical information. This not only sends the message that you are playing fair, but it allows the competitive system to work for you.
- Buyers know you're knowledgeable about the market, helping ensure that their offers more closely reflect a fair market value.
- You reduce the number of unknowns for buyers, thus reducing their risk. Consequently, you should get a better price.
- A dialogue occurs between you and the buyer; each better understands the other's needs.

Developing and distributing a prospectus does, however, take time and money. You must "soul search" your objectives and needs, collect information, construct the prospectus, and then put it to work. There always is the risk of getting limited or no response. This may be a good indication, however, that it's a poor time to enter the market. You generally have the option of waiting for a better market, and your time and money invested in developing the prospectus will pay off when you make your next attempt.

Summary

Systematically soliciting offers can improve the price received for your timber and help meet your sale objectives. A prospectus communicates what you are selling and how you plan to sell it. The prospectus contains information about the type of timber, its location, bidding procedures, timelines, waivers, and a bid form. Once you have received all of the bids, you'll then need to evaluate them, the focus of the next section.

Evaluating offers

Determining the optimal bid for your timber requires understanding two fundamental concepts—the value of wood in whatever form it is sold, and the expenses involved in the timber harvest.

Camp Run Equivalent

You can sell logs on either a grade or a camp run basis. Selling by grade means an individual price, called a "grade price," is offered for each grade of log (e.g., \$730/MBF for Douglas-fir #2 sawmill).

Selling on a camp run basis results in the wood of all grades being sold for a single price, called a "camp run price." Usually, camp run prices do not include payment for cull logs (the lowest quality but still marketable logs). Purchase orders commonly list a separate camp run price for grade

logs and individual prices for cull logs.

When selling logs, rather than stumps, we usually use prices that are quoted at the mill, called "mill-delivered" prices, instead of stumpage prices. Both the grade price and the camp run price are "mill-delivered" prices.

Unless you demand and successfully receive all bid prices quoted on either a camp run or grade basis, a method of comparing the two is needed since you frequently may receive bids using both kinds of prices. The Camp Run Equivalent (CRE) is such a method.

Converting individual prices to a CRE requires knowing the percentage of log volume in each grade. Simply multiply the percentage by the corresponding grade price and sum the amounts for all grades to get the CRE. See the example below.

Calculating Camp Run Equivalent

EXAMPLE

You have received two bids quoted as mill-delivered prices:

- Mill A offers \$800/MBF for logs of grade #2 sawmill, \$650/MBF for #3 sawmill, and \$600/MBF for #4 sawmill.
- Mill B offers \$650/MBF for the logs on a camp run basis.

You must put these bids on an equal basis to compare them fairly. Computing the CRE for Mill A's bid allows the comparison. The volume by log grade (from the cruise report) is:

- #2 sawmill—40 percent
- #3 sawmill—50 percent
- #4 sawmill—10 percent

To find Mill A's CRE, multiply the percentage of each grade by the corresponding grade price. Then sum the amounts for all grades to get the CRE. Thus, Mill A's CRE is:

$$(\$800 \times 0.40) + (\$650 \times 0.50) + (\$600 \times 0.10) = \$320 + \$325 + \$60 = \$705$$

Now compare the two bids, each on a camp run basis:

- Mill A—\$705/MBF
- Mill B—\$650/MBF

Mill A's offer is better by \$55/MBF.

Stumpage Recovery Value

Stumpage recovery value (SRV) is the value you receive for your logs minus the cost of getting them to the mill. SRV is useful because it provides another way to compare differing offers from several buyers. SRV commonly is shown in equation form as:

$$\text{SRV} = \text{mill delivered price} - \text{logging costs} - \text{hauling costs}$$

See the example of "Calculating Stumpage Recovery Value."

Selling by grade

Eastside vs. westside sales

Log prices have nearly tripled in less than 10 years, leading NIPF owners to dramatically increase harvests. Unfortunately, however, many owners have not similarly improved their knowledge and understanding of log markets and merchandising techniques. Mills are utilizing species and log grades previously ignored while acquiring and transporting logs from regions previously considered uneconomical.

Because different grading and scaling techniques are used throughout Oregon, you should understand the basic methods.

Westside scaling: Long-log Scribner scale is applied by several scaling bureaus west of the Cascade Range in Oregon and Washington. A log 40 feet or less in length is scaled as a single piece. Diameter is measured on the log's small end, and fractional inches are dropped. Defect deductions are made by reducing the diameter and/or log length.

Trim allowances (3 to 10 inches per log length) compensate for damage to ends and for "squaring off" at the mill. Improper trim allowances (either too little trim or too much) result in giving the mill part of the log's volume for which you receive no payment.

Eastside scaling: Short-log Scribner scale is used by several scaling bureaus east of the Cascade Range in Oregon and Washington. A log up to 20 feet long is scaled as a single piece; logs exceeding 20 feet are scaled as two or more pieces. Diameter is measured on the log's small end, and fractional inches are rounded rather than dropped. Trim allowances are handled the same as on the westside.

Calculating Stumpage Recovery Value

EXAMPLE

Suppose you are selling 120 MBF of timber. Logging costs are expected to be \$100/MBF. Hauling costs are estimated at \$1.50/loaded mile.

You have received offers from four mills, two of which (A and B) are the same two whose offers we compared in the Camp Run Equivalent example on page 17.

- Mill A—\$705/MBF
- Mill B—\$650/MBF

Two additional mills (C and D) also have made offers, each exceeding offers from mills A and B. Mills C and D, however, are farther away, leading to higher hauling costs.

You now are faced with the question of how to evaluate and compare considerably different offers from four mills. SRV is a good tool for this task. The SRV equation is:

$$\text{Mill delivered price} - \text{logging cost} - \text{hauling cost} = \text{SRV}$$

Your data are summarized below in bold with the SRV calculations in italics.

Mill	Offer (\$/MBF)	Logging cost (\$/MBF)	Distance (loaded miles)	SRV (\$/MBF)
A	\$705	\$100	20	\$575
	<i>\$705 - \$100 logging cost - (\$1.50/mi x 20 mi haul) = \$575</i>			
B	\$650	\$100	40	\$490
	<i>\$650 - \$100 logging cost - (\$1.50/mi x 40 mi haul) = \$490</i>			
C	\$725	\$100	60	\$535
	<i>\$725 - \$100 logging cost - (\$1.50/mi x 60 mi haul) = \$535</i>			
D	\$825	\$100	130	\$530
	<i>\$825 - \$100 logging cost - (\$1.50/mi x 130 mi haul) = \$530</i>			

This analysis shows that the highest offer (Mill D) is not the best. Rather, based on this analysis only, you would do best by selling to Mill A.

Selling by weight

Understanding how buyers measure and evaluate their products is critically important. When evaluating offers from various buyers, you may have to compare both grade-scale and weight-scale offers.

Selling logs by weight, commonly called "weight scaling," has become more popular. In concept, sale by weight is straightforward; buyers pay a certain price per ton and sellers expect to be paid for 100 percent of the delivered wood. Table 3 shows some advantages, disadvantages, and other factors to consider.

Converting log prices between tons and MBF

When selling by weight, you often must convert from weight to MBF to compare offers from various buyers and to determine the best method of sale. Converting tons to MBF requires two conversion factors: tons/cu ft for each species and a cu ft/MBF ratio (Table 4).

See the example of this conversion on page 19.

Table 3.—Important factors concerning weight scaling.

Advantages of weight scaling

- Payment is for total fiber content
- Easy to understand
- Lower harvest and transportation costs
- Eliminates bucking “games”
- More objective: removes scaler’s “judgment”
- Encourages delivery of green wood

Disadvantages of weight scaling

- Less attention is given to log appearance
- Natural variations in log weights
- Goes against traditional desire to value logs by grade

Other factors to consider

The weight-to-volume ratio varies with:

<i>Log size</i>	Small logs weigh more per volume.
<i>Specific gravity</i>	The weight/volume ratio increases with specific gravity. Factors influencing specific gravity include species, locality (north slope vs. south slope), amount of heartwood, and ring count.
<i>Moisture content</i>	The weight/volume ratio increases with moisture content.
<i>Defect</i>	Produces unusable volume, increasing the weight per volume.
<i>Bark thickness</i>	Bark is lighter than wood; thus trees with thicker bark weigh less than trees with thinner bark.

Table 4.—Common conversion factors.

Tons/cubic foot for species			
Douglas-fir	.028	Western hemlock	.029
Ponderosa pine	.026	Red alder	.023
Cubic feet/MBF of logs*			
Log diameter (inches)	Cu ft/MBF	Board feet/cu ft	
6	301	3.32	* For a complete list of cu ft/MBF factors, see the <i>Users Guide for Cubic Measurement</i> , by T. Snellgrove, et al. (USDA, Forest Service Pacific Northwest Research Station, Portland, OR, 1984).
8	293	3.41	
10	253	3.96	
12	221	4.52	

Converting from weight to MBF

Suppose that Douglas-fir logs of approximately 10 inches scaling diameter (Scribner) are sold in a thinning operation.

- Mill A offers \$200/MBF.
- Mill B offers \$30/ton.

Which is the better offer? When buying or selling logs by volume, MBF is the most frequently quoted unit, so the following equation is used to convert \$/ton to \$/MBF:

$$(\$/\text{ton}) \times (\text{tons}/\text{cu ft}) \times (\text{cu ft}/\text{MBF}) = \$/\text{MBF}$$

Using Table 4, first insert the correct Douglas-fir tons/cu ft conversion factor (.028). Now insert the correct cu ft/MBF factor for 10-inch logs (253).

The equation becomes:

$$\$30/\text{ton} \times .028 \text{ tons}/\text{cu ft} \times 253 \text{ cu ft}/\text{MBF} = \$213/\text{MBF}$$

Assuming similar hauling costs, now compare the two offers:

- Mill A—\$200/MBF
- Mill B—\$213/MBF

Thus, the offer from Mill B is best. For this example, selling by weight is preferred.

EXAMPLE

Alternative markets

Part of evaluating any timber sale offer should include the investigation and evaluation of alternative markets. This generally means both finding buyers in new locations and evaluating new products.

For example, a buyer from a more distant mill may make an attractive offer, but the log specifications may be different from your current “best” offer. You may find, for example, that your timber could be sold as sawlogs or as poles.⁴ Your cost and effort to produce each may differ, requiring some consideration to correctly evaluate the prices offered for each. The same situation might occur as you compare marketing your sawlogs on the domestic vs. the export market.

After evaluating the offers received and selecting a buyer for your timber, you also may have to find and select a logger, deal with costs of the harvesting operation, and prepare a logging contract. Each of these topics is discussed in the following sections. First, however, be certain that you have clear, realistic expectations for your harvesting operation. The next section outlines several possible expectations and offers helpful resources.



Entering the Marketplace

- Two key steps exist: seeking offers and evaluating offers.
- Knowing your sale objectives and how you'll sell your timber influences how you'll seek offers.
- A well-prepared prospectus can form the core of your strategy for seeking offers.
- Be sure to convert all offers received to a common pricing base before comparing them.
- The choice to sell your timber by grade or weight is an important decision.
- Investigate and evaluate different outlets and forms for your product (e.g., sawlogs vs. poles).

SUMMARY

⁴ Information on poles and their specifications can be found in EC 1134, *Growing and Harvesting Douglas-fir Poles*.



Getting Your Timber from Stump to Mill

Expectations for a harvesting operation

All of the timber sale planning activities reach implementation with the harvesting operation. Conducting a harvesting operation on your woodland property is a big undertaking. Naturally, owners approach the harvesting operation with many expectations—some realistic and some unrealistic. Thought on your part and discussion with the logger can help eliminate many unrealistic expectations, help your harvesting operation go better, and help ensure achieving your objectives.

The checklist on this page lists some questions to consider as you plan for harvesting. Answering them and subsequent discussion with your logger will guide you to more realistic expectations *and* will help communicate your intentions to the logger.

Finding and selecting a logger is an important part of the harvesting operation and one that causes some owners considerable worry. As presented in the following section, however, the process can be broken into steps to make the job easier.

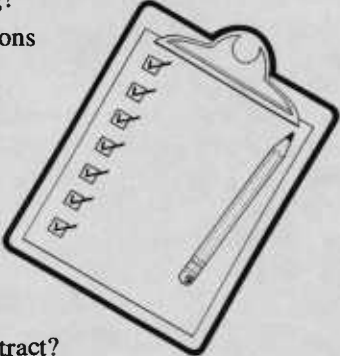
Finding and selecting a logger

Harvesting your timber requires a logging contractor with the skills, equipment, and attitude to do the job right. Hiring such a contractor doesn't always mean getting the one whose rates are the cheapest or the one who may offer the most to buy your timber. You must match the contractor's skills and equipment to your job and select the one who will carry out your management objectives.

The steps outlined here require some time, but will give you greater confidence that the job will get done

Questions to consider when planning for harvesting

- What are my options for harvesting the property?
- What should I expect from a harvesting job on my property?
- Who will do the harvesting and hauling?
- Can I get references and recommendations about the logger?
- How do I protect my property during harvesting?
- What are the pertinent rules and regulations?
- How do I solicit bids for the harvesting contract?
- How do I select a harvesting operator?
- How do I monitor and administer a contract?
- How much should the harvesting operation cost?



as you want it to be. Before selecting a logger, reading the article "Hiring a Contract Logger—A Logger's Perspective" from *Northwest Woodlands* (Fall 1989) would be quite helpful as a supplement to what is presented here.

Step 1. Develop a list of potential contractors

This is an easy step. Begin building a list by talking to your friends, neighbors, and other woodland owners who have had logging done. Local mills, log buyers, ODF service foresters, OSU Extension Service foresters, and the Associated Oregon Loggers may be able to suggest or supply a list of names.

Step 2. Call each contractor on your list

Learning more about each contractor on your list will enable you to eliminate some. To give useful responses to your questions, the

contractors will need to know more about your situation. Be prepared to briefly outline your management objectives, the nature of your harvesting job (e.g., timber size and volume, roads, special requirements, etc.), and when you want the logging done.

Use the "Guidelines for Selecting Loggers"⁵ developed by John Garland, OSU Extension timber harvesting specialist, to prepare your own checklist of questions to ask each contractor. You may want to use just part of the list at this stage and reserve other questions for the "on-the-ground" interactions discussed in Step 3.

Be sure to get names of others for whom the contractor has done work. Then, contact each reference to ask about the contractor's performance. Some of the important questions to ask include: "Were promises kept? Was a written contract used and was it

⁵Available from OSU Extension foresters in the "Managing Your Timber Sale Workshop" notebook.

followed? Did the contractor communicate with the landowner about how the job was going, about necessary changes in operation, etc.?"

Step 3. Pare down to a "short list" of potential contractors

Answers to your inquiries in Step 2 will enable you to develop a shorter list of perhaps 6 to 10 potential contractors. Follow up by sending each a letter inviting them to bid on your job. The letter should include a prospectus and a bid form. Invite all potential contractors to visit your property and examine your timber. For details about structuring the letter, prospectus, bid form, and on-site tour, refer to the "Seeking offers when selling timber" section.

Step 4. Make your final selection and complete the contract

Integrate all the information you've collected with the bids received and evaluate it critically. Remember that the lowest bid for logging cost or the highest offer to buy your timber is not always the best deal.

You now have considerable additional information with which to put those bid numbers into perspective. Choose the contractor who seems best able to meet the total set of needs for your job, with whom you feel comfortable, whose performance you have verified, and whose bid for the job is reasonable.

Costs of the harvesting operation itself are, of course, of major importance. As explained in the next section, many factors affect harvest costs. You can help yourself by better understanding these factors and their interactions.

Logging systems and costs

Early in the planning for harvesting, owners frequently must choose a logging system. Options include horse logging, tractor and wheeled skidders, shovel logging, mechanized harvesting machines, cable and skyline logging and, although less common on NIPF properties, balloons and helicopters.

Each system has advantages and disadvantages; no one system can be called "best." Evaluation of performance categories such as the size of timber the system can handle, production potential, production cost, limits on the silvicultural system, topography limits, road access requirements, stream protection capacity, site disturbance caused, and the system's general availability provides useful comparisons.⁶

Landowners who harvest timber generally find logging costs to be the largest cost component of their entire woodland operation and the source of big differences between their expectations and the actual costs and results of the harvesting operation. No brief summary can fully explain all of the harvesting cost issues. However, a better understanding of the contractor's situation, the factors influencing harvesting costs, and the general costs of various harvesting systems and activities is helpful.

Understanding harvesting contractors

Contractors who harvest timber for a living are first and foremost business people who must conduct their operations to cover all costs and generate sufficient profit to remain in business. Harvesting contractors, just like woodland owners, face many operating costs. Cost pressures from machinery and labor expenses, general business risks, taxes, operating licenses and permits, etc. influence the contractor's bid for a prospective job.

Factors influencing harvesting costs

Several factors influence harvesting costs. Some are within your control, while others are not. Although beyond your control, competition among contractors can work to your advantage if you take the time to get several bids, as discussed in the "Seeking offers when selling timber" section.

To increase the chances of getting the most appropriate cost for your job, take care to match the size of your timber to be harvested with the contractor's equipment. Timber too

big for efficient handling by a contractor's small equipment or timber too small for the contractor's large equipment leads to higher costs. The equipment often is selected to handle the largest log the contractor expects to encounter.

All harvesting jobs involve fixed costs to set up operations. These costs are allocated over the total timber volume to be harvested. Smaller jobs with less total volume thus will cost more per unit volume than larger jobs. Consider the total size of your job and try to ensure that it involves at least 1 week's work. Typically, contractors cannot afford to bring in their equipment for smaller jobs.

The type of harvesting machines used can greatly affect the job cost. A particular machine's appropriateness is influenced by sale layout. Skidding distance, a factor controllable by sale layout, varies considerably with machine type, as shown in Figure 3.

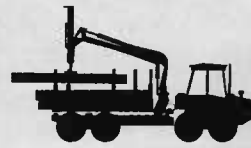
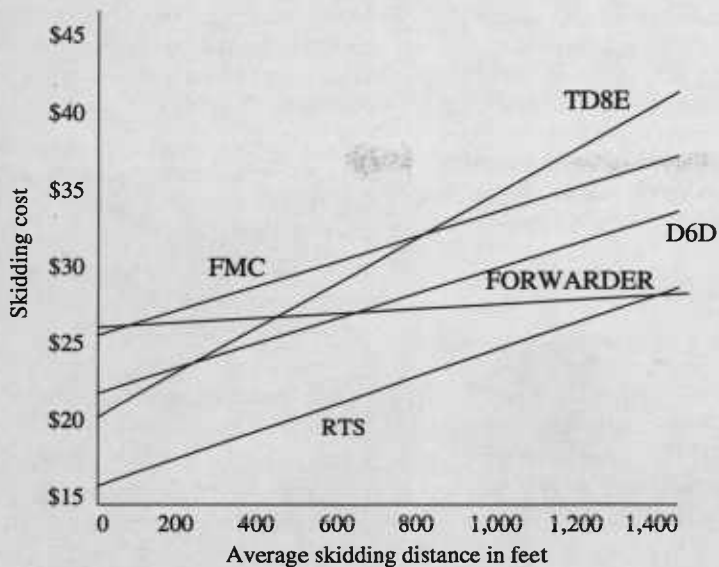
The smaller-size crawler machine (TD8E), for example, is relatively inexpensive for short skid distances, but as distances increase, its costs increase faster than other machines. The forwarder machine is more expensive initially, but is affected little by distance. Thus, at longer distances, it is considerably cheaper than the TD8E.

Finally, landowners face costs known as "lumpy" costs. It may be easiest to understand lumpy costs by contrasting them with other costs. In most cases, costs increase more or less proportionally as you increase activities. For example, costs increase incrementally for each additional MBF harvested as a result of the additional equipment use and labor involved. Similarly, costs increase more or less proportionally as logs are hauled a greater distance to the mill.

Lumpy costs, on the other hand, are related to the *levels* or *intensity* of activities. As you move from one level of intensity to another, costs may increase in a single and often quite disproportionate "lump."

Consider the situation where an activity may be done under differing levels of technological requirement, here called levels I, II, and III (Figure 4). The change in levels may, for example, reflect a change in technology required for the job, e.g., a shift from machine slash piling to manual piling. The shift from level I

⁶A detailed comparison is contained in EC 858, *Timber Harvesting Options*.



FORWARDER—Self-propelled vehicle to carry large bunches of logs to a central landing



TD8E—Smaller track-style crawler tractor

D6D—Medium-sized, track-style crawler tractor



FMC—Medium-sized, “low impact” track-style skidder



RTS—Rubber-tired skidder

Figure 3.—Skidding costs are affected by distance and machine type.

to level II may require relatively little additional effort, thus bringing relatively little cost increase. In contrast, the shift to level III may require substantially more effort, thus resulting in dramatic cost increases, which come in large, single lumps, regardless of the volume of slash involved. Another example of this lumpy cost increase from level I to level II or III is the need for substantially greater resources to meet more stringent environmental requirements.

Lumpy costs are difficult to predict and require presale dialogue to establish expectations for contract pricing.

Ranges of harvesting costs

Owners often want to use “average” costs to help plan harvest operations. Although averages sometimes are available, they often are misleading. It is more appropriate to use cost ranges. The range of harvest costs results from the fact that while costs of labor, machines, and fixed costs can be estimated, there is wide variation in production that contractors can achieve on particular sites.

For planning purposes, some harvesting costs are listed by function by a machine in Table 5. You can see the variability that is common. Of course, because all costs change over time, be sure to compare these examples, which were current in Spring 1996, with current estimates.

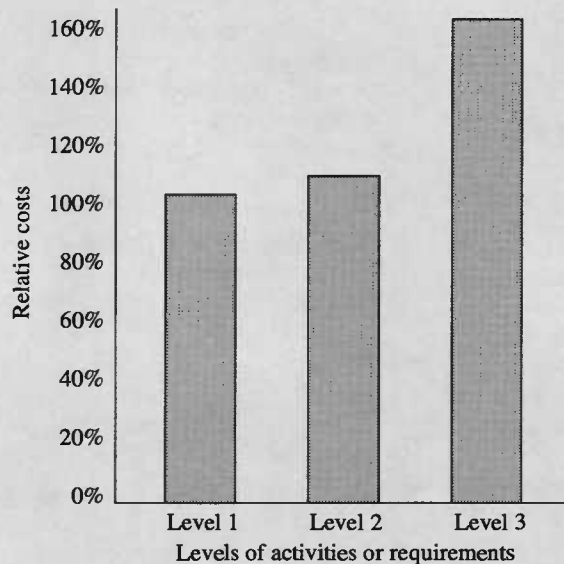


Figure 4.—Cost increments occur in “lumps” as levels or requirements change.

Table 5.—Harvesting costs.

Activity	Per MBF	Per day
Felling and bucking	\$10–50	\$250–900
Tractor skidding	\$30–80	\$350–450
Cable yarding	\$50–180	\$700–3,500
Loading	\$10–30	\$300–700
Hauling	\$20–100	\$350–450
Self-loaders	\$25–85	\$400–500

Logging contracts

There are no pre-prepared, uniform harvesting contracts that fit every situation and specify all necessary agreements between landowners and loggers. Two situations typically occur where harvest contract provisions should be detailed. First, if the purchaser arranges for the logging, the contract should specify how the logging will occur, the specific authorities and obligations of the three parties involved (landowner, timber purchaser, and harvesting contractor), and provisions for dispute settlement. Second, if the landowner arranges for the logging, he or she pays for the logging without involving the purchaser(s) and then delivers the logs to the purchaser(s).

It *does matter* whose contract is used. If the mill hires the logger, landowners often include some additional logging provisions in their timber purchase contracts to ensure adequate protection of their interests. You should review these logging provisions with competent legal and forestry experts.

You are encouraged to develop your own logging contract provisions to supplement those of the timber purchaser or to include in the service contract used when you arrange for the logging. Use the list of contract provisions in the checklist on page 13 for help in developing your own list or to evaluate someone else's contract.

Give special attention to provisions that protect your timber and property resources. These provisions might relate to the trees themselves, structures, fences, power lines, water and soil protection, roads, and other items needing special protection (e.g., wildlife, wildflowers, property corners, or bearing trees).

While contractual clauses can help protect your interests during harvest operations, you must accept that loggers need some flexibility to make every situation work. Unreasonable or overly detailed contracts discourage contractors from bidding and raise their cost estimates or reduce their overall bid prices for the timber or both. Be reasonable in constructing your contract and then be willing to work with your contractor during the "monitoring" phase of your harvest operation.

Once the sale begins, you and/or your sale manager must closely follow its progress, involving both field and office tasks. You and/or the sale manager must work with the contractor to administer and enforce the sale contract as discussed in the next section. Then, there are many reports and much paperwork to coordinate between field and office. This phase is discussed in the "Sale monitoring" section.

Don't expect everything to go exactly as outlined on paper. Carefully administering and monitoring sale activity will help you head off problems before they occur and solve others early before they become serious.

Administering timber sale contracts

A vital part of sale monitoring is overseeing or administering the timber harvesting contract. Whether done by the landowner or someone hired to administer the contract, important elements and suggested activities include:

- Have your goals in writing, know your contract provisions, and communicate them to the contractor.
- Have the contractor designate an "on-site" representative for you to contact when the contractor is not available.
- Do not announce *when* you will inspect the site, but for everyone's safety *announce your presence upon arrival* and make the inspection with the contractor or the on-site representative.
- After the inspection, give the contractor a written record of what you want corrected. Carbonless forms are readily available at stationery stores.
- Use engineer's ribbon (flagging) or tree-marking paint to mark areas to avoid or those needing special treatment.
- Ask the contractor how work will proceed so you can inspect at critical times for issues and areas posing special concern.
- At a minimum, inspect the site by walking the area before the job

begins, before all key elements of the job or operations in sensitive areas occur, and before major equipment is moved off the site.

- Inform the contractor that you want to be on-site if any inspections or discussions are held with any government agencies.
- Inform the contractor how you will operate. For example, you might follow a procedure such as:
 1. Write an on-site inspection report indicating deficiencies and required actions.
 2. Write a letter indicating deficiencies, required actions, and a deadline for imposing penalties.
 3. Enforce the contract's penalty/breach clauses.
- Do not get trapped into listening to contractors' excuses designed to elicit your sympathy for their failure to perform as contracted. This can become a diversionary tactic.
- As the job nears completion, increase your inspection frequency and inform the contractor that a final inspection must occur before major equipment leaves the site. Cost for the contractor to return equipment to the site often exceeds penalties or hold-back provisions. Be sure that a labor crew can finish cleanup and regulatory requirements.
- If contract compliance problems arise, solve them quickly. Most problems not solved within 60 days of job completion will cause future problems, e.g., planting delays, increased cost to recover, or difficulty in hiring replacement contractors.

Sale monitoring

Knowing for sure that payment received correctly matches the timber sent to the mill is the essence of sale monitoring. For sawlogs, every log is trackable with a good accounting system. To accomplish this task, the log accounting system or "paper trail" must be implemented (Figure 5).

This system puts the landowner and/or manager handling the sale at the center of the process, allowing him or her to track the timber from

The Paper Trail

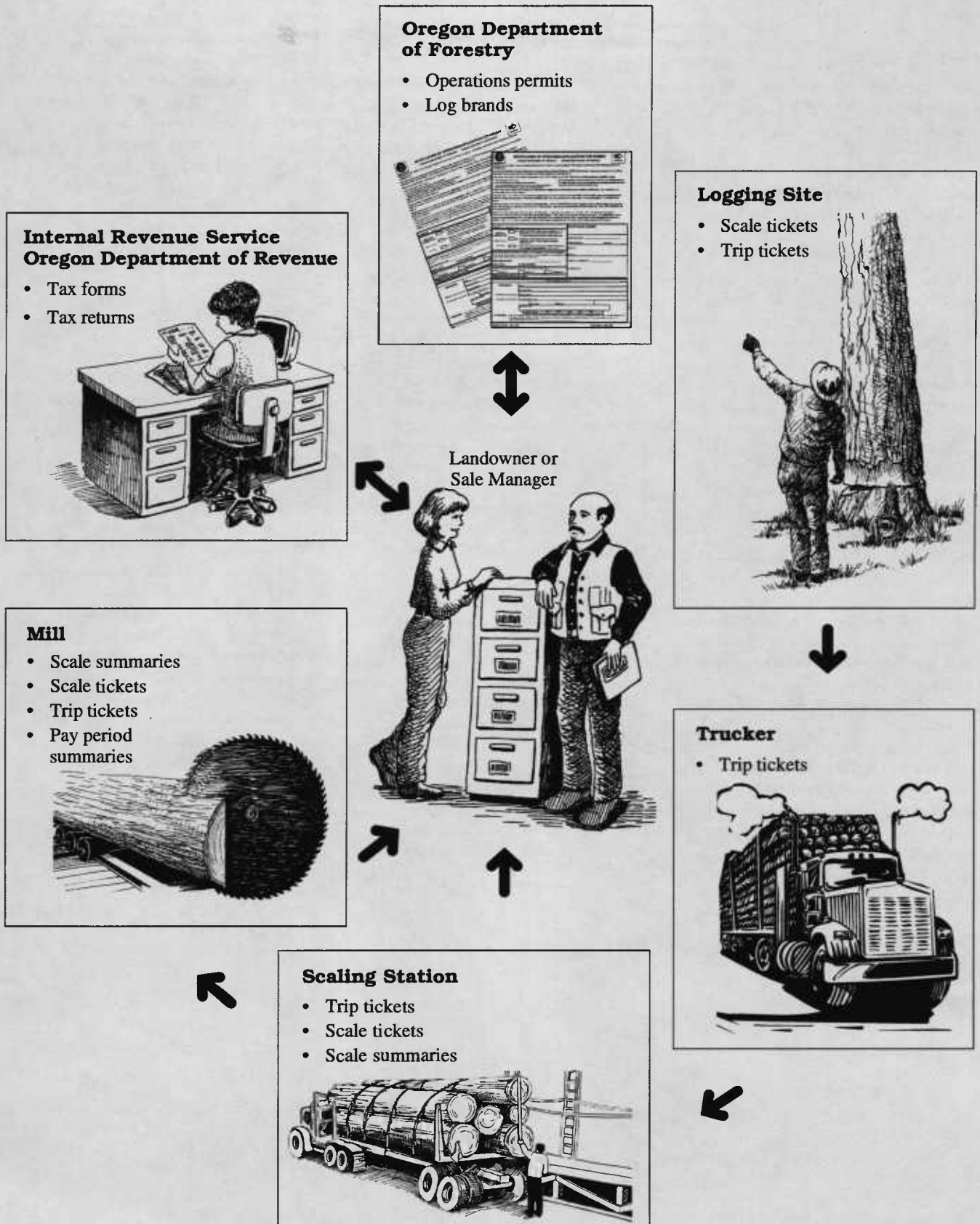


Figure 5.—Log accounting system—“The Paper Trail.”

the woods to the mill. It also contains the necessary connections with the government agencies responsible for administering tax and environmental laws.

Before logging

The paper trail begins with a visit to the local ODF office for an application for a Notification of Operation Permit. This document allows the operation to officially begin, triggers FPA inspections, and notifies the DOR that timber harvest is occurring.

Although the official waiting period between applying and beginning the operation is 15 days, this period can be shortened or lengthened (if sensitive environmental concerns are identified) at the discretion of the Forest Practices Forester. Take information about the sale to the ODF office with you; you'll need it to complete the permit correctly.

Another item with which ODF can help is the issue of log brands. Like cattle, logs should be branded to identify the owner before being transported to the mill. Branding is required by Oregon law west of the Cascades crest but not east of the crest. Branding is done by hitting the end of the log with a heavy hammer that has the owner's brand cast into its head.

A form to register your log brand is available from ODF. All it takes is some creativity on your part to sketch a brand and having a local metal worker construct your brand on a hammer. A list of all log brands is kept in Salem. Your proposed brand is checked with others already in circulation before your brand is granted.

If you harvest infrequently, it may be simpler to use someone else's log brand. Most loggers, sawmills, and self-loader truckers have one or more log brands available for use.

During logging

For scale-out stumpage sales, arrangements must be finalized with the person who is going to measure the logs. This commonly is a scaling bureau, an independent, third-party organization working for both the buyer and seller. Alternatively, some mills employ their own scalers. Either way, the landowner and/or timber sale manager must know how the scaling is being done and frequently verify its accuracy.

Scalers are required to supply a report of the log volumes measured. This is called a "scale ticket," and copies usually go to the mill and the timber sale manager.

A common concern is whether or not the logs are being accurately measured by the log scaler. It is wise to occasionally have one or two loads independently scaled before they leave the sale area and to then compare that scale with the scaler's numbers. While they may not totally agree, they should be close. Sometimes it is possible to run an occasional load through another scaling bureau and double scale it for comparison.

When selling stumpage on a scale-out basis, keeping track of each load of logs is done with a load or trip ticket. These forms usually are available from local mills, but easily can be made from generic forms available from a stationery store.

Number the forms consecutively and have sufficient copies to leave one at various checkpoints along the way. Make at least five copies, enough to leave one at the landing, one with the sale manager, one each attached to scale ticket copies for the

mill and the landowner, and one for the trucker.

Before sending any timber to the mill, the contract's payment schedule must be implemented. If deposits or prepayments have been agreed upon by the logger or purchaser, the seller should have them in hand before cutting begins. This includes lump sum sales where payment is not based on the amount of timber cut.

Once the timber sale begins, the sale manager should follow it daily. More frequent visits to the site generally are not necessary and sometimes are bothersome to the logging contractor. Vary the time you arrive to keep the contractor guessing and to provide the most effective oversight.

Never enter the logging site without full visual recognition from the logging contractor or the on-site representative. "Sneaking in" can be both dangerous and unnerving.

While on site, assess contract compliance and pick up any necessary paperwork (e.g., trip tickets). Also try to anticipate problems and deal with them immediately.

At this point in the sale, the paperwork should be flowing on a daily and weekly basis. The sale manager should receive scale tickets, scale summaries, and payment summaries on a biweekly, weekly, or even daily basis from the scaling bureau. Check and cross-check all of these items to ensure accuracy. For sawlog sales, each log should be trackable on the scale tickets. Each load then is accumulated on scale summaries, the basis for the mill's payment. For weight-scaled or other types of sales, it may be possible to track sale progress by tracking loads delivered and total volume or weight measured.

After logging

When logging is complete, the sale manager is responsible for reconciling all volumes and payments and making final payments to contractors. The record-keeping system used to track the timber sale then is used to prepare tax forms.

Planning and conducting the timber sale is a big job. Owners frequently desire help with some or all of the tasks involved. Consulting foresters can be valuable sources of assistance. The following section outlines how to find a qualified consulting forester.

SUMMARY



Getting your Timber from Stump to Mill

- Finding and selecting a logger is easier with a step-wise approach.
- Establishing reasonable and realistic expectations for the actual harvesting job is critical for good relations with your logger.
- The many logging systems available offer varying impacts on the site and widely varying cost ranges.
- Successful sales require regular monitoring and administration of the sale contract—before, during, and after the logging operation.
- Stay on top of a rapidly moving timber sale by establishing a “paper trail” that tracks movement of your logs to the mill.



Getting Help: Hiring a Consulting Forester

Forestry consultants are professionals who supply services to woodland owners, government agencies, the forest products industry, financial institutions, attorneys, and others. They represent a wide range of forestry expertise. Some consultants can provide advice on all aspects of forestry, while others specialize in certain technical areas.

Services supplied by forestry consultants include complete woodland management, evaluation and acquisition of land and timber, business and financial analysis, surveying, road and logging system engineering, products marketing, and environmental analysis. Consultants often specialize in one or two services.

The Association of Consulting Foresters (ACF) is a national organization that requires its members to maintain high standards of training and professional ethics. Several forestry consultants in Oregon are ACF members. ACF members must:

- Possess a forestry degree from an approved college and keep abreast of new technology through continuing education
- Have 5 years of practical forestry experience including 1 year consulting
- Work principally in forestry consulting
- Remain independent of any business that may create a potential conflict of interest in serving clients

First, obtain a list of names from your local OSU Extension Service or ODF office, neighboring landowners, the Society of American Foresters consulting foresters directory, or the ACF directory. Most public agencies can provide lists of consultants but cannot recommend individuals.

Second, choose three or four consultants with expertise in the services you need. Next, interview them by phone or in person. Some questions and/or discussion issues that will help in the selection of any forestry consultant are:

- Are you a trained forester?
- Is your primary business consulting forestry?
- May I see examples of your work?
- Is your forest management philosophy compatible with my needs and wants?
- In what professional organizations are you active?

Ask for a copy of their code of ethics and a list of references. Finally, after interviewing the candidates, review the responses to your questions and invite the consultant best meeting your criteria to accompany

you on a tour of your property to discuss specifics.

Many consultants will not charge you for this short initial visit, but don't expect them to spend more than 1 or 2 hours with you. Also, don't expect to extract enough information from this initial visit to answer everything you need to know about managing either your property or your timber sale.

If you have a good "match" with the consultant, by the end of this visit you should reach an agreement and determine the fee for the consultant's services. It is important that both of you speak the same language. You must be comfortable with and trust your consultant. Finally, remember that it generally is advisable to involve your consultant earlier in the sale process rather than later, after you perhaps have encountered problems.



Getting Help: Hiring a Consulting Forester

SUMMARY

- Forestry consultants offer a wide range of expertise and services.
- Identify the skills and services you need.
- Some owners hire consultants to do only minor parts of the sale; others hire out all aspects of the sale.
- Evaluate potential consultants with the same thoroughness used in selecting your logger.

Summary

This publication has explained that there are several possible reasons for conducting a timber sale and that one of the first steps in the process is finding out what you have to sell. Further, you now know that the sale's federal income and state timber tax implications should be investigated before the sale occurs, as should your legal obligations and responsibilities. You've also learned that it is best to use a written contract when selling your timber.

As you move closer to actually entering the marketplace, you now have a reliable tool—the timber sale

prospectus—to use when seeking offers. Further, you have some guidelines and solid techniques to use in evaluating the offers received.

As you actually prepare to get your timber from stump to mill, a big step is finding and selecting a logger. Important elements in that process include having reasonable expectations for the harvesting operation, having basic knowledge of logging systems and their costs, knowing the importance of actively administering your timber sale contract, and monitoring the sale's progress during harvesting.

Many landowners know all of this, but don't want to do the entire operation themselves. The last section offers clear guidelines for getting help.

Remember, thousands of forestland owners just like you happily and successfully conduct timber sales each year. You can too. Just follow the outline presented here, learn all that you can, and, when in doubt, ask questions and seek help. The successful sale will require work on your part, but you'll be rewarded with the satisfaction of accomplishing your forest ownership and land management objectives. Good luck!

For More Information

OSU Extension publications

- EC 858, *Timber Harvesting Options*, by J. Garland (reprinted 1997). No charge.
- EC 956, *Logging Woodland Properties*, by J. Garland (reprinted 1997). 75¢
- EC 1118, *Planning Woodland Roads*, by J. Garland and D. Jackson (revised 1996), \$1.00
- EC 1125, *Management Planning for Woodland Owners: Why and How*, by M. Bondi and C. Landgren (reprinted 1993). \$1.00
- EC 1126, *Management Planning for Woodland Owners: An Example*, by C. Landgren and M. Bondi (reprinted 1996). \$1.00
- EC 1127, *Measuring Timber Products Harvested from Your Woodland*, by P. Oester (reprinted 1996). \$2.00
- EC 1134, *Growing and Harvesting Douglas-fir Poles*, by C. Landgren, M. Bondi, and W. Emmingham (reprinted 1994) 75¢
- EC 1140, *Hauling Logs from Woodland Properties*, by J. Garland and D. Jackson (revised 1997) \$1.50
- EC 1151, *Taxes and Assessments on Oregon Forest Land and Timber*, by C. Landgren and N. Elwood (revised 1997) \$2.00

- EC 1192, *Contracts for Woodland Owners and Christmas Tree Growers*, by W. Mukatis, N. Elwood, P. Adams, and C. Sutherland (revised 1996). \$2.00
- EC 1194, *Oregon's Forest Practice Rules*, by P. Adams (revised 1996). \$1.00
- EC 1384, *Selling Timber and Logs: Seven Steps to Success*, by D. Cleaves (reprinted 1993). \$2.50
- EC 1442, *Financial Considerations in Deciding When to Harvest Timber*, by R. Duddles (new 1995). 50¢

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Other publications

Forest Owners' Guide to the Federal Income Tax. 1995. USDA-Forest Service. Agricultural Handbook 708. 138 pp. Available from U.S. Government Bookstore, 1305 SW First Ave., Portland OR 97201-5801, or Dr. Norman E. Elwood, Forest Resources Department, Oregon State University, Corvallis, OR 97331-5703.

"Guidelines for Selecting Loggers," by John Garland. In "Managing Your Timber Sale Workshop" notebook. Available from OSU Extension foresters.

"Hiring a Contract Logger—A Logger's Perspective," Northwest Woodlands (Fall 1989).



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For information about how to order, and for a current list of titles and prices, inquire at the office of the OSU Extension Service that serves your county.

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