



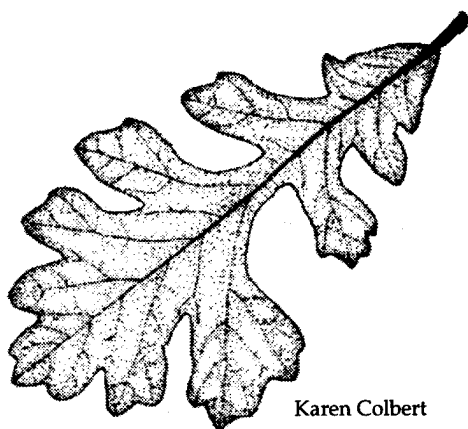
ILLINOIS FOREST MANAGEMENT

A Biannual Newsletter for Illinois Landowners

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Karen Colbert

Illinois Forest Management Newsletter is produced by the University of Illinois Department of Natural Resources and Environmental Sciences and the Cooperative Extension Service. Our newsletter features information from many sources to help you make informed decisions concerning your woodland resources. We encourage your questions and comments which we will share with our readers as space permits. Direct your inquiries to: Editor, IFM Newsletter, W-503 Turner Hall, 1102 S. Goodwin Ave. Urbana, IL 61801.

HOW TO MEASURE TREES TO DETERMINE THEIR BOARD-FOOT VOLUME AND VALUE

We frequently receive calls from landowners who have been approached by a buyer who has expressed interest in their timber. The first question posed in the conversation normally is..."How do I know if I have been offered a fair price?"...and is followed by..."How do I know what my timber is worth?" Obviously there is no way of answering the first part of the question without walking the timber, making some observations, and taking some measurements. And even then, what is a fair offer to one person may be totally out of line to another. A buyer may be making a genuinely fair offer based on his ability to market the timber he buys. Another buyer might come along with a totally different set of markets and be able to make the first buyer look like an absolute crook in the eyes of the landowner. Who made the fair offer? Most likely both did, but their ability to market the timber reflects what they could afford to pay for it. The following example emphasizes this point. A recent sealed bid sale in Illinois brought bids in the range of \$32,000 to \$123,000. Most of the bids were grouped toward the bottom of this range. It's probably not hard to guess who the landowner sold to, and in fact, most of the unsuccessful timber buyers wanted to know how the successful bidder could afford to pay that much for the timber. As it turned out he had a veneer market for the large volume of sycamore logs that the others did not have.

Our suggestion to landowners who know little about their timber or how to market it is not to get in a hurry and give



serious thought to hiring a forester to represent their interest. Nationwide less than 10% of the timber sold involves a professional forester. In Illinois, this figure is probably closer to 5%. The more you know about your timber, the better prepared you will be deal with unsolicited offers that come your way. You may be pleasantly surprised to find that something you considered to be of minimal value may, in fact, be worth quite a bit, and with a little management could be worth considerably more in the future.

To answer the second part of the question..."How do I know what my timber is worth?"...you could hire a consulting forester to appraise your timber or you could learn how to measure and evaluate the timber yourself. This article presents the basics on tree measurement for landowners who want to learn more about the value of their timber.

The two measurements used to estimate the volume of a tree or log are diameter and height or length. Determination of the volume of wood in a tree is surprisingly complicated. The main stem (bole), for one thing, does not fit any standard geometric form. However, volume tables have been developed that ease the cumbersome task of volume computation.

Taking tree measurements requires the use of some simple instruments which can be purchased or made. If you decide

to order the equipment described below, supply sources include:

Ben Meadows Company
3589 Broad St.
P.O. Box 80549
Atlanta, GA 30366-9821
1-800-241-6401

or
Forestry Suppliers, Inc.
205 West Rankin St.
P.O. Box 8397
Jackson, MS 39284-8397
1-800-647-5368

or
International Reforestation Suppliers
P.O. Box 4195
Pineville, LA 71361
1-800-321-1037

All have catalogs available which you can request.

Diameter Measurement

The diameter of the exposed end of a log is easily measured using a ruler or carpenter's tape. A standing tree presents a problem. The standard point of measure for tree diameter is 4 1/2 feet above the ground (above the ground on the uphill side if the tree is on a slope). This is called diameter breast high, and is usually abbreviated as "DBH."

Diameter tape

A diameter tape can be used to measure a tree's diameter. The tape is calibrated to read the tree's diameter by measuring its circumference or distance around its trunk. If used correctly, this is a very accurate measuring device and the tree's diameter can be read to the nearest tenth of an inch.

Diameter tapes cost about \$20 to \$50 each. If you wish, you may use a regular cloth measuring tape to measure around the tree and divide the reading by 3.14 to obtain the diameter. Measuring DBH to the nearest even inch (12, 14, 16, etc.) is adequate for the forest measurements described in this article. A 12-inch tree has a DBH between 11.1 and 13.0 inches, a 14-inch tree between 13.1 and 15.0 inches, etc.

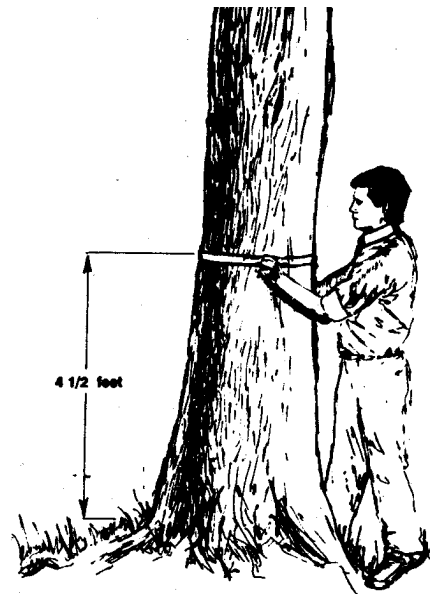
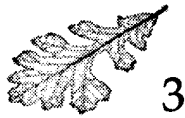


Figure 1. Measuring tree diameter with a diameter tape.



There are certain rules one should remember when using a diameter tape. These are:

Be certain DBH is measured at 4 1/2 feet above the ground on the uphill side. If a tree forks below the measuring point, measure it as two trees. If it forks above the measuring point, measure it as one tree (Figure 2).

Do not let the tape sag-it must be horizontal around the tree (Figure 3).

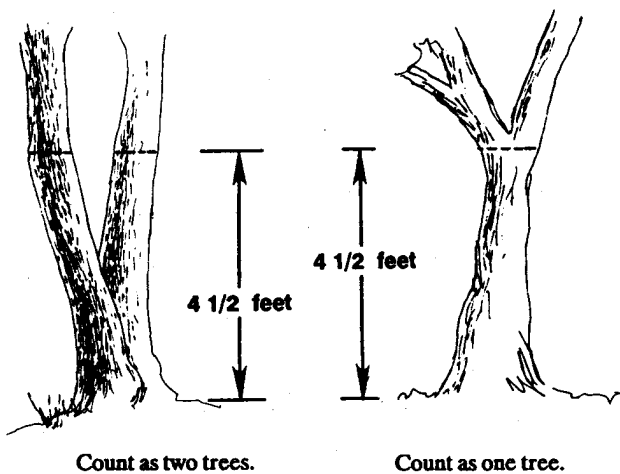


Figure 2. Where to measure diameter of a forked tree.

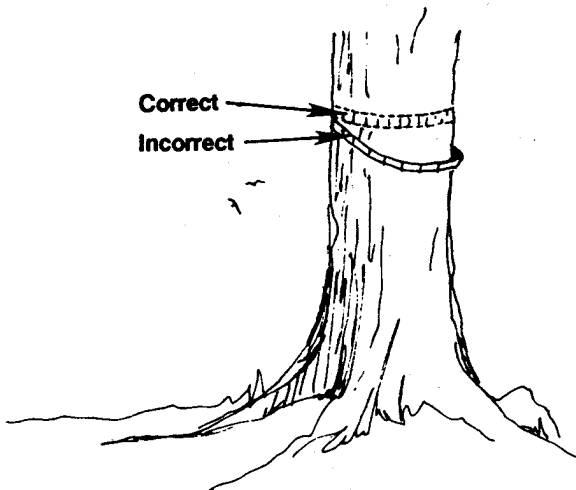


Figure 3. Correct and incorrect use of the diameter tape.

The Tree/Log Scale Stick

A rather ingenious instrument, the tree/log scale stick, speeds the process of DBH measurements. It is not as accurate as the diameter tape, but if used with reasonable care it is adequate for timber inventory work. Tree/log scale sticks cost around \$10 and usually include the Merritt hypsometer used for estimating tree heights (described later).

A purchased scale stick may not work for everyone since most are calibrated for use at a 25 inch distance (reach) from the eye. If your fully extend reach is less than 25 inches, the measurements you take with a purchased scale stick will be wrong. A scale stick can be easily constructed to fit any reach using the following formula:

$$I = \sqrt{\frac{ED^2}{E + D}}$$

where:

I = distance in inches from zero end of the stick to scale graduation,

E = distance in inches from eye to the stick (your reach distance, which for many people is 25 inches), and

D = tree's diameter in inches.

A strip of wood about 1/4-inch thick, 1 inch wide, and 27 inches long can be used to fashion a scale stick. Use the formula above to mark off the DBH values on the stick. For example, if your reach is 23 inches, the diameter markings in Table 1 (next page) would be made on the stick as shown in Figure 4 below.

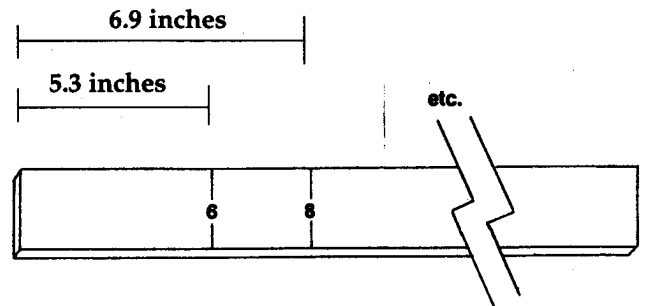


Figure 4. Marking a scale stick for diameter.

Table 1. Distances to mark on a scale stick for DBH readings
 (Note: for a person with a 23 inch reach)

Diameter	Distance from Zero end of the stick in inches
2	1.9
4	3.7
6	5.3
8	6.9
10	8.3
12	9.7
14	11.0
16	12.3
18	13.5
20	14.6
22	15.7
24	16.8
26	17.8
28	18.8
30	19.8
32	20.7
34	21.6
36	22.5
38	23.3
40	24.2

of your reach (the eye-to-stick distance you used to calibrated your stick). Purchased scale sticks are normally calibrated for a 25 inch reach.

2. Look directly at the center of the trunk. Without moving your head, shift your eyes to the left side of the tree trunk and line the zero end of the scale stick up with the left edge of the tree.

3. Without moving your head, shift your eyes to the right side of the tree and observe where the tree's right side intercepts the stick. This is the diameter measurement.

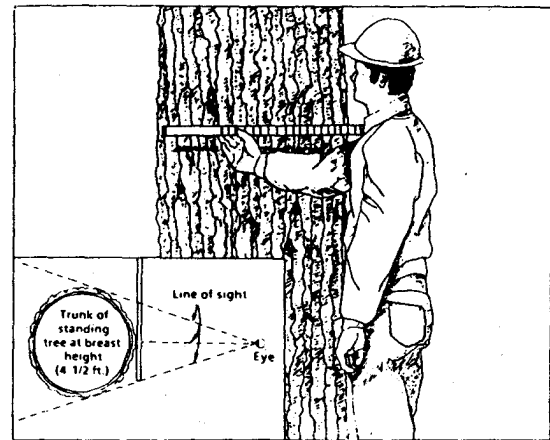


Figure 5. How to use the scale stick to measure diameter.

If you do not have a measuring tape marked in tenths of inches, the readings can be changed to 1 / 16" by the relation:

$$\text{measurement in } 1/16'' \text{ units} = \frac{\text{measurement in tenths}}{0.063}$$

For the 12-inch DBH mark, the distance from the zero end of the stick is 9.7 inches, or 9 11/16 inches.

Here's how to use the scale stick to determine the tree's diameter (refer to Figures 5 and 6). If you are using a purchased scale stick that has both tree and log scales on it, make sure you use the tree scale for both the diameter and height measurements:

1. Determine where 4 1/2 feet above ground hits you. Face the tree and center yourself on its trunk. Move up against the tree to determine where the 4 1/2 foot mark is on the tree's trunk. Hold the scale stick horizontally against the tree on the 4 1/2 foot mark and back away from the tree the length

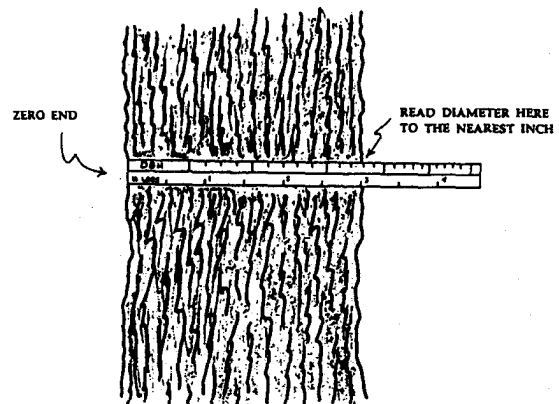


Figure 6. Reading the diameter from the stick.



4. Because trees are not round, it is good practice to take another diameter measurement one-fourth of the way around the trunk (90 degrees to your first measurement). Average the two measurements to establish the tree's diameter.

The second measurement that must be taken to determine the volume of wood in a tree is its height measurement. For simplicity sake, a tree's trunk or bole can be thought of as a series of cylinders stack on top of each other. These cylinders are logs of various lengths and diameters. The volume of each cylinder (log) is equal to the area of its circular end times the length of the cylinder. To compute a tree's boardfoot volume, you will have to determine how many usable logs it contains.

Measuring a Tree's Height

Sometimes you may want to determine a tree's total height, which is the height from the ground line to the tip of its crown. Here is a simple way to take this measurement. Cut a small stick about 4 feet long. Hold the stick upright (vertical) in your hand so that the length of the stick above your hand is equal to the distance from the stick to your eye (your reach). Back away from the tree on relatively level ground, or, if on a steep slope, on the same contour as the tree until the lines of sight over your fist and the top of the stick intersect the tree's base and top, respectively (see Figure 7). The horizontal distance to the tree, which can be determined quickly by pacing, as we shall discuss later, equals the height of the tree.

This works because of similar triangles. That is, the length of the stick above your fist equals your reach so the tree's height equals the horizontal distance to the tree. This method can also be used to determine merchantable height, which will be discussed later.

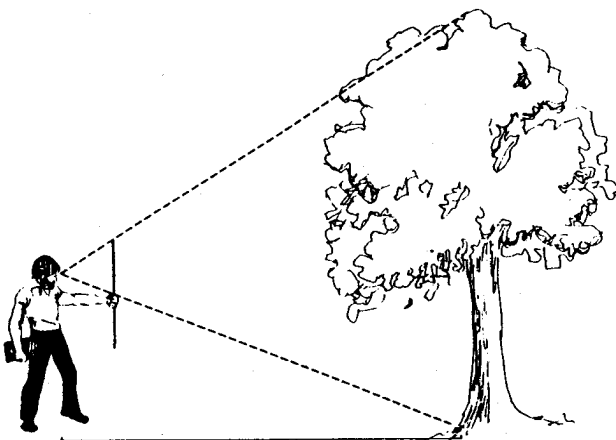
Constructing a Merritt Hypsometer

The Merritt hypsometer (a "hypsometer" is an instrument used for measuring height), is found on the back or the side of most purchased scale sticks and can easily be added to the one you make. It will prove useful to mark one side in 10-foot units and the other in 16-foot log and half-log (8 foot) units (refer to Figure 8 below). The following table facilitates this calibration:

Table 2. Distances to Mark on a Merritt Hypsometer

Reach in inches	Interval in inches to be marked on scale stick for heights of:	
	10 feet one log (16 feet)	
20	3.0	4.8
21	3.2	5.1
22	3.3	5.3
23	3.5	5.6
24	3.6	5.8
25	3.8	6.1
26	3.9	6.3
27	4.1	6.5
28	4.2	6.8
29	4.4	7.0
30	4.5	7.3

Based on the relation $I = RL/66$, where I interval in inches to be marked on the stick, R = reach in inches, and L = height unit. Note: 66 feet is the length of a surveyor's tape and is a convenient distance.



Distance equals tree height

Figure 7.

The stick might appear as follows:

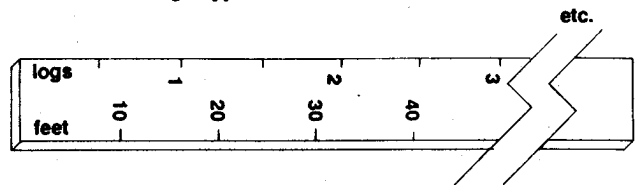


Figure 8. Markings on the Merritt hypsometer.



How the stick is used to measure height is explained later.

Measuring Distances

To determine tree height using the scale stick, a horizontal distance of 66 feet must be measured out from the base of the tree. This is done most accurately using a tape, but for many purposes pacing will suffice.

Taping

Fiberglass tapes are very durable and accurate for the distances you need to measure. A 50- or 100-foot tape is adequate and can be obtained for \$20 to \$30.

As we are interested in measuring horizontal distances, on steep slopes you must hold the tape high at one end (see Figure 9).

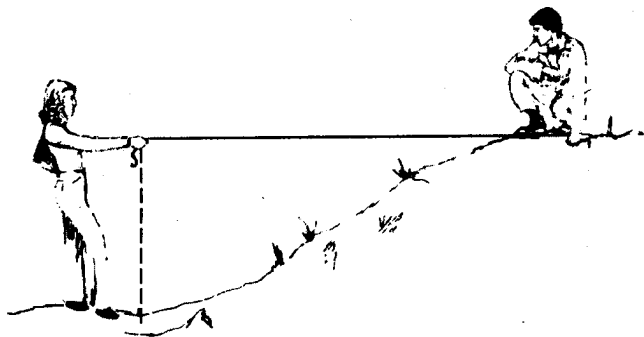


Figure 9. Using a tape to measure horizontal distance on a slope.

Pacing

Pacing is simple, fast, and accurate enough for most purposes. A pace is two steps, usually counted each time the right foot hits the ground. To determine how many feet you have per pace, measure with a tape a 66-foot distance (called a "chain") on level ground (perhaps in your lawn). (A surveyor's tape which is 66 feet long is convenient for English units; e.g., 10 square chains = 1 acre, 80 chains = 1 mile.)

Pace the 66-foot distance using a natural gait several times. You will find a consistent number of paces per chain. For example, if you have 13 paces per chain, then each pace is $66/13$ or about 5 feet. There are 80 chains in a mile, so you can easily calculate the number of paces per mile.

You may have to adjust your pace if walking is difficult because of the terrain. As a rule of thumb, if you are walking up or down a moderately steep slope, count each tenth pace twice to get an approximately correct horizontal distance (see Figure 10).



Figure 10. Pacing a distance on moderate slope. Count 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 ... etc.

On steep slopes, count each fifth pace twice (see Figure 11).

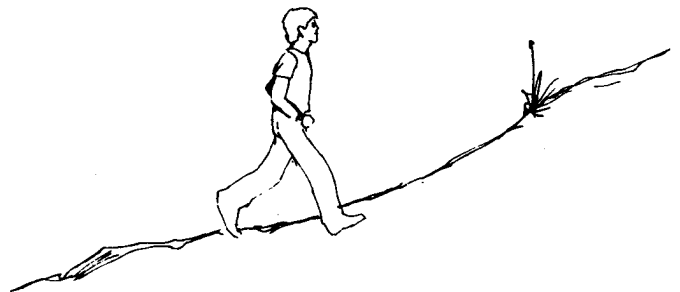


Figure 11. Pacing a distance on a steep slope. Count 1, 2, 3, 4, 5, 5, 6, 7, 8, 9, 10, 10, 11, 12, 13, 14, 15, 15, 16, 17, 18, 19, 20, 20 ... etc.



With a little practice, you will become confident in your pacing ability and will find it is a useful skill.

Determining Merchantable Height

To determine the board-foot volume of lumber contained in a tree, you will have to determine the tree's merchantable height. Merchantable height is different than total height. Here, merchantable implies the ability to cut lumber, veneer or other products from the logs contained in the tree. There are numerous factors which make a log unusable for lumber or veneer. One is the size of the log. For economic reasons, mills that harvest sawtimber for lumber generally will not accept logs smaller than 10 inches in diameter (inside the bark) at the small end of the log.

The major factor which influences merchantable height is tree form. The first major fork in the tree is a good example. The diameter of the trunk (log) just below the fork may well exceed 10 inches, but the log(s) above the fork generally becomes quite limby and produce lower quality lumber. Large crooks, bends, or sweep in the trunk can also make this portion a cull or unusable for lumber. Noticeable swellings or decayed limbs or holes are also tell-tale signs that the inside of the trunk contains rot and would not produce sound lumber. These factors are known as defect.

In summary, merchantable height is controlled by a diameter limit in the upper part of the tree or by some defect occurring on the trunk which renders the wood above unsuitable for conversion to products. Making this determination sounds difficult, but with a little practice you can quickly assess where the merchantable height is on each tree.

Using the Merritt Hypsometer to Determine Merchantable Height

The Merritt hypsometer is used to determine merchantable height in 16-foot logs. Half-logs are 8 feet in length. You calibrated your stick to read log heights when you stand 66 feet away from the base of the tree. You'll need a 50- or 100-foot tape or be able to pace the distance accurately (refer to Figures 12 and 13).

1. Begin by observing the tree on all sides for outward signs of defect. Decide where merchantable height will be measured.

2. Move 66 feet away from the tree in a direction that will give you an unobstructed view of the merchantable height point on the trunk and the base of the tree. This may be difficult in a woodland with dense undergrowth. You should pay particular attention that you pace or measure the 66-foot distance along the contour so that you remain at the same level as the base of the tree. Standing above or below the base of the tree on a hill rather than along the contour can lead to wrong height measurements.

3. Prior to moving away from the tree, lean a clipboard with an attached piece of white notebook paper up against the base of the tree. The white paper will help give you a target when sighting the tree's base from 66 feet.

4. Once you reach 66 feet, turn and face the tree. Hold the stick away from you at your reach distance. Make sure the Merritt hypsometer side is facing you. It is important that the stick be held vertical. Allowing the stick to lean toward or away from you can cause measurement errors. Hold the stick so the base or zero end lines up with the top of the clipboard. Height measurements are always made with a one-foot stump height allowance. The clipboard represents this stump height allowance. Generally, loggers will not cut the tree flush with the ground and normally leave a stump approximately one foot high or less. Stumps higher than one foot indicate a waste of wood and careless cutting practices.

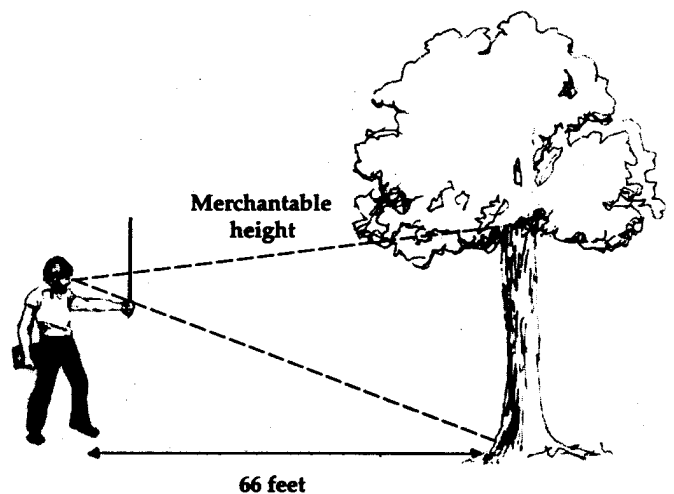


Figure 12. Measuring merchantable height with the Merritt hypsometer.

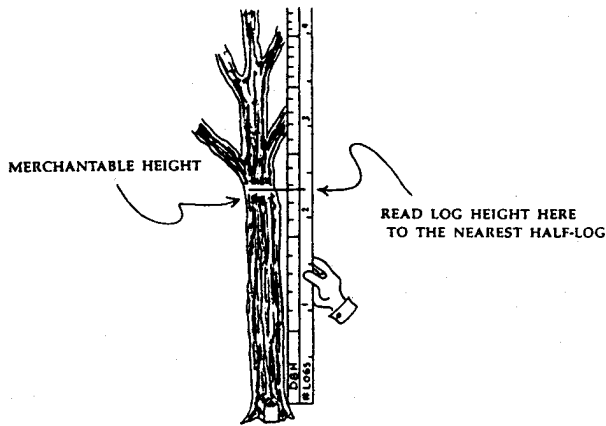


Figure 13. Reading merchantable height on the scale stick

5. Without moving your head, shift your eyes up to the point on the trunk where you've determined merchantable height will be measured. Observe where this point intercepts the stick. Read the number of 16-foot logs directly from the stick. Merchantable height should be measured to nearest half-log.

With these two measurements, diameter and log height, you can determine the board-foot volume of the tree using the volume table included in this newsletter. A discussion on how to use the volume table is presented later.

Board Feet

A board-foot is a unit of measure common to the United States. It is simply the amount of wood in a piece measuring 12 inches square and one inch thick.

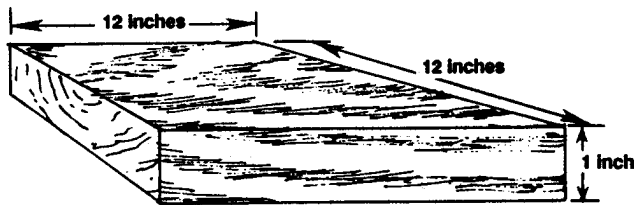


Figure 14. One Board-Foot of Wood.

Thus, a board-foot equals $1 \times 12 \times 12 = 144$ cubic inches. This fact makes it easy to calculate the number of board feet in lumber of any size. For example, a 2"x4" which is 8 feet long has

$$\frac{(8 \text{ ft.}) \times (12 \text{ in. /ft.}) \times (2) \times (4)}{144} = 5.3 \text{ board feet}$$

Perhaps an easier method is to multiply the length of the piece in feet times width and thickness in inches, and divide the answer by 12.

$$\frac{(8 \text{ ft.}) \times (2) \times (4)}{12} = 5.3 \text{ board feet}$$

The board-foot measure actually indicates the size of the board before it is planed. As woodworkers and builders recognize, a board sold as 10 inches wide and 1 inch thick is actually less than those dimensions due to the processing that occurred after it was sawed from the log.

Volume Table

A volume table reveals the volume of wood contained in trees of different diameters and log lengths. There are many different types of volume tables used to compute wood volume in trees, however, we will concern ourselves only with the volume table base on the Doyle Log Rule since this is the rule used by foresters and timbers buyers in Illinois to scale timber and logs (refer to the volume table on the next page).

A volume table is easy to use. Read along the left side of the table to find the correct diameter and across the top to find the number of 16-foot logs. The number where the column and row intersect is the board-foot volume of the tree.

This volume estimate assumes the logs were 100 percent sound. You must make an allowance for the defect you have in your woodland. It is unlikely for a young, vigorous woodland to have much rot and decay in the trees, whereas an over-mature woodland may have many large trees with hollow centers. A forester can help you learn how to assess the amount of defect in your woodland.

Once you have adjusted your board-foot volume figure for defect, you can begin to make a determination of what the trees in your woodland might be worth. You will need to know whether the trees (logs) are veneer or sawtimber grade.



Gross volume of tree, Doyle Log Rule, Form Class 78.

Merchantable height in number of 16-foot logs

	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
In.	Volume in board feet										
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	195	225	256	276	297				
20	135	180	225	261	297	322	346	364	383		
21	154	207	260	302	344	374	404	428	452		
22	174	234	295	344	392	427	462	492	521		
23	195	264	332	388	444	483	522	558	594		
24	216	293	370	433	496	539	582	625	668		
25	241	328	414	486	558	609	660	709	758		
26	266	362	459	539	619	678	737	793	849		
27	292	398	505	594	684	749	814	877	940		
28	317	434	551	651	750	820	890	961	1032	1096	1161
29	346	475	604	714	824	902	980	1061	1142	1218	1294
30	376	517	658	778	898	984	1069	1160	1251	1339	1427
31	408	562	717	850	983	1080	1176	1273	1370	1470	1570
32	441	608	776	922	1068	1176	1283	1386	1488	1600	1712
33	474	654	835	994	1152	1268	1385	1497	1609	1734	1858
34	506	700	894	1064	1235	1361	1487	1608	1730	1866	2003
35	544	754	964	1149	1334	1472	1610	1743	1876	2020	2163
36	581	808	1035	1234	1434	1583	1732	1878	2023	2173	2323
37	618	860	1102	1318	1534	1694	1854	2013	2172	2332	2492
38	655	912	1170	1402	1635	1805	1975	2148	2322	2491	2660
39	698	974	1250	1498	1746	1932	2118	2298	2479	2662	2844
40	740	1035	1330	1594	1858	2059	2260	2448	2636	2832	3027

Source: Mesavage and Girard, 1956. Tables for Estimating Board-foot Volume of Timber, U.S. Department of Agriculture, U.S. Forest Service.

There is a dramatic difference in the price per board foot between the two. Again, you meet with your forester and he/she can point out the characteristics that distinguish a veneer quality tree (log) from one that will be harvested for lumber (sawtimber). With practice, you will be able to make this determination on the trees on your property. In most cases, the majority of your timber will be harvested for saw

timber. It is a rare case where most of the timber is veneer quality. Knowing how to distinguish the difference, however, will result in higher returns for you should you decide to sell some of your timber.

Let's assume you have measured a white oak tree and determined it has a volume of 433 board-feet (24 inch diameter



and 2 1/2, 16-foot logs with no defect).

On page 11-12 of this newsletter you will find the most recent Illinois Timber Prices reporting sheet. Notice the state is divided up into three zones. Find the zone appropriate for your woodland. The individual species prices quoted on the first page are state-wide average sawtimber prices per thousand board-feet of lumber. On page 12 are price ranges paid for sawtimber by species within each zone. Sawtimber refers to logs that are cut into lumber or timbers. Stumpage price is the amount paid for standing timber, normally what you would receive. F.O.B. price is what you would receive for the logs delivered to the mill.

In the above example, the 433 board-foot white oak would be worth \$86.60 (stumpage) based on state-wide averages for sawtimber. This figure should be used only as a guide. As pointed out in the reporting sheet, general market and economic conditions are the major price-determining factor. If you have only one tree to sell, it is highly unlikely you would attract any interest from timber buyers, particularly if the tree is growing in or near a residence.

Notice the increase in price paid for face veneer. Face veneer is logs cut into thin sheets of veneer used mostly in furniture manufacturing. If the white oak in the example had one, 16-foot veneer butt log, the tree could be worth \$151.90 to \$410.60 based on the statewide price range for white oak face veneer.

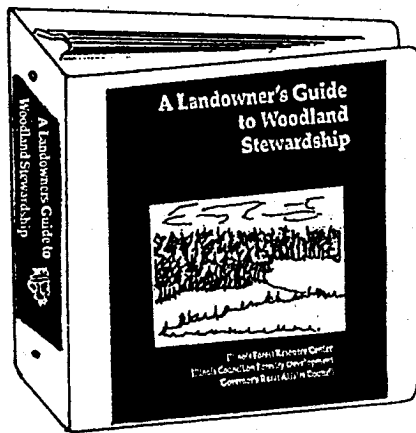
If you're considering a timber sale in the not-to-distant future, we strongly suggest you have a professional forester assist you. Contact the newsletter editor for more information about Illinois foresters and the services they provide. Also, if you decide to purchase a scale stick, make sure it is one that has the Doyle Rule printed on it.

This article and illustrations were adapted, in part, from **How to Estimate the Value of Timber in Your Woodlot** by Harry V. Wiant, Jr., Circular 148. West Virginia University Agricultural and Forestry Experiment Station, Morgantown, WV; 1989.

Selected illustrations also came from **Timber Management For Small Woodlands**, Goff, Gary R., et al. Information Bulletin 180. Cornell Cooperative Extension Service, Ithaca, NY.

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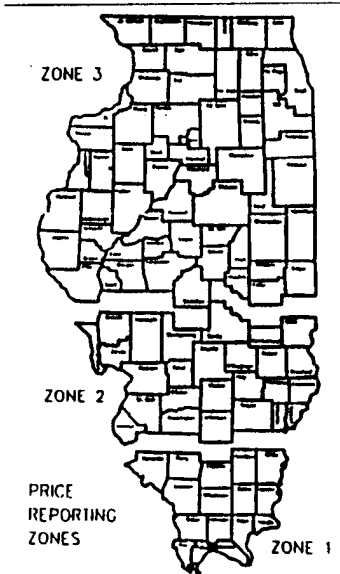
AGRICULTURAL
STATISTICS
SERVICE

ILLINOIS TIMBER PRICES

DIVISION OF FOREST RESOURCES
600 North Grand Avenue West
Springfield, Illinois 62706
Phone: (217) 782-2361



June 10, 1997



PRICES PAID ILLINOIS TIMBER PRODUCERS NOVEMBER 1996 THROUGH FEBRUARY 1997

Winter sawtimber prices paid to Illinois timber growers showed no clear upward or downward trend for F.O.B. Mill and stumpage compared to both the previous summer and winter. Of the timber buyers reporting volume of their 1996 operations, 38% indicated their volume was 500 thousand board feet or more.

This report is prepared by the Illinois Agricultural Statistics Service in cooperation with the Illinois Division of Forest Resources. Unless otherwise indicated, prices shown in this report are prices reported by licensed timber buyers. The cooperation of those timber buyers who participated in the survey is greatly appreciated.

Illinois is divided into three price-reporting zones, based on timber resources, similarity, utilization standards and practices and soil types. Zone 1 is the Southern Unit; Zone 2, the Claypan Unit; and Zone 3, the Prairie Unit. Ranges of prices for each zone are shown on the back of this report.

This report can be used only as a general guide for determining market value of timber. General market and economic conditions are the major price-determining factors. Certain local considerations such as accessibility, site and terrain, distance to market, size of sale, and tree size and quality also affect the price paid. For technical, marketing or management assistance, contact your local State Forester, or the Division of Forest Resources, Illinois Department of Natural Resources, 600 North Grand Avenue, West, Springfield, Illinois 62706.

AVERAGE PRICES FOR STUMPAGE AND F.O.B. IN SELECTED PERIODS SAWTIMBER - \$ PER M BD. FT.

SPECIES	November 1995-February 1996		May 1996-August 1996		November 1996 - February 1997	
	Stumpage	F.O.B. Mill	Stumpage	F.O.B. Mill	Stumpage	F.O.B. Mill
Ash	185	330	170	340	170	300
Basswood	105	200	100	230	95	190
Beech	60	170	80	180	70	180
Cottonwood	45	145	50	150	40	140
Sweet Gum	70	150	85	170	85	170
Elm & Hackberry	65	145	60	150	60	140
Hickory	70	175	80	160	65	170
Soft Maple	85	210	95	210	95	170
Sugar Maple	115	260	120	190	140	300
Black Oak	160	330	160	270	150	250
Pin Oak	65	160	65	160	60	160
Red Oak	235	395	230	390	220	385
White Oak	235	390	220	390	200	340
Yellow Poplar	130	250	120	350	120	280
Sycamore	60	160	70	150	60	160
Black Walnut	360	550	320	510	330	510
Woods Run Bottomland	90	200	85	180	80	180
Woods Run Upland	140	310	110	300	140	270
FACE VENEER - \$ PER M BD. FT.						
Red Oak	595	980	600	950	510	730
White Oak	950	1,610	1,000	1,800	1,100	1,900
Walnut	1,650	2,010	1,600	2,000	1,490	2,100
COOPERAGE - \$ PER M BD. FT.						
White Oak	240	415	280	600	250	430
UNPEELED PULPWOOD - \$ PER TON						
Ton	2.00	17.95	1.50	16.80	2.10	17.25



Timber prices
November 1996-February 1997
June 10, 1997

MOST COMMONLY REPORTED PRICES PAID ILLINOIS TIMBER PRODUCERS

PRODUCT	UNIT	November 1996 -		February 1997		Zone 3	
		Zone 1	F.O.B. Mill	Zone 2	F.O.B. Mill	Stumpage	F.O.B. Mill
1. Sawtimber	Dollars						
Ash	M bd. ft.	100-250	200 - 400	100-250	200-400	90-250	200 - 400
Basswood	M bd. ft.	50-120	140-210	50 - 120	140-220	60-120	140-220
Beech	M bd. ft.	70- 90	150 - 200	40- 80	150-200	60-100	150-200
Cottonwood	M bd. ft.	30- 60	130-150	20- 80	120-140	20- 60	120-140
Sweet Gum	M bd. ft.	70-100	120-200	80-140	NA	70-100	120-200
Elm & Hackberry	M bd. ft.	30-100	120-140	40- 60	120- 180	25- 80	120-180
Hickory	M bd. ft.	60- 90	120- 180	50-100	120- 180	50 - 80	150-210
Soft maple	M bd. ft.	60-100	120-250	60-120	150-200	60-140	140-260
sugar Me*	M bd. ft.	100 -150	200 - 400	100-200	150-400	80-200	250-350
Black Oak	M bd. ft.	80 - 200	200 - 350	100-230	200-350	100-250	190-350
Pin Oak	M bd. ft.	30- 70	140- 170	30- 80	150- 180	50-100	150- 180
Red Oak	M bd. ft.	100-320	250 - 400	100-300	250-500	150-300	300-450
White Oak	M bd. ft.	160-300	250-450	150-300	250-550	150-300	300-450
Yellow Poplar	M bd. ft.	100 -150	230-300	100-140	230-300	80 -150	NA
Sycamore	M bd. ft.	30- 90	120-170	50- 70	130- 180	35- 80	120- 180
Black Walnut	M bd. ft.	200-400	400-600	200 - 350	400-550	200-400	450-650
Woods Run Bottomland	M bd. ft.	70-100	170-200	60-100	140-210	50-100	150- 200
Woods Run Upland	M bd. ft.	70-150	170-300	60-200	150-300	95-150	200 -300

STATEWIDE

		Stumpage	F.O.B. Mill
2. Face Veneer			
Red Oak	M bd. ft.	200- 800	400-1,000
White Oak	M bd. ft.	500-1,700	1,600 - 2,100
Walnut	M bd. ft.	800-1,800	1,400 - 4,000
3. Cooperage			
White Oak	M bd. ft.	150- 400	400- 500
4. Pulpwood			
Unpeeled	Ton	2.00- 4.00	16.50 - 20.00

LOG SCALES USED BY REPORTING BUYERS

VOLUME OF 1996 OPERATIONS

Scale	Percent Using	Size in (000) bd. ft.	Zone 1	Zone 2	Zone 3	All	
Doyle	100		%	%	%	%	
Scribner	0	1 -100	17	29	46	31	
International	0						
CUSTOM SAWING BY THOSE REPORTING		100 -500	25	36	31	31	
Region	Percent Reporting	Rates Reported	500 - 1,000	25	-	-	10
		\$/M bd. ft.					
Zone 1	20	100 - 180	1,000 - 3,000	17	28	8	20
Zone 2	14	100 -150					
Zone 3	13	100 - 200	3,000 +	16	7	15	8
ILLINOIS	47	100 -200					

Cooperage is the manufacture of barrels. Face veneer is logs cut into thin sheets or "veneer" used mostly by furniture builders. Pulpwood is used in making paper, fiberboard, and similar products. M bd. ft. means thousand board feet. Sawtimber refers to logs that are cut into lumber or timbers. F.O.B. refers to the price paid for timber delivered to the mill.

MARKED TIMBER SALES - NOVEMBER 1996 - FEBRUARY 1997

STATEWIDE STUMPAGE*

Woods Run Upland \$119-\$356/M bd. ft.
Woods Run Bottomland Insufficient Data

*Prices supplied to District Foresters by seller, may include some veneer.

Jerry Clampet, State Statistician

Steve Peterson, Garry D. Kepley, Agricultural Statisticians

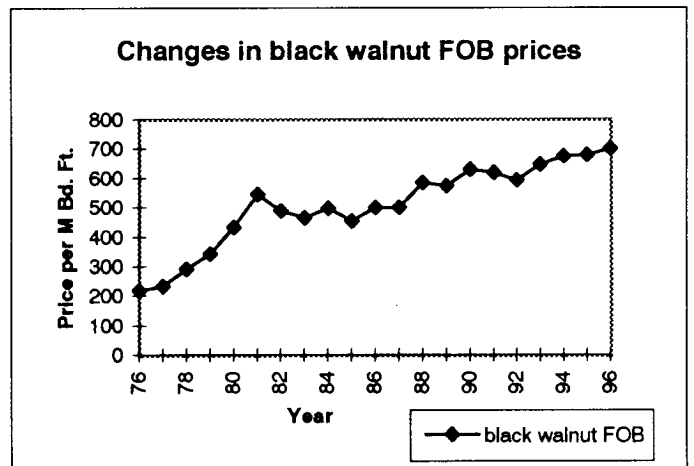
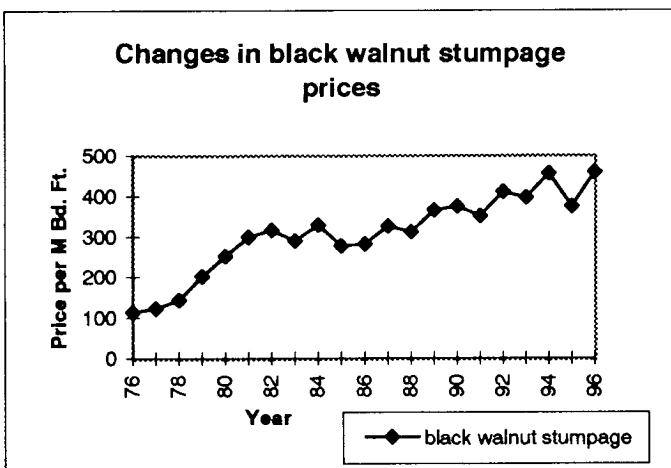
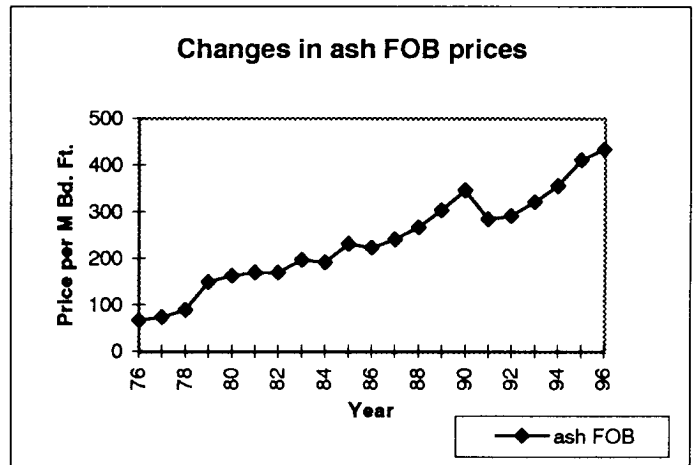
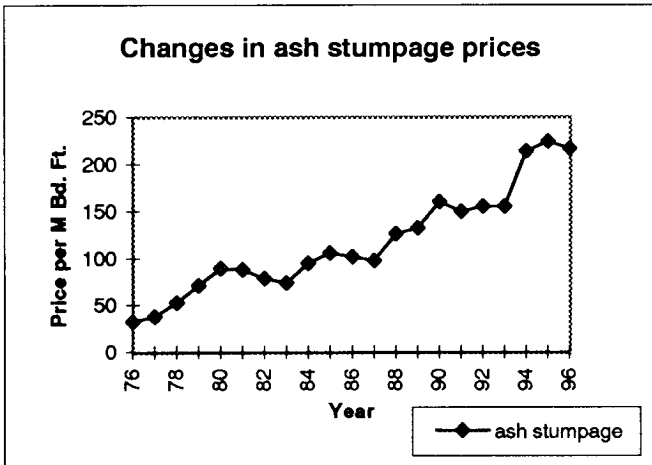
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ILLINOIS SAWTIMBER AND FACE VENEER PRICE TRENDS FOR SELECTED SPECIES-1976-1996

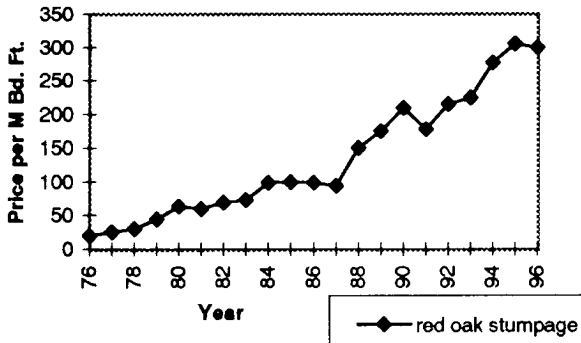
Illustrated on pages 13-15 are Illinois sawtimber and face veneer price trends for selected species for a 20 year period from 1976 to 1996 as reported in the Illinois Timber Prices reporting sheet. The prices reflect the price paid per 1,000 board feet (M. Bd. Ft.) and have been adjusted to 1982 dollar equivalents using the Producer Price Index. For sawtimber, ash, black walnut, red oak, white oak, and sugar maple prices are illustrated. Face veneer prices are for black walnut, red oak and white oak. Both stumpage and FOB prices are presented. Stumpage is the price paid for standing timber. FOB is the price paid for logs delivered to the mill. The prices reported in Illinois Timber Prices are statewide averages and are considered conservative.

Sawtimber Prices

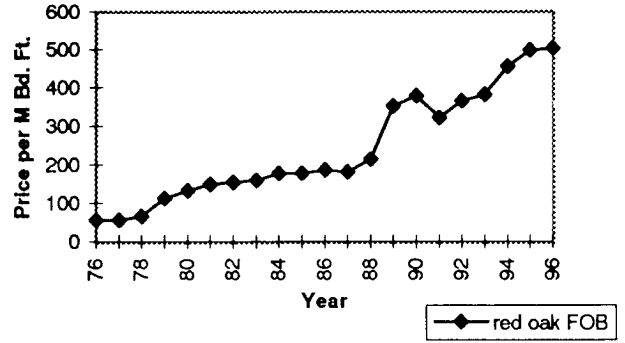




Changes in red oak stumpage prices



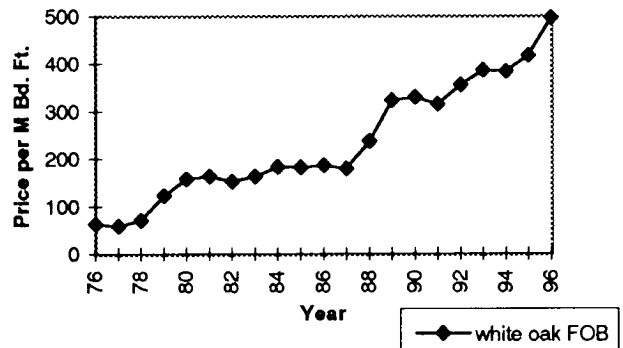
Changes in red oak FOB prices



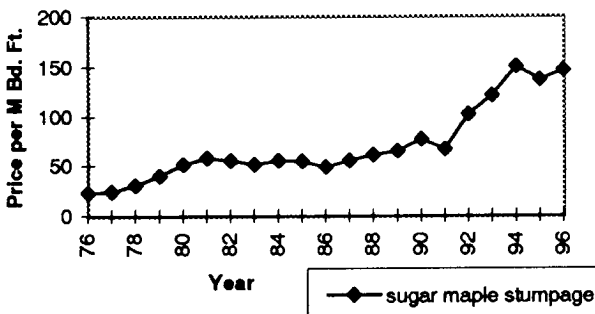
Changes in white oak stumpage prices



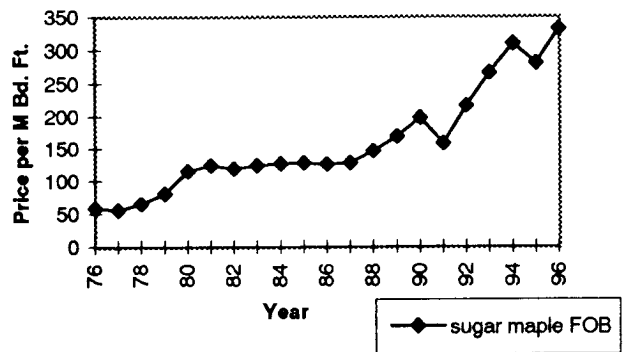
Changes in white oak FOB prices



Changes in sugar maple stumpage prices



Changes in sugar maple FOB prices





Face Veneer Prices

