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Marketing Timber from the Private Woodland
Michigan State University Extension Service
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Marketing Timber from The Private Woodland

by Randall B. Heiligmann and Melvin R. Koelling¹

Approximately 60 percent of Michigan's forest land is owned by private non-industrial woodland owners. Each year many of these individuals receive significant income from their woodlands by properly marketing timber. In addition, by following management guidelines in selecting those trees to be harvested and those to leave they improve the health and vigor of their forest and its quality for other uses. Unfortunately, many woodland owners sell their timber for only a fraction of its value because they either fail to recognize its true value or they do not market it properly.

If you are contemplating selling some timber or if you are approached with an offer to buy some of your timber, don't "jump too quickly." The buyer may be offering you a fair price or he may not. Every forester knows several examples involving the individuals who sold their "worthless" timber only to find out later that its true value was 5, 10, or even 20 times greater than what they had received. Occasionally this results from the need for a quick sale, but more likely it is due to a lack of information and marketing knowledge by the landowner. Taking time to find out what you have to sell, then choosing the appropriate method of marketing will usually result in more income for the seller.

If you have little or no experience in woodland management or timber marketing, seek the assistance of a professional forester. The Forestry Division of the Michigan Department of Natural Resources has area foresters located throughout the state who at no cost can provide assistance in selecting trees that should be harvested and related timber stand improvement practices to help achieve your ownership goals. They can also provide marketing assistance.

Many of the larger forest industries in the state will also provide limited forest management and marketing assistance to private woodland owners. In addition, there are several consulting foresters who, for a fee, can provide a wide range of land management services, including timber harvesting and marketing assistance. Fees for assistance in harvesting and marketing are usually a percentage of the gross receipts of the sale.

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Most forestlands in private ownership are capable of producing high quality timber, however, most are not being managed so maximum production can occur.

You can obtain names and addresses of consulting foresters practicing forestry in Michigan from the local county Cooperative Extension Service office.

In this publication, guidelines are presented to assist individuals in marketing timber. These suggestions are not meant as a substitute for advice and assistance from a professional forester, but rather should assist you as a landowner in understanding and implementing proper timber marketing procedures.

Why Sell Timber?

There are several reasons why a woodland owner may decide to sell timber. First, a harvest may be prescribed in the overall forest management plan. If a woodland owner has worked with a professional forester to develop a management plan for achieving ownership objectives, it is quite likely the plan will call for periodic timber harvesting. Timber cutting is one of the forester's major management tools and is useful not only for generating income from a forest, but for accomplishing many other objectives such as improving the health and vigor of the forest, developing wildlife habitat, altering species composition, establishing planting areas, creating vistas and trails and developing certain types of recreational activities.

Second, the woodland may be used as a source of income which may, in fact, be an objective of the management plan. While the value of woodlots will vary depending on such factors as size, quality, species composition, etc., a woodlot in good condition can have considerable value and can be managed to yield periodic or emergency income.

Third, timber may be harvested to salvage its value. Such a harvest is done to salvage the value of trees that

have been damaged to such an extent that they will not recover or where the potential for such damage is extremely high. Ice and snow storms, fire, insects, and disease are factors which could cause enough damage to justify a salvage cutting. The incidence and rapid spread of Dutch elm disease is an example of a problem whose anticipated damage has resulted in many salvage cuts.

Fourth, timber may be harvested in order to use the land for other purposes ranging from golf courses and parking lots to crop and pastureland. The timber on such land often has considerable value and should be marketed. However, landowners contemplating timberland conversion should carefully evaluate the proposed conversion, particularly if it is to a more intensive agronomic use such as pasture or cropland. Much of Michigan's current forestland will not support more intensive agriculture because the soils are too shallow, droughty, or low in fertility and/or the slopes are too steep.

In addition to these four principal reasons, there are several other reasons for harvesting timber which apply specifically to individual owners or woodlands.

Methods of Selling Timber

Private woodland owners can choose to harvest their own timber and sell the cut product (e.g. veneer and sawlogs, pulpwood, posts, poles, etc.) or sell the trees as they stand and allow the buyer to cut and haul them away. This latter method is referred to as selling stumpage.

Harvesting Your Own Timber

The woodland owner who cuts and delivers the logs or other products roadside or to the mill may substantially increase profits from the sale. Such an operation, however, should only be undertaken by someone with experience. Logging requires special skills and knowledge and there are substantial risks involved. Logging is hard, dangerous work. In addition to the personal risks, engaging in logging may alter insurance coverage. Workman's compensation and other state and federal employment requirements are particularly strict in the logging industry.

Some types of logging may require special equipment; attempting to log with some agricultural equip-

ment could result in extensive damage to the equipment. Logging an area often requires a much longer time than is initially estimated and therefore may interfere with other activities and responsibilities. Furthermore, improper cutting, handling, or transporting of high-value logs can destroy a great deal of their value. For this last reason the harvesting of high value species, such as black walnut trees containing veneer quality logs, should always be left to the buyer.

A discussion of proper techniques of cutting, handling, and transporting timber products is beyond the scope of this publication. If you have the necessary time, skills, and experience and wish to increase profits from your timber sale by harvesting and transporting the products, keep the following points in mind:

1. Have a market for your product before you invest the time and money necessary to harvest it. Have a written contract with the buyer. Don't get stuck with a product to sell without a buyer.
2. Know your buyer's specifications and requirements (e.g. size, volume or number he will accept in a given time, quality, etc.)

3. Know your legal responsibilities for such things as workman's compensation, minimum wage, social security, state and federal income tax, O.S.H.A. requirements, etc. This is particularly important if you employ other people.
4. Use the proper equipment.
5. Observe all safety precautions and procedures.

Selling Stumpage

Most private woodland owners sell their timber as stumpage. Stumpage sales are of two types.

1. **Lump-Sum Sales:** A timber sale in which a single payment (the "lump-sum") is made to the seller for the trees designated for sale. This is the easier of the two types of sales to administer, but under current Internal Revenue rules has some tax disadvantages for woodland owners considering more than two or three timber sales in their lifetimes.
2. **Sale-By-Unit (Also called Sale-By-Piece or Sale-By-Scale):** A timber sale in which the seller is paid a certain amount for each unit of product cut (e.g. so many dollars per 1000 board feet, per cord, per post, per pole, etc.). This type of sale requires someone to measure the products harvested (foresters call this scaling). This someone may be the landowner, a consulting forester, the buyer (if the seller has complete confidence in him), or a receiving mill. The questions of who will provide an accurate production tally and how, when, and where the scaling will be done make this type of sale more difficult to administer than the lump-sum sale. However, under current Internal Revenue Service regulations, this form of sale has definite tax advantages over the former for landowners contemplating more than two or three timber sales in their lifetime. Woodland owners contemplating a timber sale should acquaint themselves with the current Internal Revenue Service regulations concerning capital gains treatment and other benefits associated with timber sales receipts.

In both lump-sum and sale-by-unit stumpage sales the sale price and buyer are usually determined one of three ways.

1. **Single Offer** In this case a single buyer contacts or is contacted by the seller and the buyer offers to buy the timber at a particular price. While this pro-

cedure may produce a fair price, it often produces a price well below what the timber is worth because the buyer has no competition and the seller often is uninformed regarding the value of the timber. In the following situations, however, it may be the best method:

- a. Seller has only a small amount of timber to sell. Often, in very small sales, only one buyer will be interested.
- b. The timber for sale is of such low quality that very few buyers would be interested.
- c. Markets for the species for sale are so poor that very few buyers would be interested.
- d. Seller is a non-resident landowner who does not wish to become involved in administering a bid sale, but would rather work with one well established buyer, perhaps one that will provide some management services.

If you're working with a forester familiar with the area, he will be able to tell you whether any of these situations exist and advise you accordingly. In situations other than those listed above, selling timber by a bid process will usually produce higher income.

2. **Oral Bid or Negotiations** is a sale in which the seller or seller's agent engages in verbal bidding or negotiations with one or more buyers until an acceptable sale price is obtained. While this type of procedure is fairly quick and sometimes produces the high sale price, it is not the type of sale someone should engage in who is unfamiliar with timber markets and the quality and value of the timber to be sold. In short, unless the seller is extremely well informed, it is best to leave the oral timber sales to foresters and timber dealers. If the services of a consulting forester are engaged, he may use this technique on occasion.
3. **Written Sealed Bids** A sale in which potential buyers are informed about the sale and given a period of time (usually 4-6 weeks) to inspect the timber and submit written sealed bids. At a specified time and place the bids are opened and the successful buyer is selected. In most situations, this form of sale produces the most desirable results for private woodland owners.



Many woodlands in Michigan can be managed to produce a sustained yield of forest products. Some of these sugar maple logs are of veneer quality.

Determining What You Have to Sell

In order to advertise a timber sale to potential buyers and to give some indication of its potential value, the landowner must determine what to sell. This involves deciding which trees or areas in the woodland are to be cut and then determining for each species the number of trees and/or the volume of wood or amount of products to be sold.

Unless the harvest is being carried out to clear the land for other uses, selection of the trees to be harvested should be done with the advice of a competent professional forester to insure that the harvest will satisfy your objectives and maintain the woodland in a vigorous and productive condition. The type and intensity of harvesting required will depend on ownership objectives and the type and condition of the woodlot.

Trees selected to be cut should be clearly marked for easy identification. If individual trees are to be cut throughout the woodlot, each is usually marked with tree marking paint. A paint splotch (yellow is the most visible in the forest) at about chest height is sufficient although some foresters mark the tree at both chest height and at ground level (stump).

The trees to be cut should be marked so that they can be easily located. For example, all of the marks may be placed on the same side of the trees (e.g. the north,

south, east, or west side) or the trees may be marked so they can be seen from a main trail or road. If small areas are to be harvested, as in a clearcut, mark the individual trees or the trees around the boundary of the area.

After selecting the trees to be cut estimate the volume of wood or the number of products that will be cut in each species. The more common products produced in a timber harvest include sawlogs, veneer logs, pulpwood, firewood, posts, and poles.

Measuring Sawtimber, Veneer Trees, and Logs

Trees large enough and of good enough quality to produce logs which can be sawn into lumber are referred to as sawtimber. To qualify as sawtimber, trees usually must be at least 11 inches in diameter measured 4½ feet above the ground (foresters refer to this as the diameter at breast height or dbh), and not be excessively defective. Defective trees includes such things as excessive branchiness, scars, bulges, bark distortions, holes, branch stubs, and crookedness.

Individual trees of many species such as black walnut, sugar maple, yellow birch, and several others

which are of exceptional quality and usually at least 16-18 inches dbh often can be sold as veneer trees. Logs from these trees will be sliced or peeled to produce veneer. Such trees are considerably more valuable than sawtimber.

The basic unit for measuring both sawtimber and veneer trees (logs) is the board foot. A board foot is a piece of wood of any shape which contains 144 cubic inches of wood (12 in. x 12 in. x 1 in., or 6 in. x 6 in. x 4 in., etc.). To determine the number of board feet in a standing tree you need its dbh, merchantable height (height to main fork; height to serious defect such as hollow or fork, or height to a minimum diameter, approximately 10 inches in the case of sawtimber and veneer trees), and a tree volume table (Table I).

Dbh can be measured using special tools designed for that purpose such as diameter tapes, calipers, or Biltmore sticks, or the circumference of the tree can be measured (perhaps with a cloth sewing tape) and converted to diameter using Table II. For timber sales, dbh is usually measured to the nearest inch. A tree, then could have a dbh of 10, 12, 14, 16, etc. inches.

The merchantable height of most sawtimber is measured in "logs" and "half-logs". A "log" is a timber measurement term indicating a tree trunk length of 16 feet. A "half-log" is 8 feet in length. The merchantable height of high value veneer trees, on the other hand, is often measured to the nearest foot.

As an example of determining the volume of a tree using Table I, a tree 22 inches dbh with 32 feet (2 logs) of merchantable height will yield approximately 370 board feet of wood.

Table I, III, and IV are examples of three different tree volume tables currently in use in Michigan. These are the International 1/4-inch, Doyle and Scribner. Several other kinds of log rules are used in different parts of the United States. A comparison of the three tables indicates these rules are not identical but indicate different volumes for a specific tree size, particularly in the smaller tree sizes. These differences result from the fact that a volume table does not give a measure of actual board foot volume of the standing tree but provides an estimate of the number of board feet of lumber that can be sawn from the tree or log. This is influenced by many factors such as the thickness of the saw, the size of boards cut, the thickness of the slabs taken off the log in squaring it, etc. A number of methods have been used to estimate this volume resulting in the different volume tables. When advertising timber for sale the volume table used to determine the volume estimate should be indicated. The International 1/4-inch rule probably comes the closest to estimating what can actually be cut from a tree or log. Note, however, that there is not a

DBH (inches)	Number of 16-foot logs						
	1	1½	2	2½	3	3½	4
	Volume in board feet						
10	36	48	59	66	73		
11	46	61	76	86	96		
12	56	74	92	106	120	128	137
13	67	90	112	130	147	158	168
14	78	105	132	153	174	187	200
15	92	124	156	182	208	225	242
16	106	143	180	210	241	263	285
17	121	164	206	242	278	304	330
18	136	184	233	274	314	344	374
19	154	209	264	311	358	392	427
20	171	234	296	348	401	440	480
21	191	262	332	391	450	496	542
22	211	290	368	434	500	552	603
23	231	318	404	478	552	608	663
24	251	346	441	523	605	664	723
25	275	380	484	574	665	732	800
26	299	414	528	626	725	801	877
27	323	448	572	680	788	870	952
28	347	482	616	733	850	938	1,027
29	375	521	667	794	920	1,016	1,112
30	403	560	718	854	991	1,094	1,198

Table I. Tree Volume Based on International 1/4-inch Log Rule (Form Class (78) (From Mesavage, C. and Girard, J.S., 1946. "Tables for Estimating Board Foot Volume of Timber" U.S.D.A. Forest Service. 94 pp.)

Circumference of tree breast high (inches)	Diameter of tree breast high (inches)
31	10
35	11
38	12
41	13
44	14
47	15
50	16
53	17
57	18
60	19
63	20
66	21
69	22
72	23
75	24
79	25
82	26
85	27
88	28
91	29
94	30

Table II. Relationship between Circumference and Diameter Breast High (inches) (Mesavage, C. and Girard, J.S. 1946. "Tables for Estimating Board Foot Volume of Timber" U.S.D.A. Forest Service. 94 pp.)

DBH (inches)	Number of 16-foot logs						
	1	1½	2	2½	3	3½	4
10	14	17	20	21	22		
11	22	27	32	35	38		
12	29	36	43	48	53	54	56
13	38	48	59	66	73	76	80
14	48	62	75	84	93	98	103
15	60	78	96	108	121	128	136
16	72	94	116	132	149	160	170
17	86	113	140	161	182	196	209
18	100	132	164	190	215	232	248
19	118	156	194	225	256	276	297
20	135	180	225	261	297	322	346
21	154	207	260	302	344	374	404
22	174	234	295	344	392	427	462
23	195	264	332	388	444	483	522
24	216	293	370	433	496	539	582
25	241	328	414	486	558	609	660
26	266	362	459	539	619	689	737
27	292	398	505	594	684	749	814
28	317	434	551	650	750	820	890
29	346	475	604	714	824	902	980
30	376	517	658	778	898	984	1,069

Table III. Tree Volume Table Based on Doyle Log Rule (Form Class 78) (From: Mesavage, C. and Girard, J.S. 1946. "Tables for Estimating Board Foot Volume of Timber" U.S.D.A. Forest Service. 94 pp.)

DBH (inches)	Number of 16-foot logs						
	1	1½	2	2½	3	3½	4
10	28	36	44	48	52		
11	38	49	60	67	74		
12	47	61	75	85	95	100	106
13	58	76	94	107	120	128	136
14	69	92	114	130	146	156	166
15	82	109	136	157	178	192	206
16	95	127	159	185	211	229	247
17	109	146	184	215	246	268	289
18	123	166	209	244	280	306	331
19	140	190	240	281	322	352	382
20	157	214	270	317	364	398	432
21	176	240	304	358	411	450	490
22	194	266	338	398	458	504	549
23	214	294	374	441	508	558	607
24	234	322	409	484	558	611	665
25	258	355	452	534	617	678	740
26	281	388	494	585	676	745	814
27	304	420	536	636	736	811	886
28	327	452	578	686	795	877	959
29	354	491	628	746	864	953	1,042
30	382	530	678	806	933	1,028	1,124

Table IV. Tree Volume Table Based on Scribner Decimal Log Rule (Form Class 78) (From Mesavage, C. and Girard, J.S. 1946. "Tables for Estimating Board Foot Volume of Timber" U.S.D.A. Forest Service. 94 pp.)

great deal of difference among the three tables when the diameter of the tree is over 20 inches.

The board foot volume of logs may be similarly estimated using a log volume table (Tables V, VI, and VII) if the diameter inside the bark (dib) at the small end of the log, and the length of the log are known. As with tree volume tables, there are also several different kinds of log volume tables.

Measuring Pulpwood

Trees too small or too poor quality to be sold for sawlogs are often sold for pulpwood. Ultimately, these trees are chipped or ground up to produce wood fiber (pulp) or chips which are used to manufacture such products as paper, cardboard, hardboard, and various types of particle board. Nearly all species of trees growing in Michigan can be sold for pulpwood. However, in some areas of the state it is difficult to find buyers for certain species because of the long distance to the nearest mill using that species.

Pulpwood is cut into bolts (short logs) 100 inches long with a minimum diameter at the small end of 4 inches. It is sold either by the cord or by the ton. A standard cord is the equivalent of a stack of wood 8 feet long, 4 feet high, and 4 feet wide. However, in Michigan a cord is generally accepted to be a stack of wood 100 inches long, 4 feet high, and 4 feet wide or its equivalent.

Contents according to length of log

Diameter at end of log, inside bark (inches)	Contents according to length of log					
	6 feet	8 feet	10 feet	12 feet	14 feet	16 feet
6	5	10	10	15	15	20
7	10	10	15	20	25	30
8	10	15	20	25	35	40
9	15	20	30	35	45	50
10	20	30	35	45	55	60
11	25	35	45	55	70	80
12	30	45	55	70	85	95
13	40	55	70	85	100	115
14	45	65	80	100	115	135
15	55	75	95	115	135	160
16	60	85	110	130	155	180
17	70	95	125	150	180	205
18	80	110	140	170	200	230
19	90	125	155	190	225	260
20	100	135	175	210	250	290
21	115	155	195	235	280	320
22	125	170	215	260	305	355
23	140	185	235	285	335	390
24	150	205	255	310	370	425
25	165	220	280	340	400	460
26	180	240	305	370	435	500
27	195	260	330	400	470	540
28	210	280	335	430	510	585
29	225	305	385	465	545	630
30	245	325	410	585	495	675

Table V. Contents of logs, in board-feet, by the International ¼-inch log rule. Anonymous. Undated. "Field Reference Handbook for Service Foresters" U.S.F.S. Northeastern Area, State and Private Forestry, Upper Darby, Pennsylvania.

Contents according to length of log

Diameter at end of log, inside bark (inches)	Contents according to length of log					
	6 feet	8 feet	10 feet	12 feet	14 feet	16 feet
8	6	8	10	12	14	16
9	9	13	16	19	22	25
10	14	18	23	27	32	36
11	18	25	31	37	43	49
12	24	32	40	48	56	64
13	30	41	51	61	71	81
14	38	50	63	75	88	100
15	45	61	76	91	106	121
16	54	72	90	108	126	144
17	63	85	106	127	148	169
18	74	98	123	147	172	196
19	84	113	141	169	197	225
20	96	128	160	192	224	256
21	108	145	181	217	253	289
22	122	162	203	243	284	324
23	135	181	226	271	316	351
24	150	200	250	300	350	400
25	165	221	276	331	386	441
26	182	242	303	363	424	484
27	198	265	331	397	463	529
28	216	288	360	432	504	576
29	234	313	391	469	547	625
30	254	338	423	507	592	676

Table VI. Contents of logs, in board-feet, by the Doyle log rule. Anonymous. Undated. "Field Reference Handbook for Service Foresters" U.S.F.S. Northeastern Area, State and Private Forestry, Upper Darby, Pennsylvania.

Diameter at end of log, inside bark (inches)	Contents according to length of log					
	6 feet	8 feet	10 feet	12 feet	14 feet	16 feet
8	10	10	20	20	20	30
9	10	20	30	30	30	40
10	20	30	30	30	40	60
11	20	30	40	40	50	70
12	30	40	50	60	70	80
13	40	50	60	70	80	100
14	40	60	70	90	100	110
15	50	70	90	110	120	140
16	60	80	100	120	140	160
17	70	90	120	140	160	180
18	80	110	130	160	190	210
19	90	120	150	180	210	240
20	110	140	170	210	240	280
21	120	150	190	230	270	300
22	130	170	210	250	290	330
23	140	190	230	280	330	380
24	150	210	250	300	350	400
25	170	230	290	340	400	460
26	190	260	310	370	440	500
27	210	270	340	410	480	550
28	220	290	360	440	510	580
29	230	310	380	460	530	610
30	260	330	410	490	570	660

Table VII. Contents of logs, in board-feet, by the Scribner Decimal C/log rule. Anonymous. Undated. "Field Reference Handbook for Service Foresters" U.S.F.S. Northeastern Area, State and Private Forestry, Upper Darby, Pennsylvania.

Some Michigan mills buy pulpwood by the cord; other mills buy by weight. Sale by volume scale (cord) is more common, although weight sales (by the ton) are increasing. Table VIII may be used to estimate the volume in cords of standing trees. If an estimate of volume in board feet is already available, a rough estimate of the number of cords of wood may be obtained by multiplying the number of thousands of board feet times 2½. For example, if 15 thousand board feet is the estimated volume, 15 x 2½ = 37.5 is the estimated number of cords.

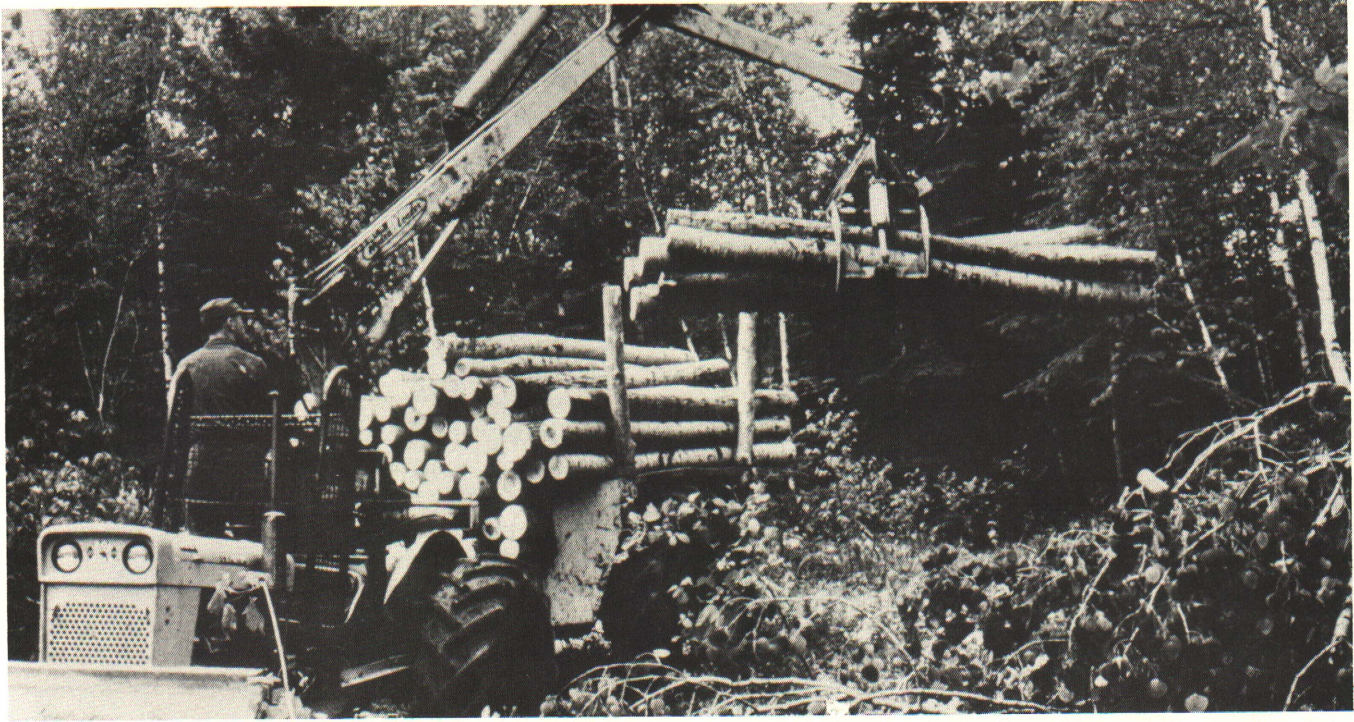
If the number of cords are known it is possible to obtain an estimate of the number of tons of wood present. Table IX provides an estimate of the weight, in tons, of a cord of wood for several Michigan tree species. Multiplying the value for the appropriate species by the number of cords of that species will provide a rough estimate of the number of tons of pulpwood. For example, there are approximately 2.3 tons in a standard cord of aspen. If we estimated that the harvest area contains approximately 37.5 cords, then it contains approximately 37.5 x 2.3 = 86.25 tons of aspen.

DBH	8-Foot Sticks						
	1	2	3	4	5	6	7
6	.018	.030	.043				
8	.032	.050	.070	.090			
10	.049	.074	.101	.132	.167	.200	.239
12	.070	.100	.138	.180	.225	.271	.324
14	.095	.134	.179	.233	.291	.351	.419
16	.120	.168	.222	.290	.361	.437	.521
18	.146	.208	.270	.350	.439	.531	.634
20	.186	.246	.320	.416	.522	.632	.755
22	.220	.294	.374	.494	.612	.739	.883

Table VIII. Volume in cords of standing pulpwood (including bark) to a variable top diameter inside bark of not less than 4.0 inches, by total height. Anonymous, Undated, "Field Reference Handbook for Service Foresters" U.S.F.S. Northeastern Area, State and Private Forestry, Upper Darby, Pennsylvania

Species	Approximate green weight per cord (lbs.)
Aspen	4650 - 2.3 tons
Balsam Fir	4800 - 2.4 tons
Dense Northern Hardwoods Oak, Hard Maple, Y. Birch, Beech)	5350 - 2.7 tons
Lighter Northern Hardwoods (W. Birch, Soft Maple)	4800 - 2.4 tons
Spruce	4350 - 2.2 tons

Table IX. Average weight of a cord of wood by species.



Pulpwood is commonly sold by the cord in Michigan, however, scaling by weight is increasing. A cord of aspen such as this will weigh approximately 4600 pounds.

Measuring Firewood

When measuring firewood several different techniques can be used. Firewood is commonly measured and sold by the cord or face cord. Technically a cord of firewood is the same size as a cord of pulpwood. However, occasionally the term cord and firewood cord are used interchangeably with the term face cord. The term face cord refers to a stack of wood 8 feet long, 4 feet high, and as wide as the length of the firewood. Another term often heard associated with firewood is a rick. Technically a rick is any stack of wood, but it is occasionally used interchangeably with face cord. Be careful when buying or selling firewood to make sure you know exactly how it is being measured.

*The name face cord is derived from the fact that the front or face of the stack of wood is the same dimension as the cord, 8 feet by 4 feet.

A rough estimate of the amount of firewood contained in standing trees can be made by determining the number of cords in the trees using Table VIII and then multiplying this value by the number of face cords in a cord. For example, if the firewood is cut into 16 inch lengths, multiply by 3; if into 20 inch lengths, multiply by 2½; if into 24 inch lengths, multiply by 2. However, it is important to note that this procedure will significantly underestimate the amount of firewood in trees with large crowns and when branches are used that are less than 4 inches in diameter.

Measuring Miscellaneous Products

Most other timber such as poles, posts, ties, and pilings are measured and sold by the individual piece. Posts are occasionally sold by the cord.

Determining the Total Amount of Timber Products to Be Sold

When high quality products such as veneer black walnut are being sold, each tree may be measured and its quality evaluated. However, when lower value timber such as pulpwood or low quality sawlogs, or very uniform material such as a pine plantation is being sold, small sample areas representative of the sale area are measured and these measurements are applied to the sale as opposed to measuring each tree. For example, if the timber from a 20 acre pine plantation were to be sold, 10 one-fifth-acre plots might be measured over the area and the resulting measurements (number of trees, volume, etc.) multiplied by 10² to provide an estimate for the entire 20 acres.

Defect

Many trees are not perfect and often contain defects which make them unsuitable for products such as veneer, sawlogs, poles, etc. Examples of defects include holes, hollow areas, lightning scars, frost cracks, crooks, forks, excessive branchiness, rot, and insect and disease damage. If the entire tree is unsuitable for the product being harvested, it will not be measured; if part

of the tree is unsuitable, that part of the tree will not be measured.

What Is The Timber Worth

Stumpage is a somewhat unusual commodity in that it has no exact or "going" price. Instead, the selling price is whatever the buyer and seller agree to and is influenced by many factors including tree species; number, size, and quality of trees or logs; distance of the trees or logs from the market, accessibility of the logging area and difficulty of the logging operation; current market conditions; the buyer's financial condition and how urgently he needs the trees or logs; and differences between buyers in their ability to use the tree or logs.

Due to these factors, the relationship between buyer and seller on each timber sale is unique. Different buyers may offer substantially different prices for the same timber depending on their own particular uses and markets. To receive the highest value, several potential buyers should be contacted when timber is for sale. A professional forester or timber buyer can estimate the minimum acceptance value or the expected value of a particular timber sale. However, in many cases some of the bids may be substantially greater than this estimate. As has been suggested, timber sales from private woodlands should be made by sealed bid with potential buyers informed about the sale. **DON'T BE TOO ANXIOUS TO ACCEPT THE FIRST OFFER.**

¹10 fifth-acre plots = 2 acres sampled.

$\frac{2 \text{ acres sampled}}{20 \text{ acres total}} = 1/10 \text{ area sampled}$

Advertising A Timber Sale and Selecting the Buyer

The most effective way of notifying potential buyers of your timber sale is to send them a timber sale notice. The names of reputable timber buyers operating in your area who would be interested in the type of timber you have to sell can be obtained from the nearest Michigan Department of Natural Resources Forestry Division office or from many of the county Cooperative Extension Service offices. A consulting forester will also have this information.

A timber sale notice should include the following:

1. The name and address of the seller.
2. The location of the sale—both the legal description and directions for locating the area.
3. A description of the trees to be sold.
4. The type of sale: sealed bid, lump-sum or sealed bid sale-by-unit.
5. The times when potential buyers can inspect the trees. Usually at least one month is allowed from the time notices are sent until a buyer is selected. If the seller or his representative has to be present for potential buyers to gain access or inspect the area, the times they will be available or how arrangements can be made to gain access, needs to be described.
6. The date, time, and place written sealed bids will be opened and the buyer selected.

7. Whether or not a deposit binding the offer must accompany the bid and, if so, the amount (usually 10%). The binding deposits of unsuccessful bidders are returned to them immediately after the buyer is selected. The deposit of the successful bidder may not be refunded should he later decide to withdraw from the sale.
8. How payment is to be made. On lump-sum sales full payment (100%) prior to the start of any harvesting activity is desirable. When this is not possible, a definite time table for payment should be negotiated calling for specific payments (e.g. 25%, 50% etc.) at specified dates. On sale-by-unit sales, a definite cutting and payment time table needs to be negotiated with the buyer and the sellers intent to do this stated in the notice.
9. Any major conditions or limitations on the sale such as the time by which the trees must be harvested, restrictions on access to the area, time, or conditions when loggers cannot operate (e.g. when area is excessively wet), etc. Note that excessive restrictions on buyers may cause a reduced bid or a loss of interest in the sale.
10. The requirement of a performance bond. A performance bond is an amount of money over and above

the sale price (usually 10% of the sale price) posted by the buyer and held in escrow by the seller. Its purpose is to assure that the buyer abides by and fulfills all the requirements of the contract. Performance bonds should be promptly returned at the completion of a properly executed harvested.

On the date and at the time and place specified, open the bids and select the buyer. The highest bidder is selected unless there is some reason to exclude that particular buyer. Exercise caution in selecting new operators or operators who have not previously logged in that area. A professional forester may offer advice as to the desirability of selecting a particular buyer on an individual sale. Most buyers perform satisfactorily when all of the trees are to be cut on an area, but only the more experienced and careful should be selected for timber stand improvement or a selection harvest where valuable trees will be left standing.

If you desire additional advertising for a timber sale, place a brief advertisement in the newspaper directing interested buyers to contact you for a complete description of the sale. This may be a particularly useful method when the main product anticipated from your harvest is firewood. Some firewood cutters do not cut other products and may not appear on a list of local buyers and loggers.

Entering Into A Contract With the Buyer

To reduce the possibility of misunderstandings and disagreements, a written contract between the buyer and seller is desirable. This need not be a complicated document but it should indicate what the owner and the buyer have agreed to with respect to the sale. It provides each party with legal protection that the other will abide by the terms of the sale.

Such a contract should contain (but is not limited to):

1. The names of the parties entering into the contract.
2. A description of exactly what is being sold. If all of the trees on an area are being cut, a legal description of the area plus a statement of how boundaries are marked should be sufficient. If individual trees are to be removed from a stand, exactly how they are marked should be described.
3. The value of the sale and a statement of when and how payment is to be made.
4. If sale-by-unit sale, a statement as to who is responsible for scaling and how often and where it will be done (e.g. in the woods, roadside, or at the mill).
5. Limitations or restrictions placed on buyer. These might include (but are not limited to) -
 - A. Deadline for completing cutting; usually done with a statement similar to the following: Unless an extension of time is granted, all timber covered by this contract shall be cut and removed from the property on or before _____, 19____. Occasionally the following is added in lump-sum sales: Ownership of any timber not cut and removed on or before _____, 19____ reverts to the seller unless otherwise specified.
 - B. Points of entrance or exit to the property.



Appropriate equipment is necessary when large amounts of timber are to be harvested. A small bulldozer is well suited for constructing logging trails and skidding logs.

- C. Road location, construction, and repair after logging.
 - D. Location and repair of log yarding or decking areas.
 - E. Buyer's liability for damage to crops or property or excessive damage to trees designated to remain after the harvest.
 - F. Buyer's responsibility to properly clean up trash, and other debris resulting from his activities.
 - G. Buyer's responsibility to remove logging debris from roads, streams, fields, and neighboring property.
6. A statement that the buyer has adequate insurance for and assumes liability for the safety and actions of his employees while they are engaged in any activity associated with the timber sale and harvest operation.
7. A statement that the buyer will abide by all state and federal laws and requirements pertaining to employer-employee relationships and the operation of the logging operation such as the Fair Labor Standards Act, workman's compensation, social security, federal and state income tax, and the Occupational Safety and Health Act.
8. The signing of the contract should be witnessed.
- On large, high value, or complex timber sales you may wish to consult an attorney in preparing a timber sales contract.

Inspecting the Harvesting Operation

If possible, the landowner should request to be informed several days before cutting begins so he or his representative can be present on the harvest area the first day. This will provide an opportunity to discuss the operation with the buyer or his representative on the site. This is also a good time to clarify points of agreement and to have some input on things not outlined in the contract.

Once the timber harvest begins, frequently visit the area to make sure that the harvest is proceeding according to the terms of the contract and to discuss questions that might arise. This will also allow the landowner to

become more familiar with timber harvesting operations which may be useful in future timber sales.

In checking the harvest operation, use good judgment and discretion. Unless a flagrant violation of the contract is discovered, a simple suggestion to the buyer will usually solve the problem. Deal directly with the buyer or designated representative. Do not complain or make suggestions to other individuals on the job.

When the job is completed and all provisions of the contract have been fulfilled, write a letter releasing the buyer from the contract and return the performance bond if one has been posted.

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