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THE IMPACT OF CUTTING METHOD
ON NORTHERN HARDWOOD STUMPAGE PRICES

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Carl W. Ramm
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THE IMPACT OF CUTTING METHOD ON NORTHERN HARDWOOD STUMPAGE PRICES

By

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ABSTRACT

THE IMPACT OF CUTTING METHOD
ON NORTHERN HARDWOOD STUMPAGE PRICES

By

Paul J. Lewis

The impact of silvicultural cut method on northern hardwood stumpage prices was investigated. Timber sales from four National Forests in Michigan and Wisconsin were used to create a data base for the study. Using multiple regression techniques, a model of northern hardwood stumpage prices was developed for each National Forest. The results of the study indicate that stumpage prices are more sensitive to the species mix than to the harvesting method employed.

In memory of William H. Lewis.

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INTRODUCTION

PROBLEM DEFINITION

In the Great Lakes region, northern hardwoods are an important component of the forest resource. Six million of Michigan's 17.5 million acres of commercial forests are northern hardwoods. Placing an accurate monetary value on the timber is important in the timber selling process. If the timber is overpriced, it will go unsold. If it is undervalued, the seller loses money. Although much effort has been put into developing predictive models in recent years, some uncertainty still exists. One question which remains is how the method of cut affects the selling price of timber.

The primary goal of this study was to identify what impact, if any, the method of cut has on the stumpage value of northern hardwood timber. Land managers can use this information to help make management decisions and to more accurately predict the selling price of their timber. Since timber sales from four National Forests in Michigan and Wisconsin were to be used as the source of data, another problem that needed to be addressed was the feasibility of combining data from different regions.

LITERATURE REVIEW

The northern hardwoods group is composed of a number of

different species which grow in association in the Great Lakes Region. Northern hardwoods are most prevalent in Indiana, Michigan, Minnesota, Ohio, and Wisconsin. The species composition varies across the range but is typified by sugar maple (*Acer saccharum* Marsh.), yellow birch (*Betula alleghanensis* Britton), American beech (*Fagus grandifolia* Ehrh.), American basswood (*Tilia americana* L.) and eastern hemlock (*Tsuga canadensis* (L.) Carr.). Other species which have local importance are balsam fir (*Abies balsamea* (L.) Mill.), American elm (*Ulmus americanus* L.), black ash (*Fraxinus nigra* Marsh.), red maple (*Acer rubrum* L.), northern red oak (*Quercus rubra* L.), eastern white pine (*Pinus strobus* L.), white ash (*Fraxinus americana* L.) , and paper birch (*Betula papyrifera* Marsh.) (Tubbs *et al.* 1983). This diverse mix of species provides for many possibilities in management.

Several biological factors influence the selection of a silvicultural system will to harvest a stand of trees. The size of the trees, their age, their vigor, and the reproductive habits and shade tolerance of the desired species need to be considered. Other factors include the potential outbreak of insects or disease as well as the risk of fire (Burns 1983).

There are two general methods used for harvesting timber. Even-aged methods - clearcutting, shelterwood, seedtree - are used when most of the stand needs to be removed in the first cut. The difference in age between

trees in the regenerated stand usually does not exceed 20% of the rotation age (Burns 1983). Uneven-aged methods - individual tree selection, group selection, improvement cuts, commercial thinnings - target specific trees to be cut while leaving most of the stand intact. The percentage of the stand cut at any one time is usually no more than 20 to 30 % of the total stand basal area (Smith 1986).

The highest valued products removed from northern hardwood stands - sawtimber and veneer - come from stands which have closed canopies and vigorous competition. Unfortunately, land managers are often tempted to clearcut stands, either for quick profit or due to a lack of knowledge about viable alternatives. One common assumption is that timber sales with low volume per acre (characteristic of uneven-aged cuts) attract fewer bidders, and therefore lower the stumpage value of the timber.

Stumpage value is usually defined, and will be used here, as the value of timber standing on the stump. There have been numerous publications on the value of timber and how it can be derived. Guttenberg and Duerr (1949) and Duerr (1960) provided some of the earlier theoretical examinations of stumpage value with their concepts of conversion surplus and conversion value. Both measures are based on the difference between the end value of the products and the costs of producing the products. The difference is that the surplus measure accounts for only variable costs of production, while the value measure

includes both fixed and variable costs.

In practice, there are several factors which determine the amount a buyer is willing to pay for a particular stand of trees. They can be grouped into five broad categories: 1) general demand; 2) species present; 3) location of the sale; 4) site and sale characteristics; and 5) other factors.

General demand is influenced by final demands for end products such as paper and lumber, the general business cycle, and existing supplies. The value of and demand for different species varies greatly and affects the sales price. The location of the sale dictates which mills might be able to utilize the wood, how many buyers will compete for the sale, and the general price zones. The sale method, either sealed bid or negotiated bid, the cutting strategy used, total volume, the time of year, and the operability of the site are site/sale conditions which affect the final price. Other factors which might influence price include the landowner's need for money and their knowledge of timber values, the bargaining skills of both parties involved, scaling errors, and the efficiency of the various processes involved.

National Forest timber sales are unique in a number of ways. They are excellent study units because timber is scheduled for cutting regardless of market conditions, and because standardized procedures are used from sale to sale and forest to forest (Holley 1970). Also, the land manager

does not have to be overly concerned about making a large profit, therefore, biological factors can be given more consideration than in the private sector.

One drawback to National Forest Timber sales is that it may take several years to plan and carry out one sale. Before a sale is advertised, hearings are conducted and the public is given a chance to challenge the sale. Relatively few sales go unchallenged due to public concern about the environment and long-term productivity. Therefore, it is very important that each sale be carefully planned to reduce the chance of litigation. Silvicultural prescriptions must be completely justified in monetary and biological terms.

Since, the Forest Service is mandated to use a multiple-use approach in managing National Forests, many decisions on how to cut a stand are based not only the needs of the desired tree species, but also on things such as wildlife or recreational needs. Even though the benefits to wildlife or recreation can be valued, any reference to timber value in this study is to the financial value of the timber.

Inherent in the planning process is an accurate appraisal of the timber value. If the timber is priced too high, the sale will go unsold, and unsold sales waste time and money. Niccolucci (1989) found that between 1980 and 1985, approximately 20% of the timber offered for sale on National Forest lands went unsold. Huang and Buongiorno (1986) found similar results for the period of 1976 through

1980 on the Chequamegon National Forest in northern Wisconsin. On the other hand, the Forest Service by law can not sell timber below its fair market value (Buongiorno and Young 1984).

The Forest Service uses two basic approaches to determine the fair market value of timber: residual value and transaction evidence (Weiner 1981). The residual value theory holds that timber has no use other than for raw wood material (Holley 1970). Its residual value is therefore the end value minus costs. Weiner (1981) gives the general equation for stumpage value (S):

$$S = SP - (MC + LC + P\&R)$$

where SP is the product selling price, MC is the milling costs, LC is the logging cost, and P&R is profit and risk margin.

Residual value has been used by Hotvedt and Straka (1987) to analyze thinnings in southern pine plantations and by Darr (1973) to estimate stumpage value in the Pacific Northwest. This method requires predictions about end product use as well as the efficiency of the loggers and manufacturers. Many private companies are reluctant to provide information about their costs to outsiders. Costs can only be estimated, leading to a possible bias of the true stumpage value.

The other widely accepted method of timber appraisal, transaction evidence, relies on past sales to predict present stumpage value. This method is replacing the

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residual value method as the way to appraise timber on National Forest timber sales (McQuillan and Johnson-True 1988). The residual value method is more costly and time consuming, is very reliant on end product valuation, and may ignore the effect of competition that cause prices to deviate from the norm (Vasievich *et al.* 1988).

The general approach to timber valuation by transaction evidence is to first gather quantitative data from a number of timber sales with similar characteristics, and then to use multiple regression to fit a predictive model. Multiple regression can quickly identify the variables which most affect the value of timber (Smith 1979). The calculations are relatively simple, and goodness of fit statistics can be used to measure a model's accuracy and to set up confidence intervals.

Several researchers have used transaction evidence models to predict stumpage values of National Forest Timber sales. Usually, high bid price or total bid price is modeled as a function of sale characteristics. Anderson (1969, 1976a, 1976b) found that average stand diameter, the proportion of the sale in sawtimber, and the current wholesale price of #2 dimension lumber were the best predictors of stumpage value in the southern pine region. Holley (1970) found that the number of bidders, the total sale volume, the proportion of the sale with grade B or better logs, and the current wholesale price of #2 dimension lumber were most important in predicting southern pine

stumpage value.

Buongiorno and Young (1984) found individual species volume to be the most important factor in predicting total high bid of northern hardwood timber sales. In developing their model, they ignored sales which received less than two bids. Their assumption was that a minimum of two bids was necessary for the high bid to represent the true market value of the timber. Young (1983) had previously shown that all else being equal, sales with only one bid paid significantly less than sales which received at least two bids. Buongiorno and Young assumed that potential bidders are knowledgeable about their competitors, which may not be true. Shaffer (1985) pointed out that some bidders do not really want to buy the timber but make a courtesy bid for information or public relations.

None of the studies reviewed could directly estimate the effect of harvest method on stumpage value. In Montana, Jackson and McQuillan (1979) did model average stumpage price based on sale characteristics including the logging method and the reproduction method employed. However, citing a lack of information in the timber sale reports, they were able to use only imperfect approximations of several variables, such as percentage of the area tractor skidded for logging method and percentage of the area seedtree or clearcut for the reproduction method. They found that both of these variables significantly affected stumpage price. They also found tree size and average

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volume per acre to be important.

Transaction evidence models illustrate which variables are the most effective predictors of stumpage value in different regions. Southern forest sales and western forest sales are dominated by softwoods which are used for dimension lumber and plywood manufacturing. Tree size is the most consistent predictor of stumpage value because larger trees are used for veneer and as peeler logs, smaller trees for less valuable 2 x 4's. Northern hardwood sales are more diverse, and the species mix is the most important factor in predicting stumpage price because individual species vary greatly in value.

MATERIALS AND METHODS

THE CONCEPTUAL MODEL

The literature shows that it is feasible to predict a stand's stumpage value based on stand and sale characteristics. It was decided that National Forest timber sales would be used to supply the data for the study because of their availability and standard format.

Choosing the form of the model depends on the objectives of the researcher and the available data. Based on conclusions drawn from the literature, the decision was made to use a transaction evidence approach and multiple regression techniques to predict stumpage price.

Vasievich *et al.* (1988) gave a strategy for developing a transaction evidence model. The process involves adding variables or groups of variables to the equation until all important price determinants have been included.

The first decision is the choice of the dependent variable. Two possible choices are total sale price and average unit price. Both have drawbacks. Since total sale volume is a good predictor of total sale price, it may mask the effects of other variables. Average price per unit is more powerful, as it removes the effects of volume, but modelling average price generally produces low coefficients of determination (R^2).

There are five categories of price determinants which should be included as explanatory variables in any model of timber values. They are end product markets, effects of time, spatial effects, sale characteristics, and short-term supply, demand, and competition effects.

End product market variables include the estimated value of the products to be made from the timber. These variables are most important for single species or single product sales. Effects of time variables (i.e. the Producer Price Index for hardwood lumber) are used to remove trends from the data due to inflation or seasonal fluctuation. Spatial effect variables would be used to account for hauling distance and price zones. Sale characteristics include the sale size, individual species volume, log grade, and terrain.

Supply and demand variables explain volume available on the market at the time of sale and the amount of competition for the sale. Competition can not be known precisely in advance, but for this study that is not important. Since a descriptive rather than a predictive model was desired, information not known in advance could be used in the model. The complete list of possible explanatory variables suggested by Vasievich *et al.* (1988) is presented in Table 1.

It was decided that a measure of the average unit price should be used as the dependent variable. The objective of the study was to determine the effect of

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Table 1. Independent variables for predicting stumpage prices (from Vasievich *et al.* 1988).

<u>End Product Markets</u>

- Average lumber or log prices by species (prior month)
- Average pulpwood delivered prices, by species (prior month)
- Housing starts (prior month or lagged several months

<u>Effects of Time</u>

- Months from a base date
- Months from base squared

<u>Spatial Effects</u>

- Miles of paved road haul distance
- Miles of unpaved road haul distance
- Distance to nearest consuming mill
- Transportation distance and costs
- Mill capacity within a defined haul radius of the sale
- Average rate of timber removals as percent of inventory
- Price zone (dummy variable)

<u>Sale Characteristics</u>

- Average skidding distance
- Harvesting method (dummy variable)
- Percent of volume logged by specific methods
- Mean tree diameter
- Trees per cord or thousand board feet (Mbf)
- Volume per tree or per square foot of basal area
- Percent of sale volume in #1 logs
- Diameter of a tree of average basal area
- Average tree grade
- Volume or percent of volume in each grade
- Average log grade
- Defect percent
- Percent of total volume in pulpwood, sawtimber, and veneer
- Total sale volume
- Average volume per acre
- Size of timber sale in acres

<u>Short-term Supply, Demand, and Competition Effects</u>

- Number of mills buying timber from the area of the sale
- Number of potential buyers
- Number of bidders
- Volume available in all sales on the market at the same time
- Volume of damaged timber available on the market

cutting method on stumpage value and, as discussed previously, using total sale price might mask the effect. Table 1 was used as a guideline to select explanatory variables. The final form of the model would depend on which variables were available from the Forest Service sales records, although attempts would be made to insure that all five of the categories in Table 1 were represented in the model.

DEVELOPING THE DATA BASE

Timber sales data from four National Forests were used to develop a data base. The Forests were the Huron-Manistee, the Hiawatha, and the Ottawa National Forests in Michigan, and the Nicolet National Forest (NF) in Wisconsin. These Forests were chosen because of the large amount of northern hardwood timber sold and their proximity to Michigan. Information on sales from the period of 1980 to 1989 were found to be readily available for all Forests.

Rejection criteria were established in advance to help decide which sales should be included in the data base. Since the northern hardwood sale characteristics were to be analyzed, sales had to be at least fifty percent northern hardwoods by volume. The species and species groups considered to contribute towards the fifty percent minimum were sugar maple, yellow birch, American beech, American elm, black ash, red maple, northern red oak, white ash, paper birch, and mixed hardwoods. Even though eastern

hemlock and eastern white pine are considered to be part of the northern hardwood group, they were not included because they can also be found in association with other conifers.

Only those sales which were sold by sealed bid were included in the data base. Negotiated sales were not included because they might not reflect the true market value of the timber. Often, if a sale receives no bids when first offered for sale, it is reevaluated and sold by direct negotiation with a buyer.

The Forest Service condenses most of the pertinent sale information into one form (FSM-2490). A supplement to this form, the Appraisal Summary - Transaction Evidence sheet (FSH 2409.22) was also used. An example of both forms may be found in the Appendix. A data base was created using selected variables from the forms. The variables (Table 2) were chosen using the list in Table 1 as a guideline. The complete list of variables and their values by Forest may be found in the Appendix.

The dependent variable could be represented by either the average high bid or the average statistical high bid. The measures differ by what value is divided by total sale volume. Many sales have stipulations that require the buyer to build or improve permanent roads. The cost of these roads are estimated by the Forest Service and are credited to the buyer upon the successful completion of the roads. Potential buyers bid on the timber knowing they will receive

Table 2. Predictor and identification variables selected from timber sales records (FSM-2490 and FSH-2409.22).

- Forest
- Ranger District
- Sale name
- Quarter and fiscal year
- Acres in sale
- Bid date
- Salvage (Y or N)
- Contract number
- Termination date
- For individual species:
  - Species code
  - Product unit
  - Volume
  - Advertised rate
  - High bid
  - Statistical high bid
- Total sale volume in Mbf
- Average high bid
- Average statistical high bid
- Number of bidders
- Small Business Administration (SBA) Class
- Total value of bid
- Separate values for sawlogs and pulpwood:
  - Haul distance in miles
  - Specified road construction in miles
  - Temporary road construction in miles
  - Purchaser credit limit
  - Temporary road cost

the credit. The average high bid does not account for this credit; the statistical high bid does. The statistical high bid was therefore chosen as the dependent variable in the regression model. It is also representative of the average stumpage value of the timber and will be referred to in the model as STUMPAGE.

The Ottawa NF had several deficit sales which, after consideration, were eliminated. Deficit sales are not to be confused with below-cost timber sales. Below-cost timber sales cost the government more (due to road development, administrative costs, etc.) than they receive in payment from the buyer, while deficit sales are those where the buyer takes less profit than usual (Rideout 1987). The deficit sales had negative statistical high bids, making it illogical to leave them in the data base. The costs of temporary roads, on the other hand, are borne completely by the buyer.

The Forest Service usually employs several different cut methods for each sale. If only one cut method were used on each sale, the number of sales would increase tenfold. Therefore, each sale is subdivided into smaller units called purchase units or payment units. The payment units usually delineate the Compartment-Stand management subdivisions used by the Forest Service. Only one price is bid for each species-product in the sale, however, regardless of its frequency in different payment units. It is impossible, therefore, to explicitly calculate the effect of cut method

on stumpage price. It has been assumed that there is an effect and that the analysis will identify its magnitude and direction.

The buyer must finish cutting all timber from one payment unit or group of units before starting cutting in another. In this way, the Forest Service can limit the amount of damage done if the buyer defaults on the sale. Default sales were not eliminated from the data set. It was assumed that the buyer fully expected to harvest all of the timber and therefore gave a bid based on their evaluation of the fair market value of the timber. A related requirement for the buyer is a performance bond equal to approximately ten percent of the sale value, which is held by a third party until cutting is complete. The bond is used to pay for damages in the case of buyer default. It is possible that the bond requirement influences stumpage prices.

Usually only one cut method is used on a payment unit. This information - cut method for each payment unit - is included on form H-2430-9. The individual species volume by payment unit and the number of acres in each payment unit are recorded in the standard Forest Service timber sales contract (FS-2400-6T). The number of acres in sale on FSM-2490 was found to be an inaccurate measure of the acres actually cut. The acres in sale include areas which were not cut but were between two other areas being cut. The sum of the acres for each payment unit in a sale was therefore used as the value for total acreage cut.

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The cut methods used varied across the Forests, and not all methods were used on each Forest. The cut categories used were clearcuts (CC), shelterwood (SHELTER), seed tree (SEED), overstory removal (OR), selection (SELECT), improvement (IMPROVE), commercial thinning (THIN), and salvage (SALVAGE). Some methods were a combination of closely associated methods, for example SELECT included individual tree selection and group selection. Stand clearcutting and patch clearcutting were listed under CC, and SALVAGE contained stands salvaged because of mortality or sanitation. The volume harvested was tallied for each payment unit and aggregated under the appropriate cut method. The frequency of each cut method was determined for every sale as well.

Some payment units had more than one cutting method. Three additional variables were created to account for that: EMIX, UNMIX, and MIX. CC, SHELTER, SEED, OR, and SALVAGE were considered to be even-aged silvicultural treatments while SELECT, IMPROVE, and THIN were considered to be uneven-aged methods. If the payment unit was cut by a mix of even-aged methods, volume cut was listed under EMIX. If all uneven-aged methods were used, volume was listed under UNMIX. If both even-aged and uneven-aged methods were used, the respective volume was listed under MIX. Two general indicators of cut method volume were also created: EVOL and UNVOL. EVOL was the sum of even-aged payment unit volume, UNVOL was the sum of uneven-aged payment unit volume.

The species and species-products being cut also varied across the National Forests. Twenty-five different species-products were found on Hiawatha NF sales, 33 on Nicolet NF sales, and 27 on Ottawa NF sales. The Huron-Manistee NF sales only had 9 species-products listed because, with the exception of aspen, no distinction was made between hardwoods (i.e. they were all listed as mixed hardwoods on the sales forms). Aspen was listed separately.

Several new variables were created from the original ones. All volumes were converted to thousand board feet (Mbf). This was necessary because pulp volume was reported in thousand cubic feet (Ccf) or cord volume on the sales forms. To ensure that the converted volumes were accurate, the total sale volume was recomputed and compared to the volume reported on FSM-2490. The conversion factors used were :

1 Mbf = 1.6 Ccf
1 Mbf = 2 Cords

The length of the sale in months was calculated by subtracting the bid date from the termination date to get the total length in days, and then dividing by 30 to get the number of months. Specified road costs per Mbf were calculated by dividing total road cost by total sale volume. Temporary road costs were calculated in the same manner. Haul distance was weighted based on the amount of sawtimber and the amount of pulp in the sale, since they were usually appraised to different destinations. The percentage of total sale volume for each species-product was calculated as

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a simple ratio. Overbid was calculated by subtracting the advertised rate from the high bid.

Finally, a variable for the average volume harvested per acre (AVGVOL) was calculated. Anderson (1976a) did not find average volume per acre to be significant in explaining stumpage price variation, but Jackson and McQuillan (1979) did.

A list of the variables can be found in Table 3. They are given with the units they are reported in along with a description of what the represent.

DEVELOPING THE EMPIRICAL MODEL

Once the list of potential regression variables was completed, it was time to choose the form of the model to be tested. As mentioned previously, a multiple regression model would be used. The general model form was

$$P = b_1 X_{1n} + b_2 X_{2n} + \ldots + b_i X_{in} + u_n$$

where P is the dependent variable, stumpage value, b_1 through b_i are unique regression coefficients corresponding to the independent variables X_1 through X_i, and u_n is a random error term. A linear model form would be used because of its flexibility and ease of development and interpretation. An intercept term would be used in the model unless it could be shown not to be significantly different from zero.

The question of regionality had to be answered prior to model testing. If the sales from different forests were too

Table 3. A list of the variables used in the regression analyses.

Variable	Units	Description
MONTHS	Months	Contract length
ACRE	Acres	Total sale acreage
PU		Total number of payment units
BIDS		Number of bids received
ADVER	$/Mbf	Forest Service advertised rate
STUMPAGE	$/Mbf	Statistical high bid for sale
OVERBID	$/Mbf	Difference between ADVER and STUMPAGE
VALUE	$	Total high bid
FOBVAL	$/Mbf	Estimated timber selling price at the mill
HAUL	Miles	Weighted haul distance
SAWH	Miles	Estimated haul distance for sawtimber
PULPH	Miles	Estimated haul distance for pulpwood
SPEC$	$	Specified road costs (purchaser credit limit)
SPEC	$/Mbf	Specified road cost per unit of volume
TEMP$	$	Estimated temporary road costs
TEMP	$/Mbf	Temporary road cost per unit of volume
TEMPM	Miles	Temporary road length
VOL	Mbf	Total sale volume
AVGVOL	Mbf/acre	Average volume per acre
EVOL	Mbf	Volume cut by even-aged methods
UNVOL	Mbf	Volume cut by uneven-aged methods
CC	Mbf	Volume cut from clearcut PU's
SHELT	Mbf	Volume cut from shelterwood PU's
IMP	Mbf	Volume cut from improvement PU's
THIN	Mbf	Volume cut from thin PU's
SELECT	Mbf	Volume cut from selection PU's
ROAD	Mbf	Volume cut from specified road PU's
MIX	Mbf	Volume cut from mixed method PU's
UNMIX	Mbf	Volume cut from mixed uneven-aged method PU's
EMIX	Mbf	Volume cut from mixed even-aged method PU's
%EVOL		EVOL/VOL (Percent of total sale volume)
%UNVOL		UNVOL/VOL
%CC		CC/VOL
%SHELT		SHELT/VOL
%IMP		IMP/VOL
%THIN		THIN/VOL
%SELECT		SELECT/VOL
%ROAD		ROAD/VOL
%MIX		MIX/VOL
%UNMIX		UNMIX/VOL
%EMIX		EMIX/VOL
#CC		Number of clearcut payment units
#SHELT		Number of shelterwood payment units
#IMP		Number of improvement payment units

Table 3. (cont'd.).

Variable	Units	Description
#THIN		Number of thin payment units
#SELECT		Number of selection payment units
#ROAD		Number of specified road payment units
#MIX		Number of mixed payment units
#UNMIX		Number of uneven-aged payment units
#EMIX		Number of even-aged payment units
MHS	Mbf	Mixed hardwood sawtimber
RMS	Mbf	Red maple sawtimber
SMS	Mbf	Sugar maple sawtimber
YBS	Mbf	Yellow birch sawtimber
ES	Mbf	Elm sawtimber
AS	Mbf	Aspen sawtimber
BES	Mbf	Beech sawtimber
BC	Mbf	Black cherry sawtimber
PBS	Mbf	Paper birch satimber
MCS	Mbf	Mixed conifer sawtimber
PS	Mbf	Pine sawtimber (red, white and jack)
HS	Mbf	Hemlock sawtimber
SS	Mbf	Spruce sawtimber
RWS	Mbf	Red and white pine sawtimber
WPS	Mbf	White pine sawtimber
MHP	Mbf	Mixed hardwood pulp
AP	Mbf	Aspen pulp
BFP	Mbf	Balsam fir pulp
RWP	Mbf	Red and white pine pulp
MCP	Mbf	Mixed conifer pulp
SP	Mbf	Spruce pulp
HP	Mbf	Hemlock pulp
JPP	Mbf	Jack pine pulp
CP	Mbf	Northern white-cedar pulp
WPP	Mbf	White pine pulp
%(Species)		Species volume/VOL (percent of total sale volume)

different, then separate stumpage price models should be used, or dummy variables for each forest should be included in a composite model. Differences between National Forests were tested using a two-way contingency table for differences in the probability of cut methods. Conover (1980) provides a detailed explanation on the use of contingency tables. The null hypothesis to be tested was:

H_0 : All cut types occur with equal probability on all four Forests.

verses the alternate:

H_1 : At least one cut type does not occur with equal probability on all four Forests

The test statistic is computed by first creating a contingency table with the National Forests as the rows and cut types as the columns (Table 4). The values in the cells (O_{ij}) are the number of times a payment unit was cut by the particular cut method on the Forest. A table of expected values (Table 5) is then calculated and the test statistic T = $\text{Sum}[(O_{ij} - E_{ij})^2/E_{ij}]$ is compared to values of the chi-square distribution with (r-1)(c-1) degrees of freedom. The test statistic for the contingency table was T = 826. The value of X^2 with 30 degrees of freedom at the 0.005 alpha level is 53.9. The excessively large value of the test statistic means that the null hypothesis must be rejected.

The contingency table test showed that the different National Forests use at least one of the cut methods in different proportions. More than one cut method was used in

Table 4. Observed values for cut types.

	Hiawatha	Huron-Manistee	Nicolet	Ottawa	Totals
CC	62	199	138	156	555
SHELT	7	49	34	53	143
OR	0	69	14	23	106
SALV	0	0	17	1	18
SELCT	82	18	199	270	569
IMP	53	4	236	141	434
THIN	76	98	121	365	660
EMIX	1	0	6	5	12
UNMIX	18	0	39	65	122
MIX	34	80	25	43	182
ROADS	10	18	39	91	158
Totals	343	535	868	1213	2959

Table 5. Expected values for cut types.

	Hiawatha	Huron-Manistee	Nicolet	Ottawa
CC	64	100	163	228
SHELT	17	26	42	59
OR	12	19	31	43
SALV	2	3	5	7
SELCT	66	103	167	233
IMP	50	78	127	178
THIN	77	119	194	271
EMIX	1	2	4	5
UNMIX	14	22	36	50
MIX	21	33	53	75
ROADS	18	29	46	65

different proportions, based on the magnitude of the test statistic. Comparisons between the observed and expected values in Tables 4 and 5 confirm this. For example, the Huron-Manistee NF sales tend to contain more even-aged payment units and less uneven-aged payment units than expected. Also, neither the Hiawatha nor the Huron-Manistee NF's had any salvage payment units, while the Nicolet NF had a total of 17. These differences probably reflect the differences between the National Forests' species compositions, and not differences in timber management.

It was assumed that cut types used were consistent over Ranger Districts within all of the Forests. Since some Ranger Districts had only a few sales, developing individual equations would not be prudent.

Further evidence supporting the need for separation of the four National Forests came from a comparison of the means of the potential regression variables by Forest. The least significance difference (LSD) method (Steele and Torrie 1980) was used to compare the means of selected variables by National Forest. Significance was deemed to occur at the 0.05 level. Table 6 shows the results of the analysis.

While the Huron-Manistee NF averaged the fewest number of acres, volume, and payment units per sale, it had the highest average high bid and the greatest volume per acre removed. In contrast, sales on the Nicolet NF on the average were larger and worth more in total, yet per acre

Table 6. Comparison of variable means using Fisher's least significant difference (LSD) test.

Variable	Hiawatha	Huron-Manistee	Nicolet	Ottawa
STUMPAGE ($/Mbf)	16.41 c	30.94 a	23.18 b	27.57 ab
VALUE ($)	15727 c	23821 bc	45037 a	33307 a
BIDS	2.89 a	2.62 a	2.77 a	2.72 a
OVERBID ($/Mbf)	6.03 a	7.40 a	7.67 a	8.19 a
MONTHS	42.4 b	34.4 c	51.3 a	48.0 a
HAUL (Miles)	33.6 b	34.8 b	76.7 a	13.6 c
TEMP ($/Mbf)	0.73 b	0.60 b	0.25 c	1.03 a
SPEC ($/Mbf)	1.22 b	1.07 b	2.86 a	4.12 a
VOLUME (Mbf)	1261 b	824 c	1903 a	1206 b
ACRE	316 b	148 c	491 a	378 b
PU	5.6 c	5.6 c	13.3 a	9.2 b

Means followed by the same letter are not significantly different at the .05 level.

volume and per Mbf value was lower. The Ottawa NF and the Hiawatha NF had similar total volume and acreage in each sale, but the high bid for Ottawa NF sales averaged ten dollars higher than high bid for Hiawatha NF sales.

There were other notable differences between National Forests. The average haul distance (HAUL) was significantly different between all Forests as was temporary road costs per Mbf (TEMP). TEMP was much higher on the Huron-Manistee NF than on any of the other National Forests, but sales from that Forest had the smallest average specified road costs per Mbf. This suggests that much more permanent road building was required (or desired) in the less developed areas of Michigan's Upper Peninsula and northern Wisconsin.

Competition for timber appeared to be similar across the region. The average number of bids per sale ranged from 2.6 to 2.9 with very small standard errors. Likewise, the average overbids per sale were fairly consistent, although more variable. Neither of these variables were significantly different across Forests. The means and standard deviations for each National Forest can be found in the Appendix.

Finally, a generalization of Bartlett's test for homogeneity (Morrison 1976) was used to determine the equality of the covariance matrices of the variables listed in Table 6. The null hypothesis tested was that the covariance matrices of the four National Forests are equal verses the alternative that at least two of the matrices are

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The test statistic is compared to a chi-square distribution with $0.5*(k-1)p(p+1)$ degrees of freedom, where k equals the number of covariance matrices and p is equal to the number of variables. The test statistic was found to equal 1098. The probability of a greater X^2 is less than 0.0001. Therefore, the null hypothesis that the covariance matrices are all equal must be rejected.

All of this suggests that there are basic differences between the National Forests represented in the study, particularly between the Huron-Manistee and the Nicolet. Regional models should therefore be used for predicting stumpage prices. Dummy variables for each Forests could be used, but that would reduce the error degrees of freedom and complicate interpretation of the results.

The next step was to determine which variables should be used to predict the dependent variable, STUMPAGE. Scatter plots were used to examine the relationship between the independent variables and the dependent variable. None of the relationships appeared to be nonlinear, so transformations were not required.

Simple correlation was then used to reduce the list of possible predictive variables. Several of the independent variables were highly correlated with each other, or were uncorrelated with the dependent variable. Aside from species volume and cut-method variables, the variables which seemed to be most important for all National Forests

included contract length (MONTHS), hauling distance (HAUL), a measure of competition for the sale (BIDS or OVERBID), the cost of specified roads per Mbf (SPEC), and temporary road costs per Mbf (TEMP).

The alternative measures of sale competition were number of bidders and the amount of overbid or bid premium. OVERBID was chosen for two reasons. First, it had a higher correlation with the dependent variable, STUMPAGE. Secondly, bid premium accounts for incorrect appraisals of the timber value and cost allowances as well as the amount of competition (Schuster and Niccolucci 1989).

The empirical model would have its own unique variables for species volume and cut method for each National Forest, such as total species volume and the percentage of sale volume for each species. The latter would probably be a better choice, because the magnitude of the variables would be approximately the same as the others being used. Total species volume ranged from zero Mbf to over 1000 Mbf, and large differences in magnitude within the covariance matrix can give unstable results in regression analysis. Also, because the sum of cut method volumes equals the sum of species volume, they both could not be used in the same regression.

Because an intercept term was to be included in all regressions, the percentage of all species could not be used as this would create collinearity. STUMPAGE was first regressed only on species-product volume. The significant

species-products would then be expressed as percent of total volume in the regression of STUMPAGE on them and the other non-volume variables.

Cut method could also be represented several alternative ways, either as percent volume, total volume, or the number of payment units cut by a particular method. The number of payment units had the least amount of difference between the smallest and largest values, so again, the smaller numbers would probably give better results. Since the objective was to determine how cut method affected stumpage value, it was important that a variable expressing cut method be included in the regression.

Although it did not fit into any particular category in Table 1, the Small Business Administration (SBA) class of the successful high bidder was included in the regression in the form of dummy variables. The three classifications used were large business (L), small business (S), and no classification (N). It was thought that differences in company size might affect the high bid price because of profit structure, efficiency, or other reasons. Sale size in acres would also be included in the regression to determine the importance of the economy of scale, even though acreage did not correlate well with STUMPAGE.

The one category suggested by Vasievich *et al.* (1988), but not found on any of the sales forms, was a measure of end product markets. Some researchers have included a variable in their models that estimated the selling price of

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the timber (e.g. McQuillan and Johnson-True 1988). For the Michigan National Forests, a reasonably good price guide exists in Timber-Mart North (1981 - 1989). This newsletter, published quarterly, gives a high, low, and average price for both stumpage and free-on-board (FOB) mill prices for timber in three price zones in Michigan. Most products are given three prices (low, average , high) if a market exists in that region. The average FOB mill price (FOBVAL) of the timber in each sale was estimated using the average price figure given in Timber Mart-North.

Unfortunately, the price source for Wisconsin timber, the Wisconsin Forest Products Price Review (1985 - 1989) while providing both standing timber and FOB mill prices, has limited coverage. Many of the species-products did not have prices listed in certain periods of the year. Nonetheless, an attempt was made to develop an approximation of the average selling price of timber at the mill.

TESTS FOR THE BEST MODEL

Several methods were used to judge the best model. *A priori* expectations of the signs of the estimated regression coefficients were made so as to check the logic of the models. Logging costs such as haul distance and road building costs should decrease the average stumpage price paid. Longer sale periods and increased sale size (up to a point) should command higher bid prices. Large businesses might need more profit because of larger overheads than

small businesses, so an SBA(L) variable should have a positive coefficient. Higher-valued timber species should also cause an increase in the bid price.

Even-aged logging methods (clearcut, shelterwood, overstory removals) should result in higher bid prices because stands are easier to harvest. More volume per acre is removed and less care is needed to protect the residual stand. Uneven-aged methods should then cause a decrease in bid price for the opposite reasons. More time is needed for harvesting operations because of the lower volume per acre and the greater amount of care required.

The first statistical test would be an F-test using the ratio of the model mean square to the error mean square compared to the tabular value of F (Steele and Torrie 1980). This test is synonymous with testing that

$$H_0 : B_1 = B_2 = \ldots = B_i = 0$$

verses the alternate

$$H_1 : H_0 \text{ is incorrect}$$

or, that the relation between the dependent and independent variables is zero. The 0.05 level of significance was selected for the F-test. Since the total sum of squares will not change, the model with the highest F-value would explain the most variation in the dependent variable.

An adjusted R^2 was used to evaluate models rather than the normal R^2 (an adjusted R^2 is corrected for small samples and a large number of predictor variables). It will generally increase as the F-value does, but it also is

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related to the number of parameters in the model. The adjusted R^2 was calculated as

$$\text{Adj. } R^2 = 1 - \{[(n - i)(1 - R^2)] / (n - p)\}$$

where n is the number of observations used to fit the model, p is the number of parameters estimated, and $i = 1$ if the model includes an intercept, $i = 0$ otherwise.

Another measure of a model's goodness-of-fit is the square root of the error mean square, also known as the standard error of the estimate (SEE). A smaller SEE indicates that a higher proportion of the variability in the dependent mean has been explained. When the SEE is divided by the mean of the dependent variable, the coefficient of variation (CV) is created. The CV gives a unitless measure of the model's variation which can be used to compare it to the models from the other forests.

The independent variables in the final model also need to be tested for significance. A t-test was used to determine if the regression coefficients were significantly different from zero. The test would be judged significant at the 0.10 alpha level.

A technique known as stepwise regression would be used to help select the final model. Although some researchers do not favor leaving model selection to the whims of a computer program, if the initial model has been well thought out, stepwise regression can be used to reduce large models to a more manageable size. In general, if a variable does not have a significant coefficient in the full model, it

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does not explain a significant proportion of the variation in the dependent variable and can be dropped from the model. However, it is possible that the effects of a group of variables is significant while individually their effect is too slight to be significant, or that the presence of one variable is masking the effect of another (Cramer 1972). Stepwise regression develops a sequence of regression models, starting with only one variable and adding or deleting variables at each step. Independent variables added earlier may deleted if they no longer provide useful information once a new variable or set of variables is added (Neter *et al.* 1985).

The usual assumptions of classical linear regression theory were made about the model (see Klienbaum *et al.* 1988): 1) the errors are distributed normally and independently with constant variance and a mean of zero; 2) the model is properly specified, that is the errors do not contain information about the dependent variable that is not already included in the model; 3) the dependent variable (STUMPAGE) is distributed normally and independently; and 4) the independent variables are measured without error.

The first two assumptions were checked by visual inspection of the residuals plots (see Chatterjee and Price 1977). Standardized residuals were plotted against the predicted values of the dependent variable. The standardized residuals have a zero mean and most should fall within the range of plus or minus 2 if the model is

correctly specified. Residuals that diverge from or converge toward the X axis for increasing values of the predicted variable indicate heteroscedastic error variances. These models may be corrected through weighted least squares. Linear plots or plots with distinct patterns indicate that an important variable has been left out of the model.

Violations of the third assumption do not influence fitting of the least-squares model. However, while the usual parametric tests of hypotheses are robust, extreme departures of the dependent variable from normality can cause problems with statistical inference. Skewness and kurtosis can be used to judge how close a distribution is to normal. Stem and leaf diagrams and box and whisker plots can also be looked at to judge the severity of nonnormality.

The Shapiro-Wilk test of normality was used to evaluate STUMPAGE (Conover 1980). The hypotheses tested by the Shapiro-Wilk test are:

H_0 : $F(x)$ is a normal distribution function with unspecified mean and variance

verses the alternative

H_1 : $F(x)$ is nonnormal.

The Shapiro-Wilk test can also be used to test the normality of the error terms. For samples sizes greater than 50, an approximation is used.

The fourth assumption, that the independent variables were measured without errors, would be taken on faith. Completely outrageous values for an independent variable

would be investigated to determine if possibly there was an error in recording.

Another assumption made was that simultaneous bias was not a problem with the models. Simultaneous bias can occur when the data are generated by a set of interdependent processes (Fomby *et al.* 1988). Theoretically, the volume in a particular sale influences the supply of timber available which in turn influences demand. Demand then influences prices which in turn influences the amount of volume willing to be purchased. The explanatory variables are not independent of the disturbances, meaning that the dependent and independent variables need to be determined jointly. This would create a problem if the sales were very large or if the volume of timber being sold from all sources was very small. It was assumed that the timber market in the Great Lakes is large enough so that it would be nearly impossible for one sale to have a large impact on the market.

Since the model is based on time series data, the possibility of autocorrelation exists. Autocorrelation can result in inefficiency and cause larger standard errors of the regression coefficients. Two ways to correct the problem are to include a lagged dependent variable in the model, or to detrend the data prior to doing regression analysis. The simplest method is to detrend the data. The models would still need to be tested for autocorrelation; the Durbin-Watson statistic (Kmenta 1971) would be an

appropriate choice.

Kingsley and DeBald (1987) compared three methods of detrending hardwood stumpage prices in Pennsylvania. They used the Consumer's Price Index (CPI) for all commodities, the Producer's Price Index (PPI) for hardwood lumber, and the PPI for all lumber commodities. They concluded that using the PPI for hardwood lumber gave the best results. However, as there is more involved in logging than just the price of hardwood lumber, the CPI was thought to be a more appropriate measure of price changes. All price variables (STUMPAGE, FOBVAL, TEMP, SPEC, etc.) were then adjusted using the CPI for the particular month in which the sale was made (U.S. Dept. of Labor 1980 - 1989).

RESULTS AND DISCUSSION

Model development was done using SAS statistical software (SAS Institute 1988). Four models were developed, one for each National Forest. STUMPAGE was regressed on OVERBID, HAUL, MONTHS, TEMP, SPEC, FOBVAL, AVGVOL, ACRE, SBA dummy variables and the appropriate variables for species volumes and cut-method. The models developed are presented individually for each Forest. A discussion of their implications follows.

HIAWATHA NATIONAL FOREST

The Hiawatha National Forest is located in Michigan's Upper Peninsula and is split into two large areas, one in the eastern portion of the UP and one in the central portion of the UP. The Forest is supervised from Escanaba and has Ranger Districts in Rapid River, Manistique, Munising, Sault Ste. Marie, and St. Ignace.

Sixty-two sales from the Hiawatha NF were found to meet the criteria established for the study. They were sold between July of 1980 and June of 1989 and ranged in size from just over 100 Mbf to almost 6000 Mbf total volume.

Analysis of the normality of STUMPAGE showed it to have a large positive skewness (3.70), mainly because of three sales with much higher than average stumpage values. One sale was three standard deviations from the mean while the

other two were both outside of four standard deviations. Based on the amount of the bids, the amount of competition, and the buyers who bid on the sales, the logs from the three sales were probably used for veneer. A veneer mill located near the sales put in a bid on all three sales and was the successful high bidder for one of them.

Dropping the three observations resulted in a much more normal distribution for STUMPAGE; skewness was reduced to 0.72 and the Shapiro-Wilk statistic became insignificant. However, the sales might contain information vital for the regression, so they were left in the data set for the first trial. If the three observations were truly different from the others, the regression would show it. Another reason to keep them in the data set was the desire to have as many observations as possible. The object was to create a descriptive rather than a predictive model.

The first regression was done using percent species volume and the number of payment units cut by each cut method. Stepwise regression was used to help choose the best possible model. The model had an extremely high adjusted R^2 value of 0.953. The equation was :

$$\begin{aligned}\text{STUMPAGE} &= 6.15 + 1.05(\text{OVERBID}) - 0.06(\text{MONTHS}) \\ &+ 27.2(\%\ \text{MHS}) + 60.8(\%\ \text{SMS}) + 72.0(\%\ \text{RWS}) \\ &- 1098.0(\%\ \text{PBS}) + 0.99(\#\ \text{THIN}) - 2.45(\#\ \text{ROAD})\end{aligned}$$

One concern with the model was the magnitude of the coefficient for the percentage of paper birch sawtimber (% PBS). It is quite large compared to the other coefficients. Paper birch was only listed in one sale, so it is doubtful

that it truly has this large of an effect on stumpage value. For that reason, paper birch was dropped as a possible independent variable and the regression rerun. The model did not change very much; the results are presented in Table 7.

The adjusted R-square for the model was 0.950 and the Durbin-Watson statistic was found not to be significant. There did not appear to be any obvious patterns in the residuals plot, however, there were four extreme outliers. Two of the outliers had standardized residuals with an absolute value of almost 4. One them was the Dukes sale, one of the sales with a very high value for STUMPAGE; another was the Lower Farm Hill sale. The other two outliers, the Lawson Road sale and the Lawson Road resale, were also identified as having unusually high values for stumpage. On the residuals plot, these two lay a distance from the main cluster of points and in the same general direction. According to Neter *et al.* (1985), such points can "pull" the regression in that direction causing a distortion of the goodness-of-fit statistics.

Another regression was then done, dropping the three sales with high stumpage value. The results were rather different from the model reported in Table 7. The adjusted R^2 value was reduced to 0.826 and four more independent variables became significant at the 0.10 level. The model was:

$$\text{STUMPAGE} = 8.09 + .68(\text{OVERBID}) - 0.06(\text{MONTHS}) + 34.03(\%\ \text{MHS}) + 29.00(\%\ \text{SMS}) + 66.48(\%\ \text{RWS})$$

Table 7. Analysis of variance and parameter estimates for the dependent variable, STUMPAGE, Hiawatha National Forest.

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	
Model	7	14779.0	2111.3	166.2	***
Error	54	683.3	12.7		
Total	61	15462.3			

Adjusted R^2 = 0.950

Parameter Estimates

Variable	Parameter Estimate	Standard Error	
INTERCEPT	6.12	1.37	***
OVERBID	1.06	0.10	***
MONTHS	-0.06	0.02	**
% MHS	27.28	5.11	***
% SMS	60.33	5.92	***
% RWS	52.34	23.49	**
# THIN	1.02	0.25	***
# ROAD	-2.31	1.32	**

** Significant at the 0.05 level
*** Significant at the 0.01 level

$$+ 27.45(\%\ MCP) + 32.11(\%\ RMS) + 36.02(\%\ PS)$$
$$+ 0.62(\#\ THIN) - 0.58(\#\ CC) - 2.53\ (\#\ ROAD)$$

The variables which became significant were the number of clearcut payment units (# CC) and the percent volume of three species-products, red maple sawtimber (% RMS), mixed pine sawtimber (% PS), and mixed conifer (% MCP).

The estimated regression coefficients which changed the most from the first model to the reduced model were for the amount of overbid (OVERBID) and the percent of sugar maple sawtimber (% SMS). Reviewing the characteristics of the three deleted sales explains why this is so. They had higher than average overbids and were dominated by sugar maple sawtimber (from one-half to three quarters of the sale volume).

HURON-MANISTEE NATIONAL FOREST

The Huron-Manistee National Forest is located in the northern portion of Michigan's Lower Peninsula. It is actually two forests, the Huron on the east side of the state and the Manistee on the west side, but it is administered by one supervisor's office located in Cadillac. Ranger Districts include Harrisville, Mio, and Tawas on the Huron side and Baldwin, Cadillac, Manistee, and White Cloud on the Manistee side.

There were 99 sales initially included in the data base, but cut method information could not be found on four of them. Normality tests on STUMPAGE for the remaining 95 revealed one extreme outlier. The Van Gilder sale had the

highest bid received for any sale on the forest at $103.72 per Mbf. Removing it caused the skewness of STUMPAGE to drop from 1.68 to 0.44. The Shapiro-Wilk test was still significant at the 0.05 level (probability < 0.0443), although it had improved from significance at the 0.0001 level. The Van Gilder sale was therefore not dropped from the data set.

The first trial was done using percent species volume and number of payment units cut by each method. None of the cut methods were found to be significant. Volume by cut method was used next, with the same results: no significant cut method variables. Finally, the more general EVOL, UNVOL, and MIX were used, first as volume totals and then as a percentage of the total sale volume. MIX was not used as a percentage, however, because the three percentages would sum to one. Again, volume by cut method was not significant in explaining STUMPAGE.

Six variables were significant for each model tested. They were OVERBID, TEMP, SPEC, HAUL, % MHS, and % AS. Their estimated regression coefficients changed very little between models, indicating that the models were not extremely sensitive to cut method. Table 8 gives the results of the regression. The adjusted R-square is very good (0.906). The standardized residuals were plotted against the predicted values of stumpage and showed no obvious patterns. None of the outliers were thought to be extreme, even though a few were outside of plus or minus two

Table 8. Analysis of variance and parameter estimates for the dependent variable, STUMPAGE, Huron-Manistee National Forest.

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	
Model	6	13814.0	2302.3	152.6	***
Error	88	1327.7	15.1		
Total	94	15141.7			

Adjusted R^2 = 0.806

Parameter Estimates

Variable	Parameter Estimate	Standard Error	
INTERCEPT	14.29	1.59	***
OVERBID	1.01	0.05	***
TEMP	-0.72	0.23	**
SPEC	-0.87	0.17	***
HAUL	-0.06	0.03	*
% MHS	45.63	3.09	***
% AS	43.28	8.91	***

* Significant at the 0.10 level
** Significant at the 0.05 level
*** Significant at the 0.01 level

deviations. The residuals did not have first order autoregressive errors according to the Durbin-Watson statistic.

NICOLET NATIONAL FOREST

The Nicolet National Forest is located in the extreme northeastern portion of Wisconsin. It has headquarters in Rhinelander and Ranger Districts in Eagle River, Florence, Laona, and Lakewood. Sixty-six sales were found to meet the criteria set forth for the study.

Normality testing of STUMPAGE showed it to be positively skewed (skewness = 1.54) with a Shapiro-Wilk statistic significant at the 0.0001 level. Unlike the Hiawatha NF and Huron-Manistee NF, the distortion of STUMPAGE's distribution was not simply due to one or two high value sales. A check of the 95% and the 100% quantiles for each Forest, prior to removing the extreme outliers, revealed the problem. For the Hiawatha NF, the quantiles were found at $34.28 and $97.27 respectively, and $48.94 and $96.40 respectively for the Huron-Manistee NF. However, the 95% and 100% quantiles for the Nicolet NF were found at $52.17 and $59.87, so there is not an obvious distinction between extremely large values of STUMPAGE. Discarding the last few observations would make little sense, logically or theoretically.

One solution to the problem would be to transform STUMPAGE so that it approached normality. This was done by

taking the logarithm (base 10) of each STUMPAGE value. LOG(STUMPAGE) was much closer to normal: skewness was reduced to 0.02 and the Shapiro-Wilk statistic was no longer significant. The drawback to using a transformed dependent variable is that it makes interpretation of the data more difficult.

A less desirable option would be to delete all observations where STUMPAGE exceeded a certain level, in effect trimming off the tail of the distribution and removing the cause of the skewing. Of course, this would reduce the size of the data set which was relatively small to begin with. The third alternative would be to assume that the nonnormality of STUMPAGE was not severe enough to affect the regression results.

All three alternative versions of the dependent variable were tried in regression equations. The same general group of variables was significant each time. However, deleting the six highest valued sales - alternative 2 - gave the worst results. The adjusted R-square was lowered by 15 points. LOG(STUMPAGE) gave more acceptable results, however, the non-transformed STUMPAGE gave a model with the highest R-square and lowest standard error of the estimate.

EMIX and THIN were found to be significant when using the number of payment units as the independent variables, although they were not significant when percent volume by cut method or total volume by cut method were used.

Conversely, CC and SALVAGE were significant only when they were used as measures of volume. The final model, therefore, has a mix of cut method measures.

Table 9 presents the results of the regression using the untransformed dependent variable and the full data set. The adjusted R-square value was 0.915. The standardized residuals plot showed no obvious patterns and no extreme outliers. The residuals themselves were normally distributed and did not display autocorrelation.

OTTAWA NATIONAL FOREST

The Ottawa National Forest is located in the northwestern corner of Michigan's Upper Peninsula. It is contiguous with the Nicolet NF; the two are separated only by state boundaries. As might be expected, they share many of the same species in the same relative abundance. The results of the modelling however were somewhat different.

The Ottawa NF is supervised from Ironwood and has Ranger Districts located in Bergland, Bessemer, Iron River, Kenton, Ontonagon, and Watersmeet. A high percentage of the sales offered on the forest consist primarily of northern hardwoods, as evidenced by a total of 130 sales found to be acceptable for the study.

Like the other Forests, STUMPAGE for the Ottawa NF was found to be positively skewed. Removing the highest values of STUMPAGE did not change the distribution appreciably so they were left in for the regression. If the values were

Table 9. Analysis of variance and parameter estimates for the dependent variable, STUMPAGE, Nicolet National Forest.

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	
Model	10	8981.6	898.2	68.8	***
Error	55	718.1	13.1		
Total	65	9699.7			

Adjusted R^2 = 0.915

Parameter Estimates

Variable	Parameter Estimate	Standard Error	
INTERCEPT	6.88	1.62	***
OVERBID	0.95	0.07	***
SPEC	-1.18	0.13	***
% MHS	46.02	8.82	***
% SMS	73.42	6.48	***
% ES	65.48	6.84	***
% PS	32.91	8.67	***
# EMIX	-4.36	1.58	***
# THIN	0.32	0.14	**
% CC	5.41	2.94	*
% SALVAGE	-15.79	4.59	***

* Significant at the 0.10 level
** Significant at the 0.05 level
*** Significant at the 0.01 level

extreme, they should be obvious on the residual plots.

As was done with the other National Forests, STUMPAGE was first regressed on the percent of volume by species-product, cut method counts, and the other usual variables. None of the cut method variables were significant at the 0.10 level. The significant variables were OVERBID, SPEC, MONTHS, % SMS, % YBS, % BCS, AND % SS. These same variables were significant when cut method volumes were used instead of cut method counts, but again, cut method was not significant. The final model tested included % EVOL and % UNVOL as independent variables in hopes that a very basic relationship between cut method and stumpage value might be shown. Only % EVOL was found to be significant at the 0.10 level.

After reviewing the residuals, it was decided that three sales which had salvage volume should be dropped from the data set. The Ottawa NF had only one payment unit identified as being SALVAGE (Table 4), even though there were three salvage sales. The East King sale had only one payment unit, which was cut using a mix of salvage and selection cuts. Its standardized residual was over 5, large enough to be excluded. Ponozzo Lake had one payment unit listed as a commercial thinning. It too had a large standardized residual. The final salvage sale, Knucklehead Salvage, was also removed even though its standardized residual was within the acceptable range. Knucklehead Salvage had four payment units, all listed as being

commercial thinnings. So, unlike the Nicolet NF which had 17 salvage payment units, the regression analysis for the Ottawa NF could not adjust STUMPAGE correctly for the salvaged sales.

The model was then reestimated. The results of the final regression are shown in Table 10. The model has a reasonable adjusted R-square (0.844), 0.07 higher than the model which included the four discarded observations. The standard error of the estimate is slightly larger than the other National Forests' models, although that is typical of larger samples. A plot of standardized residuals against predicted STUMPAGE did not exhibit any obvious patterns. The residuals were distributed normally and the Durbin-Watson did not test significant for autocorrelation.

COMPARISON OF THE MODELS

All of the models appear to be good predictors of STUMPAGE. No model had an adjusted R-square of less than 0.84, nor did any model violate any of the initial assumptions. The models shared some attributes, but were different with respect to the effect of cutting strategy on the high bid price.

In all cases, OVERBID was highly significant in explaining the variation in STUMPAGE. The estimated regression coefficients for OVERBID ranged from 0.95 for the Nicolet NF to 1.06 for the Hiawatha NF. The Huron-Manistee NF and the Ottawa NF had coefficients of 1.01 and 1.04,

Table 10. Analysis of variance and parameter estimates for the dependent variable, STUMPAGE, Ottawa National Forest.

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	
Model	8	38643.2	4830.4	85.9	***
Error	118	6636.9	56.2		
Total	126	45280.1			

Adjusted R^2 = 0.844

Parameter Estimates

Variable	Parameter Estimate	Standard Error	
INTERCEPT	8.18	2.71	***
OVERBID	1.04	0.13	***
MONTHS	-0.13	0.05	**
SPEC	-0.48	0.14	***
% SMS	86.55	10.37	***
% YBS	130.84	23.14	***
% BCS	259.39	66.87	***
% SS	-117.37	35.59	***
% EVOL	7.12	2.78	***

** Significant at the 0.05 level
*** Significant at the 0.01 level

resp

inc

aff

sig

est

th

re

tw

c

a

P

respectively. In general, you would expect a one dollar increase in the amount paid over the advertised rate to affect a one dollar increase in total price paid.

The dollar cost of specified roads (SPEC) was significant for all models except the Hiawatha NF. The estimated regression coefficient had a negative sign, even though the buyer's costs of permanent road building are reimbursed to a certain point. This could be indicative of two things: one, that the Forest Service underestimates the cost of road building, or two, timber buyers do not like the added burden of building a road. The latter more probable. Permanent roads take time away from logging and require close contact with the Forest Service to ensure that the road is being built to the proper specifications. This leads to longer and more involved sales.

Longer sales negatively affected the predicted value of STUMPAGE, at least for the Hiawatha NF and the Ottawa NF. This could be due to uncertainty about future timber markets, or possibly it reflects a quantity discount (total volume and contract length are highly correlated). It might also be tied to the lost interest on the logger's performance bond, which is not returned until the sale is completed. The magnitude of the effect is small, though, and many loggers received contract extensions.

The cost of temporary road construction (TEMP) might be expected to have a significant negative impact on STUMPAGE, but it was significant only for the Huron-Manistee model.

The average value of TEMP for the Huron-Manistee was significantly higher than for the other Forests. It could be that loggers automatically deduct a set amount from every sale they bid on, regardless of the Forest Service estimate of road cost. In fact, if the estimated effect of TEMP from the Huron-Manistee NF model is subtracted from the mean of TEMP, the result is much closer to the range of the others.

Haul distance (HAUL) might also be expected to negatively impact stumpage price, but it was only significant for the Huron-Manistee NF model, and it was only significant at the 0.0782 level. In their study, Jackson and McQuillan (1979) concluded that transportation costs are poor predictors of stumpage prices. These results appear to support their conclusions.

As Buongiorno and Young (1984) discovered, individual species volume volumes were important predictors of STUMPAGE. Sugar maple sawtimber had a significant impact in all models, except the Huron-Manistee NF where all hardwoods are lumped together. Mixed hardwood sawtimber percentage did significantly affect STUMPAGE for the Huron-Manistee model, as well as the Nicolet NF and the Hiawatha NF. The mixed hardwoods category was not used very frequently for Ottawa NF sales, averaging less than 1 percent of total volume for all sales. Only one of the significant species volumes, spruce sawtimber, had a negative impact on STUMPAGE. That was for the Ottawa NF model and is probably indicative of a weak market for spruce.

It is interesting to note that none of the pulpwood volumes had a significant impact on average stumpage value. This could be due to nearly constant pulp values over the last ten years. The FOB mill price reported by Timber Mart-North from 1981 to 1989 for pulp bought in the Upper Peninsula of Michigan averaged around $40 per cord with very little variation when adjusted for inflation by the Producer's Price Index for lumber (U.S. Dept. of Labor 1981 - 1990).

The main impetus of this study was to discover the impact of the method of cut on stumpage value. The answer would seem to be that the impact is Forest specific. None of the cut methods used had a significant impact on sales from the Huron-Manistee NF. This could be due in part to the large number of payment units which were clearcut, almost 40 percent. Uneven-aged cutting methods were used on less than one-quarter of the payment units. Because of the similarities in cut methods used, cut method was simply not very good at explaining differences in stumpage value, even when using the most general measures (such as UNVOL and EVOL).

Only the percentage of the sale cut by even-aged methods was significant for the Ottawa NF model. It could be that the high value of sugar maple sawtimber outweighed any differences between cut methods, particularly for the uneven-aged methods. Sugar maple sawtimber averaged 16 percent of sales volume for all Ottawa NF sales. Loggers

would be likely to ignore how the timber was to be cut, instead, their main concern would be the quality (lumber grade) and quantity of sugar maple. Even-aged methods had a higher correlation with intolerant hardwoods such as yellow birch and black cherry, which require clearcuts or shelterwoods to reproduce. As the percentage of even-aged volume increased, so to would the percentage of higher value hardwoods.

The Hiawatha NF and the Nicolet NF models provide the most information about the interaction of cut method and stumpage value. This is because no one individual species-product dominates the composition of the average sale, as sugar maple does on Ottawa NF sales or as mixed hardwoods do on the Huron-Manistee. This can be seen in Figures 1, 2, 3, and 4 which display the percentage of sale volume in sawtimber by species for the Hiawatha NF, the Huron-Manistee, the Nicolet NF, and the Ottawa NF.

The Nicolet NF model shows a sharp decrease in STUMPAGE as the percentage of salvaged volume increases. For every one percent of sale volume being salvaged, STUMPAGE decreases by $0.16. That is consistent with the risks of salvage sales. The timber being cut might not all be sound, something which can be determined only after harvesting. Although Vasievich *et al.* (1988) recommend separate models for salvage sales, leaving the observations in the data set expands the model's applicability.

Both the Hiawatha NF and the Nicolet NF models show an

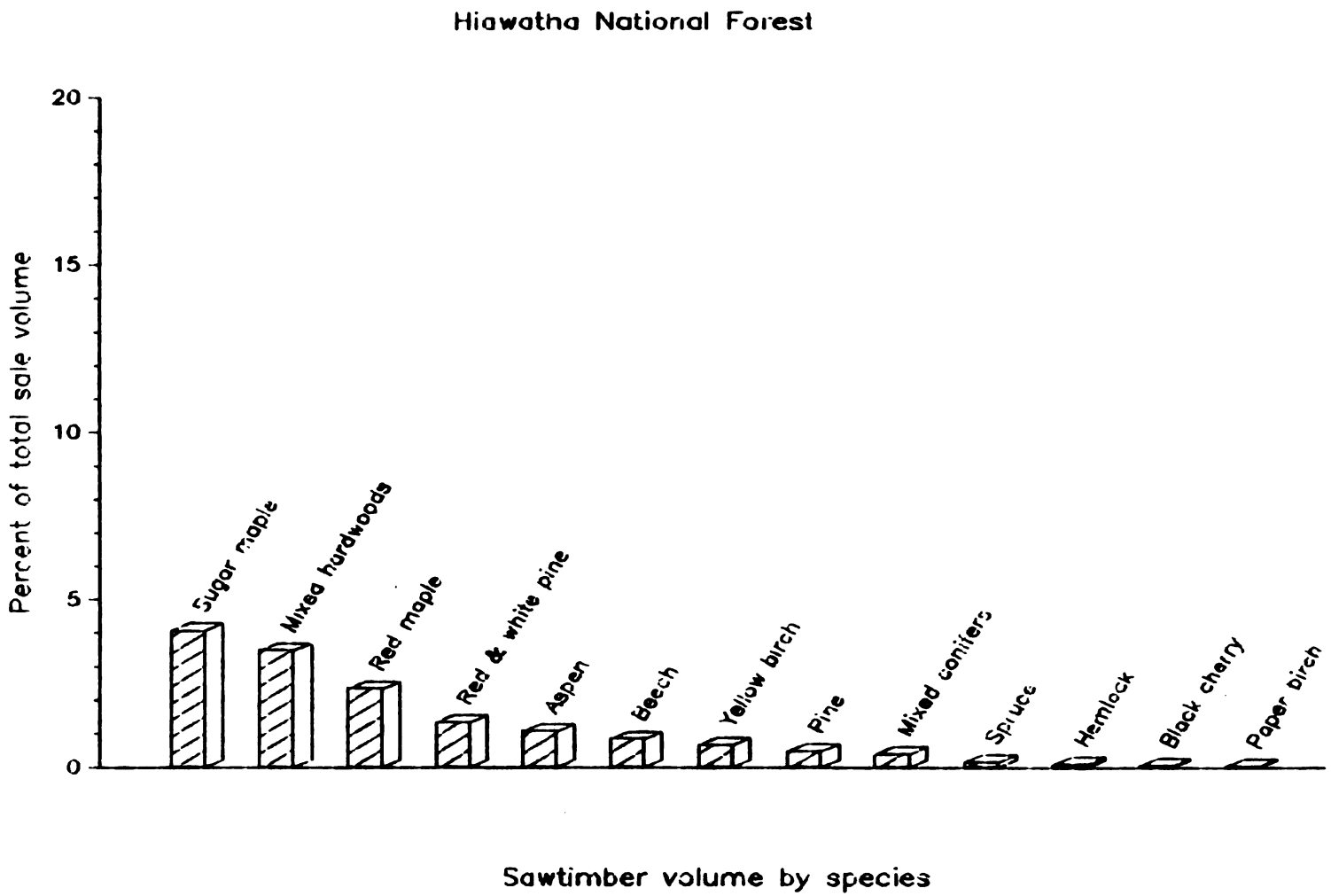

Figure 1. Sawtimber volume as a percentage of total sale volume, Hiawatha NF.

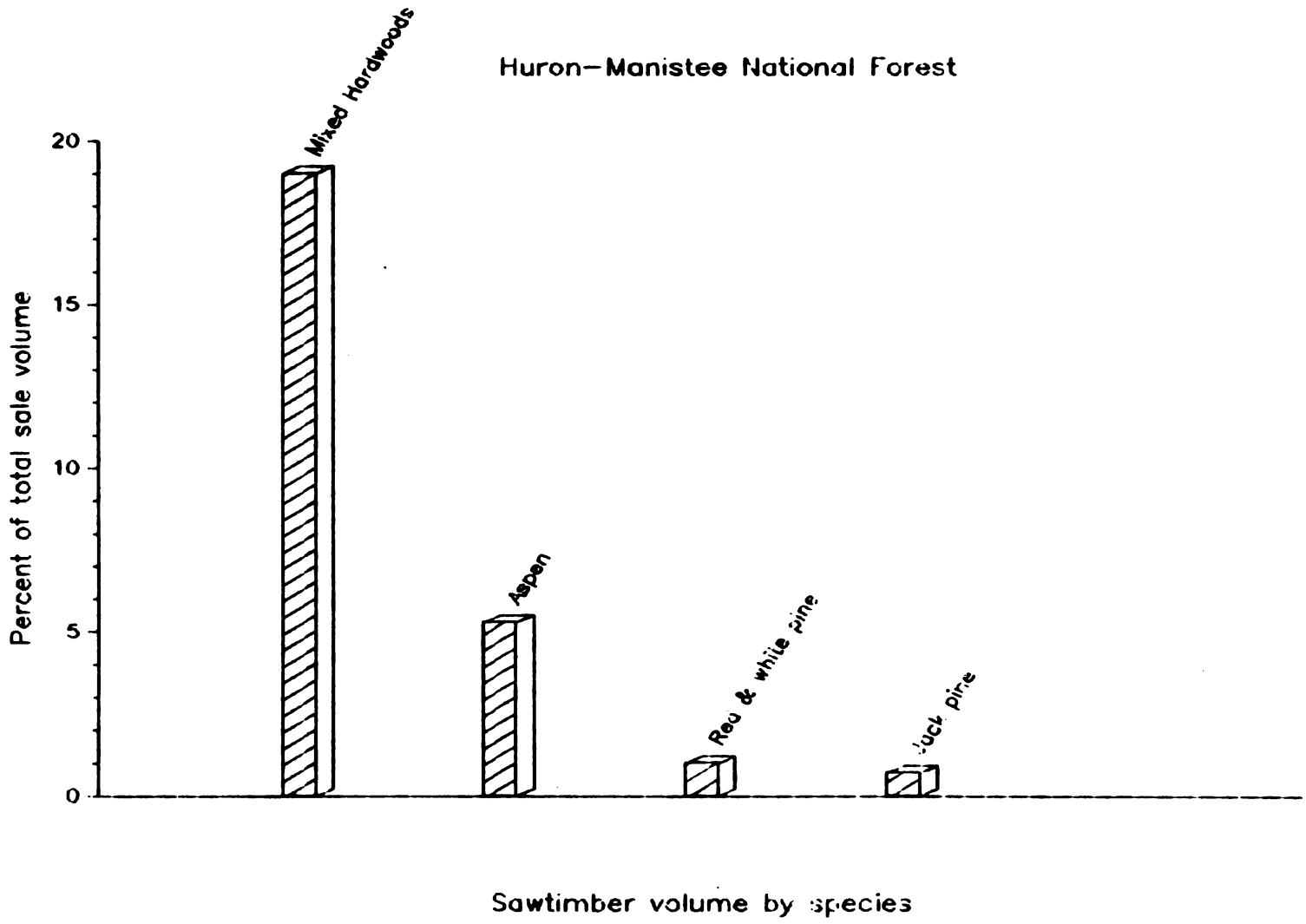

Figure 2. Sawtimber volume as a percentage of total sale volume, Huron–Manistee NF

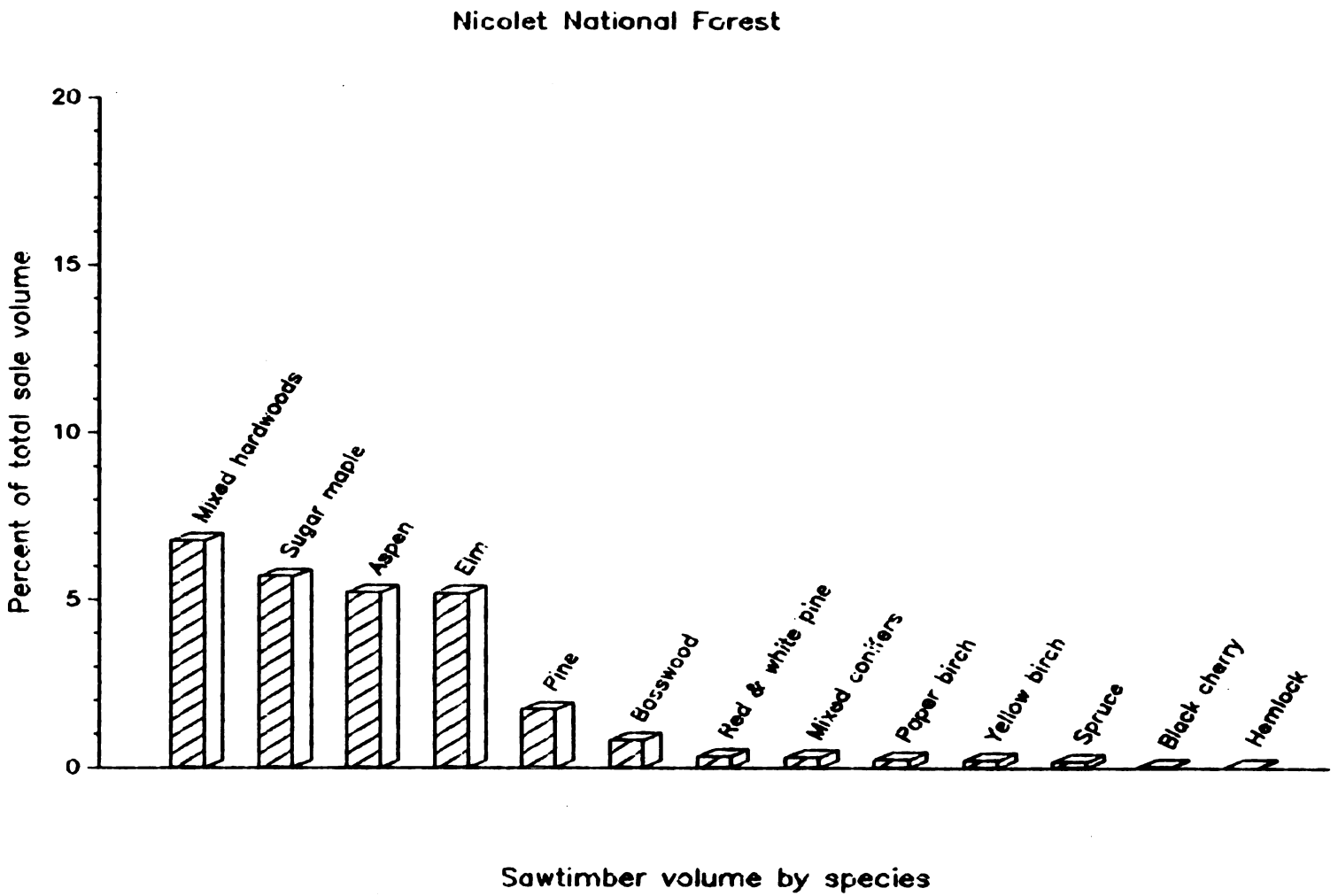

Figure 3. Sawtimber volume as a percentage of total sale volume, Nicolet NF.

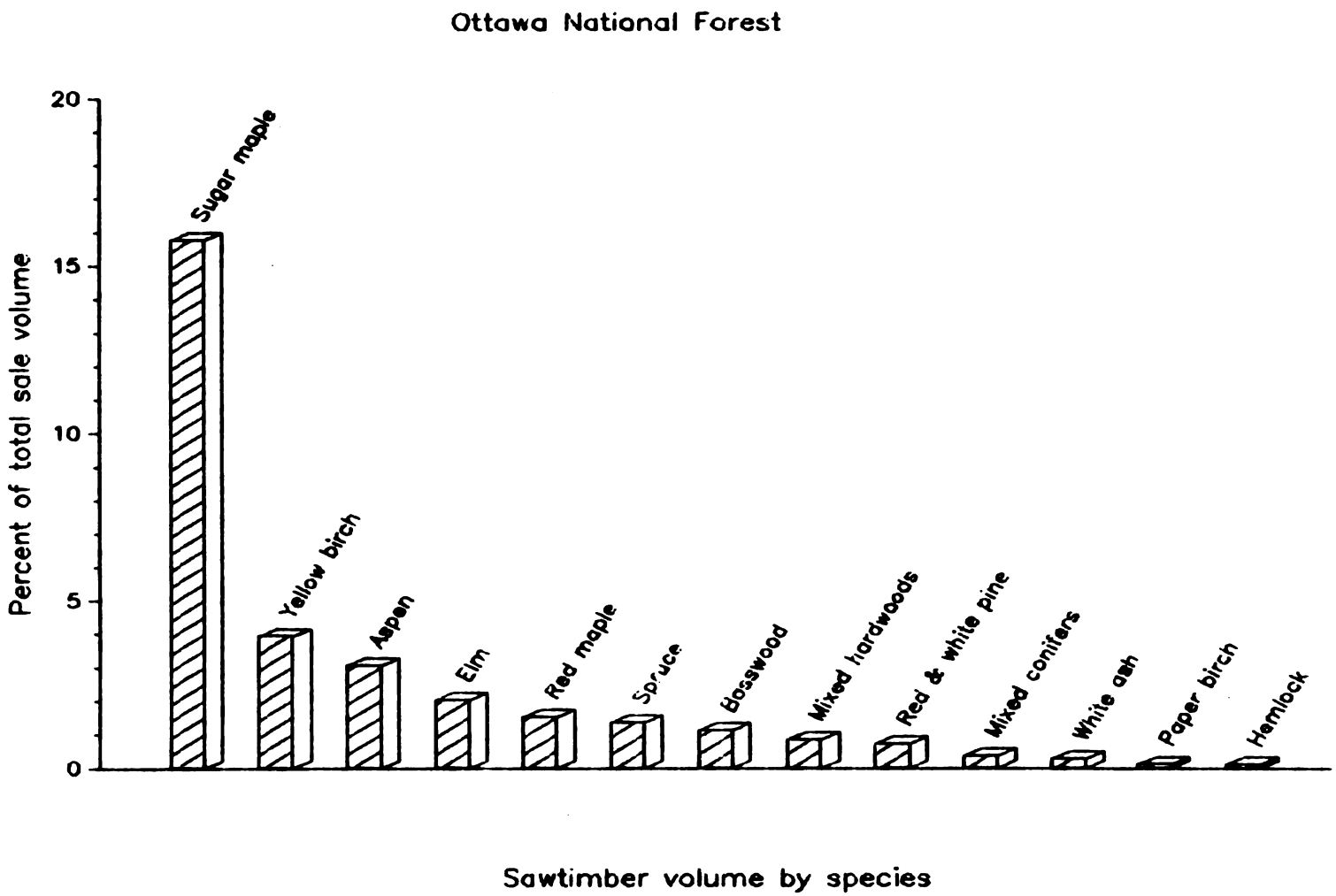

Figure 4. Sawtimber volume as a percentage of total sale volume, Ottawa NF.

increase in STUMPAGE as the number of thinning payment units increase. This could imply: 1) that thinnings are more cost effective than other methods; 2) that the species cut in the thinnings are more valuable; 3) that the Forest Service deliberately lowers the advertised rate for thinnings to entice buyers to cut otherwise marginal timber. The latter is probably the closest to the truth. Commercial thinnings are generally used to remove trees from a stand to allow more room for the remaining trees, and the removals are not the biggest or best trees in the stand. Thinnings cover a wide range of timber types, though, and some sales did include pine plantations which are almost always cut by row thinning. In those cases, thinning probably represents a cost savings.

The amount of clearcutting did significantly impact STUMPAGE in both the Nicolet NF model and the reduced Hiawatha NF model, however, in opposite directions. As the percentage of clearcut volume in the Nicolet NF sales increased, the stumpage price also increased. A sale which was completely clearcut would be expected to be worth $5.40 more per Mbf than a sale without clearcuts. The Hiawatha NF sales showed a decrease in stumpage price as the number of clearcut units increased. Since the average sale had 6 payment units, a sale which was completely clearcut would be worth about $3.35 less per Mbf than a sale with no clearcut payment units.

Lewis and Ramm (1990) have shown that clearcut units in

general correspond with lower valued sawtimber and pulp products for Hiawatha NF sales. This could cause the slight negative impact seen in the Hiawatha model. If the same correspondence were assumed for Nicolet NF sales, it would suggest that clearcutting is more cost effective than other methods, otherwise a decrease would be expected. On the other hand, the examplar clearcut species, aspen, was more prevalent in Nicolet NF sales than it was in Hiawatha NF sales (20.7% by volume verses 7.7%). Although it is not more valuable than other species which are usually clearcut, the demand for aspen is generally good because of its versatility.

Just two other cut method variables were found to have significant coefficients in the models. EMIX in the Nicolet NF model was significant in a negative direction. However, since only 6 of 855 payment units were cut with a mix of even-aged methods, this variable would probably not be applicable to a different set of data. The number of road units was found to negatively impact STUMPAGE in the Hiawatha model, but here too, there were a limited number of such sales. It is possible that all volume removed for roads (both temporary and permanent) was not reported separately in all sales.

RECOMMENDATIONS FOR FUTURE WORK

Several extensions of this study are possible. The economies of scale might play a greater part in determining

STUMPAGE than was shown by the models. Perhaps non-linear functions of the economies of scale variables are needed. For example, a non-linear function of logging costs could be used in a model. As mentioned previously, stumpage value can be defined as the difference between the timber's selling price and total logging costs where total logging costs are made up of fixed and variable costs. Average fixed costs tend to decrease non-linearily as volume harvested increases. On the other hand, average variable costs tend to increase exponentially as volume increases because of the need for more logging equipment, worker overtime, etc. When plotted against total volume, average total costs appear as a U-shaped curve, increasing for low and high timber volumes (Randall 1987). Including variables to account for these costs might provide a better fit to the data. Also, even though total sale acreage was not found to be significant in the models, the logarithm (natural or base 10) of total acreage might be.

Another variation on model development would be the pooling of the data from all four Forests to create one regression model. Although it was shown that differences exist between the variable means and their variances, there are more advanced regression techniques available to deal with these problems, such as generalized or weighted least squares (see for example Fomby *et al.* 1988). Using these techniques on pooled data can result in lower independent variable standard errors. Even though the model might not

provide as good a fit to the data, the larger data base could provide more information than separate models. If, for instance, one cut method prevails on a Forest, it could be masking the effects of other cut methods. Also, the problem of extremely high values of stumpage distorting the fit of the regression would be reduced.

One more area of research could include further exploration of zero bid sales. It is possible that the cut method(s) to be used on the sale was the reason why it received no bids. Many zero bid sales are reappraised and sold through direct negotiation. The difference between the advertised rate of the unsold sale and the negotiated selling price could be incorporated as an underbid variable. This would be synonymous with a negative overbid variable. Overbid was used in this study to account for both competition effects and improperly specified timber values or cost allowances, so it would be logical to extend it to measure underbid. A dummy variable should also be included in the regression signifying the sale as negotiated so as to capture any other variation not explained by underbid, such as a favored buyer.

Finally, the study could be extended to include data from other National Forests in the Great Lakes Region such as the Superior National Forest in Minnesota or the Chequamegnon National Forest in Wisconsin. It might be possible to include sales from State Forests with some modifications. Jackson (1987) found significant differences

between the stumpage value paid for National Forest timber and for State Forest timber in Montana due in part to differences in sale size. He did mention that the National Forest sales tended to use more sophisticated and costly logging systems (i.e., skyline logging) and that they were scrutinized by outside agents more than locally conducted sales.

SUMMARY

The biggest problem to overcome was how to relate method of cut to stumpage values. The Forest Service calculates only one price for each species in a sale, even though the species might occur in several payment units which are cut using different silvicultural methods. Loggers wishing to purchase the timber bid one price for all timber of the same species. Several approaches were tried using different combinations of cut method variables, species volume variables, and sale characteristic variables. Multiple regression analysis was used to help choose the best models.

It was determined that four separate models would be needed, one for each National Forest in the study. The mix of cut methods used was shown to be statistically different between the National Forests, as were many of the other variables to be used in the regression analysis. In the interest of model sensitivity to cutting method impact, four models were developed rather than using dummy variables to show membership to a National Forest.

The models indicate that certain cut methods do affect the stumpage price paid. On the Hiawatha National Forest, one additional thinning payment unit increased the average stumpage price paid per Mbf by $1.02, while one additional road unit decreased the average stumpage price paid by $2.52

per Mbf. When sales dominated by high valued species were removed from the data set, an additional clearcut unit also decreased the average stumpage price paid per Mbf by $0.59.

On the Nicolet National Forest, one additional thinning payment unit increased the average stumpage price per Mbf by $0.31. As the percentage of sale volume being clearcut increased, so too did the average stumpage price paid per Mbf, on the order of $0.55 for every one percent increase in clearcut volume. The average stumpage price decreased by $1.58 for every one percent increase in volume being cut from salvage payment units. Likewise, an additional payment unit cut by a mix of even-aged methods (shelterwood, clearcut, overstory removal) caused a decrease in the average stumpage price paid of $4.36 per Mbf.

The Ottawa National Forest model provided only a general indication of the effect of cut method. A sale with 100% of the volume cut by even-aged methods had an increase in average stumpage price paid per Mbf of $7.12. On the Huron-Manistee National Forest, none of the cut methods were found to be significant.

The evidence suggests that the logging systems used in the Lake States are flexible. In most cases, the effects seem to be more related to species being cut than to the cost savings of a particular method. As an example, clearcuts induced opposite effects on Hiawatha NF sales and Nicolet NF sales. If the effect was related to costs of the particular method, the direction of the effects should be

the same. Increased commercial thinning did result in an increase of stumpage value for both Hiawatha NF sales and Nicolet NF sales, and it is probably related to lower minimum bid rates set by the Forest Service for the timber. Thinnings do not usually remove the best trees, so an increase in stumpage value would not be expected solely because of the species being cut. Shelterwood cuts, selection cuts, overstory removals, and improvement cuts did not significantly affect the stumpage price in any of the models.

The difference between the high bid and the advertised rate was found to be one of the more important predictors of stumpage value. Sugar maple sawtimber percentage was also important on all but the Huron-Manistee NF sales. Sugar maple is one of the higher valued species harvested from the three northern forests, and also one of the more abundant. The cost of building roads, both temporary and permanent, was also significant in the models.

Finally, the study does provide some insight into what sort of variables can used to determine the effect of cut method on stumpage value. It also shows where the information can be located (Forest Service forms used to record the data) in the event that other researchers might be interested in examining the same relationships in other regions.

APPENDIX

USDA - FOREST SERVICE

REPORT OF TIMBER SALE
CONVERTIBLE AND NONCONVERTIBLE PRODUCTS
(REF. FSM 2490)

REGION 09
STATE 26
ACRES IN SALE 0000150

FOREST Ottawa 07
COUNTY 071

DISTRICT (OR AREA) 03 Iron River
SALE NUMBER 037
SALE NAME Wildcat
LEGAL DISCRIPTION T46N,R36W, T45N, R36W

QTR. 2-83
COMPARTMENT 0007

END DATE 03/29/83
SALVAGE N
CONT NO. 07-1991

STATUS 1
PRICING METHOD 1
CONTRACT FORM 2400 6 T

SBA SET-ASIDE N
PLAN'D SAB COL $ 0000120
CONTRACTING OFFICER S

APP. BASE PERIOD 1-83
TERM DATE 09/30/85
METHOD OF SALE S

ZONE 1
CONTRACT DATE 03/29/83
MKT. INCENTIVE 6

SPECIES	SPEC CODE	PROD UNIT	VOLUME	ADVERTISED RATES $	STAT. HIGH BID $	HIGH BIDDER $	2ND HIGH BIDDER $	3RD HIGH BIDDER $	4TH HIGH BIDDER $	5TH HIGH BIDDER $	6TH HIGH BIDDER $	7TH HIGH BIDDER $	8TH HIGH BIDDER $	9TH HIGH BIDDER $	10TH HIGH BIDDER $	11TH HIGH BIDDER $	12TH HIGH BIDDER $
RM	316	1-7	11	77.12	53.96	77.12	80.00	78.12	77.12								
SW	318	1-7	119	76.38	79.84	103.00	99.00	86.50	86.38								
YB	371	1-7	32	122.37	126.34	149.50	132.00	141.20	122.37								
A	740	1-7	5	12.53	1.00	12.53	12.53	15.30	12.53								
BW	950	1-7	47	93.99	106.84	130.00	140.00	94.10	93.99								
E	970	1-7	22	47.94	51.84	75.00	85.00	65.20	47.94								
MH	004	2-9	216	2.21	0.60	4.39	2.21	3.79	2.21								
A	740	2-9	12	4.06	0.60	4.06	4.06	7.60	4.06								
TOTAL AVER		7	380	52.41	53.79	70.29											

(675)

SUMMARY OF BIDDERS

RANK	NAME	SBA CLASS	IDENTIFICATION NUMBER	TOTAL VALUE OF BID
HIGH 1	Pine River Lumber	S		26,708.93
2	Francois Forest Prod.	S		25,923.73
3	Northern Hardwoods	L		22,514.66
4	Wenos Lumber	S		21,104.32
5				
6				
7				
8				
9				
10				
11				
12				

I certify that I have personally examined the Bids submitted for this sale and that this is an accurate record thereof.

Signature: Robert C Mackinder
TITLE ROBERT C. MACKINDER Contracting Officer
DATE 03/29/83

REMARKS

Total Advertised Value: 19,914.32
Total Base Rate Value: 2,319.80

236 MBF Sawtimber - 100% Small Business

DISTRIBUTION Orig. and 1cc to RO (orig. to FU), 1cc to RO of SBA

Figure 5. U.S. Forest Service Form FSM-2490.

USDA FOREST SERVICE

APPRAISAL SUMMARY – TRANSACTION EVIDENCE

FSH 2409.22 Ch. 10

SALE NAME: Wildcat (Compartments 7 & 21)

SUMMARY PREPARED BY: C. Kolesar

DATE: 02/24/83

CARD TYPE 5

SPECIFIED RD. CONST. (Miles): 0.6

RECONSTRUCTION (Miles): 0.1

PURCH. CR. LIM.: 000 3886

PRODUCT APPRAISED TO: Trout Creek

HAUL MILES: 0 2 5

TEMP. RD. CONST. (Miles): 0.3

TEMP. RD. COST: 00002 63

BASE PERIOD: 2/82 - 1/83

								CARD TYPE 7 Unit of Measure	
1 Product Unit	1-7	1-7	1-7	1-7	1-7	1-7		7	
2 Species	RM	SM	YB	A	BW	E		Total or Average	
3 Species Code	316	318	371	740	950	970			
4 % By Species	3	31	9	1	12	6		T 62 100%	
5 Volume	11	119	32	5	47	22		T 236 17-23	
6 Base Period Price	52.52	88.19	125.33	12.26	96.02	50.48		A 88.00	(20767.69)
7 Market & Quality Adjustment	+38.85	+2.35	+16.32	-	+14.09	+8.47			
8 Adj. Base Price (6 + 7)	91.37	90.54	141.65	12.26	110.11	58.95		A 96.80	(22845.50)
9 Falling and Bucking									
10 Skidding and Loading									
11 Loaded Adj. (9 + 10)									
12 Base Haul Cost	19.32	19.32	19.32	19.32	19.32	19.32			
13 Sale Haul Cost	25.11	25.11	25.11	18.50	25.11	25.11		A 24.97 39-42	(5892.91)
14 Haul Cost Adj. (12 - 13)	-5.79	-5.79	-5.79	+0.82	-5.79	-5.79			
15 Base Road Maint. Cost	1.53	1.53	1.53	1.53	1.53	1.53			
16 Sale Rd. Maint. Cost	1.01	1.01	1.01	1.01	1.01	1.01		A 1.01 43-46	(238.36)
17 Rd. Maint. Cost Adj. (15 - 16)	+0.52	+0.52	+0.52	+0.52	+0.52	+0.52			
18 Base Contractual Cost	0.23	0.23	0.23	0.23	0.23	0.23			
19 Sale Contractual Cost	0.13	0.13	0.13	0.13	0.13	0.13		A 0.13 55-58	(30.68)
20 Contractual Cost Adj. (18 - 19)	+0.10	+0.10	+0.10	+0.10	+0.10	+0.10			
21 Base Temporary Rd. Cost	1.18	1.18	1.18	1.18	1.18	1.18			
22 Sale Temporary Rd. Cost	1.12	1.12	1.12	1.12	1.12	1.12		A 1.12 71-74	(264.32)
23 Temporary Rd. Cost Adj. (21 - 22)	+0.06	+0.06	+0.06	+0.06	+0.06	+0.06			
24 Unusual Costs									
25 With No Base Cost Adjustment									
26 -									
27 -									
28 -									
29									
30 Specified Road Cost	(16.46)	(16.46)	(16.46)	(16.46)	(16.46)	(16.46)			
31									
32									
33									
34 Total Adjustments									
35 (Lines 11, 14, 17, 20, 23 & 26)	-5.11	-5.11	-5.11	+1.50	-5.11	-5.11			
36 Stumpage Rates (8 + 35)	86.26	85.43	136.54	13.76	105.00	53.84		A 91.83	(21672.59)
37									
38 Risk Adjustment	-9.14	-9.05	-14.17	-1.23	-11.01	-5.90			
39									
40 Indicated Advertised Rates (36 + 38)								T 19388.24	
	77.12	76.38	122.37	12.53	93.99	47.94		A 82.15	
41 Base rates	6.00	10.00	10.00	1.00	10.00	6.00		A 9.25	(2183.00)
42 Adjustments to Line 40 Rates								A	
43 ADVERTISED RATES (40 + 42 + 48) 42-47								T 19388.24	
	77.12	76.38	122.37	12.53	93.99	47.94		A 82.15	
44 Indicated Net Rates (43 - 30 - 48)	60.66	59.92	105.91	-3.93	77.53	31.48		A 65.69	(15503.68)
45 APPRAISED NET RATES* 48-53	51.92	51.18	97.17	1.00	68.79	22.74		A 57.24	(13509.39)
46 Line 45 Adjustment	-8.74	-8.74	-8.74	+4.93	-8.74	-8.74			
47. Timber Property Value								T	
48. Timber Property Rates								A	

FS 2409.17 (11/81)

Figure 6. U.S. Forest Service form FSH-2409.22

Table 11. Explantion of symbols used in the Appendix.

Forest and District codes

4 Huron-Manistee

(4 Huron)
5 Mio
6 Tawas
7 Harrisville

(24 Manistee)
1 Baldwin
2 Cadillac
3 Manistee
4 White Cloud

6 Nicolet

2 Eagle River
3 Florence
4 Lakewood
5 Laona

7 Ottawa

1 Bergland
2 Bessemer
3 Iron River
4 Kenton
5 Octonogan
6 Watersmeet

10 Hiawatha

1 Rapid River
2 Manistique
3 Munising
4 Sault Ste. Marie
5 St. Ignace

Table 11. (Cont'd.).

An S following a sale name signifies that it was listed as a salvage sale.

SBA Class	S	Small
	L	Large
	N	No classification

All dollar values are actual and have not been adjusted by the Consumer's Price Index.

Table 12. Values of Hiawatha National Forest variables.

Sale name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	SBA Class SBA	Total Acres ACRE	Pmt. Units PU	# of Bids BIDS
BCD	19496	10	4	30-Sep-87	31-Oct-90	37.6	N	158	8	1
Bear	18282	10	4	09-Jul-85	31-Oct-87	28.1	S	40	1	1
Borealis	19355	10	3	26-Jun-87	30-Apr-94	83.3	S	1066	10	4
Camp A	17540	10	3	03-May-84	30-Apr-86	24.2	S	251	5	6
Cat & Mouse	18050	10	3	28-Jan-85	31-Oct-91	82.2	L	1455	15	1
CCC Hardwoods	19280	10	5	12-May-87	31-Oct-92	66.6	S	465	13	2
Clark	18506	10	4	05-Dec-85	31-Oct-87	23.2	N	46	2	2
Corner	1532	10	2	24-Sep-80	31-Oct-85	62.1	N	395	3	2
County Line	20445	10	1	13-Jun-89	30-Apr-92	35.1	N	310	5	6
Dad's Camp	19306	10	4	21-May-87	31-Oct-90	42.0	N	100	3	3
Deer Creek	1603	10	3	29-Dec-81	31-Oct-86	58.9	L	558	8	1
Dukes	18464	10	3	01-Nov-85	30-Apr-88	30.4	N	124	6	2
East Barrett	19413	10	5	11-Aug-87	31-Oct-92	63.6	S	240	4	3
East Spur Hardwoods	18042	10	5	23-Apr-85	30-Apr-87	24.6	N	15	7	5
FH-13 Followup	18258	10	1	18-Jun-85	30-Apr-89	47.1	N	184	6	6
Flow West	1647	10	3	10-Jan-83	31-Oct-87	58.5	N	725	10	1
Gleason Lake East	19637	10	1	24-Nov-87	31-Oct-91	47.9	N	572	6	2
Hound Dog Hollow	19520	10	3	14-Oct-87	30-Apr-92	55.3	N	451	6	2
Johnson Creek Hardwoods	18613	10	1	04-Mar-86	31-Oct-90	56.7	N	383	10	6
Johnson Lookout	1512	10	3	07-Jul-80	31-Oct-84	52.6	N	446	4	3
Johnson Lookout Resale	18290	10	3	09-Jul-85	30-Apr-87	22.0	N	156	2	2
Kenobo Lake	19611	10	1	17-Nov-87	31-Oct-92	60.3	N	925	8	6
Kimble Lake	1641	10	3	17-Dec-82	31-Oct-86	47.1	N	521	6	1
LaRock Hardwoods	19074	10	4	02-Dec-86	31-Oct-88	23.3	N	71	3	1
Lawson Road	18175	10	3	01-May-85	30-Apr-87	24.3	N	64	3	7
Lawson Road Resale	19330	10	3	12-Jun-87	30-Apr-88	10.8	L	49	2	9
Little Pole Lake	17573	10	1	25-May-84	31-Oct-90	78.3	L	924	20	2
Lost Luck Hardwoods	18662	10	3	01-Apr-86	31-Oct-88	31.5	N	166	3	8
Lower Farm Hill	1645	10	5	15-Dec-82	30-Apr-85	28.9	N	73	2	3
Maple Hill West	20064	10	5	05-Oct-88	31-Oct-92	49.6	S	169	4	4
Markey Lee	18829	10	4	09-Jul-86	31-Oct-88	28.2	N	66	2	3
McNearney Lake	19132	10	4	23-Dec-86	30-Apr-89	28.6	N	82	4	1
Mormon Creek Hardwoods I	1638	10	1	25-Oct-82	31-Oct-83	12.4	N	50	1	1
Mormon Creek Hardwoods II	19868	10	1	17-May-88	31-Oct-92	54.3	N	377	9	4
Mormon Creek Resale	18274	10	1	25-Jun-85	31-Oct-86	16.4	N	50	1	1
Nivation	1676	10	3	29-Jun-83	30-Apr-88	58.9	L	465	7	1
North Country Hardwoods	17466	10	5	09-Apr-84	30-Apr-88	49.4	S	251	4	1
Nugget	19777	10	5	09-Mar-88	31-Oct-93	68.7	N	567	14	2
Paradise	19314	10	3	22-May-87	30-Apr-90	35.8	L	574	6	3
Pine Plains	19926	10	3	08-Jul-88	30-Apr-92	46.4	N	214	4	4
Play it Again	19553	10	4	29-Oct-87	31-Oct-91	48.8	N	154	3	3
Poplar Lake	19389	10	1	21-Jul-87	31-Oct-89	27.8	N	190	4	4
Porcupine	19363	10	1	30-Jun-87	31-Oct-90	40.6	N	393	7	5
Quarry Road Hardwoods	17631	10	5	29-Jun-84	31-Oct-86	28.5	S	27	9	3
Railhead Hardwoods	18605	10	3	03-Mar-86	31-Oct-86	8.1	N	188	1	3

Table 12. (Cont'd.).

Sale name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	SBA Class SBA	Total Acres ACRE	Pmt. Units PU	# of Bids BIDS
R.E.O.	18126	10	3	24-Oct-83	30-Apr-89	67.2	N	656	9	1
Samson II	17649	10	4	10-Jul-84	31-Oct-85	15.9	S	60	1	2
Sand Lilly	19603	10	3	12-Nov-87	30-Apr-94	78.7	S	894	10	2
Satago	19629	10	5	18-Nov-87	31-Oct-90	35.9	S	66	3	3
Silver	18852	10	3	25-Jul-86	30-Apr-92	70.2	N	428	4	3
Sky's the Limit	20205	10	3	13-Dec-88	30-Apr-93	53.3	N	473	7	2
South Sugarbush	1560	10	3	30-Mar-81	31-Oct-82	19.3	S	181	1	2
Spinulous	19116	10	4	18-Dec-86	30-Apr-89	28.8	S	51	2	2
Spring South	20106	10	5	19-Oct-88	31-Oct-93	61.3	N	151	5	2
Steam Engine Run	19876	10	3	17-May-88	30-Apr-89	11.6	N	442	5	3
Stillman	20197	10	3	09-Dec-88	30-Apr-93	53.4	N	473	7	3
Three Cedar Murphy	20213	10	2	19-Dec-88	31-Oct-94	71.4	N	720	20	3
Twenty-four Hardwoods	1631	10	5	26-Aug-82	30-Apr-84	20.4	N	13	5	2
Upper Farm Hill	18837	10	5	17-Jul-86	31-Oct-88	27.9	S	35	3	3
Vertz	19348	10	5	17-Jun-87	31-Oct-90	41.1	S	66	2	2
Wanna	19450	10	4	29-Jul-87	31-Oct-89	27.5	N	42	1	1
Wanna Two	20015	10	4	20-Sep-88	31-Oct-91	37.9	N	80	2	2

Table 12. (Cont'd.).

Sale name NAME	Adv. Rate ADVER	Stat Hi bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982= 100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPEC$
	$/Mbf	$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$
BCD	10.38	10.38	0.00	9302	86.53	115.0	24.8	41	24	0
Bear	14.37	16.75	2.38	2355	98.81	107.8	36.8	49	33	0
Borealis	4.39	11.04	6.65	47624	85.70	113.5	47.0	9	53	350
Camp A	4.66	14.26	9.60	13202	96.16	103.4	51.1	16	55	0
Cat & Mouse	8.71	11.74	3.03	69590	92.96	105.5	47.3	12	52	33808
CCC Hardwoods	9.17	12.93	3.76	17433	87.10	113.1	23.9	13	26	0
Clark	11.98	13.02	1.04	2267	92.43	109.3	23.4	37	21	0
Corner	11.18	20.06	8.88	31935	N/A	84.0	40.0	40	40	4377
County Line	11.71	22.32	10.61	28862	95.40	124.1	35.2	37	35	5997
Dad's Camp	3.71	4.83	1.12	3575	78.86	113.1	24.3	40	24	0
Deer Creek	1.97	3.11	1.14	7570	84.17	94.0	49.0	49	49	9346
Dukes	50.95	66.49	15.54	35993	125.01	109.0	17.2	1	42	0
East Barrett	12.46	18.25	5.79	11069	91.12	114.4	20.7	20	21	0
East Spur Hardwoods	17.65	29.14	11.49	3744	96.30	106.9	20.4	21	20	0
FH-13 Followup	6.23	9.61	3.38	12246	89.24	107.6	31.2	33	31	12319
Flow West	1.25	1.32	0.07	2299	83.36	97.8	47.1	10	51	5292
Gleason Lake East	13.07	20.64	7.57	37798	85.02	115.4	38.2	40	38	0
Hound Dog Hollow	21.13	23.95	2.82	50012	94.00	115.3	41.1	7	48	0
Johnson Creek Hardwoods	8.81	12.64	3.83	24537	86.94	108.8	36.1	38	36	8356
Johnson Lookout	1.67	8.70	7.03	15514	N/A	82.7	44.2	44	44	0
Johnson Lookout Resale	5.33	11.26	5.93	6332	90.54	107.8	44.4	6	51	0
Kenobo Lake	14.84	21.19	6.35	57191	86.16	115.4	38.3	40	38	0
Kimble Lake	6.66	8.59	1.93	16812	88.87	97.6	45.1	22	50	3167
LaRock Hardwoods	13.91	14.79	0.88	4000	81.78	110.5	22.3	36	20	0
Lawson Road	51.81	87.32	35.51	30000	134.08	107.3	13.0	3	44	0
Lawson Road Resale	58.61	110.66	52.05	27388	127.24	113.5	13.0	3	44	0
Little Pole Lake	1.28	5.46	4.18	26925	95.01	103.4	34.3	36	34	24932
Lost Luck Hardwoods	8.87	15.10	6.23	11419	90.57	108.6	50.3	12	58	835
Lower Farm Hill	10.35	17.76	7.41	6483	100.04	97.6	22.6	22	23	0
Maple Hill West	11.74	19.85	8.11	7433	96.59	120.2	22.3	49	14	0
Markey Lee	10.42	12.22	1.80	3422	84.71	109.5	14.6	30	14	0
McNearney Lake	13.27	14.24	0.97	4293	86.48	110.5	25.6	38	22	0
Mormon Creek Hardwoods I	13.58	21.54	7.96	4025	89.29	98.2	27.3	29	27	0
Mormon Creek Hardwoods II	6.01	14.83	8.82	17183	86.35	117.5	34.1	35	34	9308
Mormon Creek Resale	14.49	15.46	0.97	3007	89.66	107.6	27.3	29	27	0
Nivation	1.93	1.93	0.00	3215	91.70	99.5	44.7	10	51	6382
North Country Hardwoods	10.89	12.10	1.21	9960	101.82	103.1	14.2	16	13	0
Nugget	8.63	13.46	4.83	20118	88.43	116.5	21.0	50	16	0
Paradise	12.33	16.18	3.85	29596	89.92	113.1	67.5	23	79	0
Pine Plains	7.96	18.49	10.53	18063	88.28	118.5	56.8	9	63	0
Play it Again	3.44	6.05	2.61	3595	79.79	115.3	22.0	0	22	0
Poplar Lake	4.73	8.69	3.96	7430	83.18	113.8	31.3	34	31	8579
Porcupine	16.83	21.48	4.65	23797	89.88	113.5	27.4	29	27	0
Quarry Road Hardwoods	13.02	18.67	5.65	4000	105.28	103.7	15.1	20	12	0
Railhead Hardwoods	10.03	12.57	2.54	8251	89.65	108.8	56.4	4	63	0

Table 12. (Cont'd.).

Sale name NAME	Adv. Rate ADVER	Stat Hi bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982=100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPECS
	$/Mbf	$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$
R.E.O.	2.29	2.38	0.09	4577	94.85	101.0	51.1	3	58	0
Samson II	7.07	11.11	4.04	3592	86.10	104.1	12.0	0	12	0
Sand Lilly	16.69	17.12	0.43	79177	91.65	115.4	56.4	17	63	0
Satago	12.35	17.45	5.10	2793	86.25	115.4	20.8	20	21	0
Silver	4.85	10.13	5.28	26197	87.46	109.5	48.5	10	53	0
Sky's the Limit	16.53	19.22	2.69	31860	95.60	120.5	41.3	9	50	2400
South Sugarbush	10.02	11.63	1.61	4560	82.75	88.5	43.0	43	43	0
Spinulous	5.90	10.20	4.30	1581	72.00	110.5	15.0	0	15	0
Spring South	6.77	13.17	6.40	8917	89.39	120.2	24.4	54	19	0
Steam Engine Run	15.98	17.32	1.34	36096	89.30	117.5	44.6	10	51	7706
Stillman	11.56	13.53	1.97	30960	88.75	120.5	49.6	12	53	4874
Three Cedar Murphy	5.39	13.14	7.75	50689	87.88	120.5	55.6	26	59	16686
Twenty-four Hardwoods	14.71	22.00	7.29	3001	91.56	97.7	19.2	21	18	0
Upper Farm Hill	18.45	37.53	19.08	3678	107.51	109.5	20.6	20	21	0
Vertz	13.25	16.43	3.18	3089	93.11	113.5	16.1	26	13	0
Wanna	9.74	16.66	6.92	2807	88.21	113.8	34.8	48	32	0
Wanna Two	13.50	15.42	1.92	4109	95.81	119.8	38.5	51	35	0

Table 12. (Cont'd.).

Sale name NAME	Avg. Spec SPEC	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOL	Avg. Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	Shelt Volume SHELT	Imp Volume IMP
	$/Mbf	$	$/Mbf	Miles	Mbf	Mbf/acre	Mbf	Mbf	Mbf	Mbf	Mbf
BCD	0.00	250	0.28	0.5	896	5.67	604	292	608	0	0
Bear	0.00	0	0.00	0.0	141	3.52	0	141	0	0	0
Borealis	0.08	2289	0.53	1.0	4313	4.05	931	3040	342	590	2395
Camp A	0.00	669	0.72	1.0	926	3.69	514	411	518	0	0
Cat & Mouse	5.71	2289	0.39	1.0	5926	4.07	1375	4550	690	281	2154
CCC Hardwoods	0.00	850	0.63	0.5	1349	2.90	535	139	535	0	0
Clark	0.00	225	1.29	0.4	174	3.79	0	174	0	0	0
Corner	3.13	1148	0.72	0.8	1592	4.03	293	1299	292	0	0
County Line	4.64	3868	2.99	1.4	1293	4.17	0	1293	0	0	0
Dad's Camp	0.00	400	0.54	0.8	740	7.40	740	0	742	0	0
Deer Creek	3.84	955	0.39	1.0	2437	4.37	673	925	676	0	0
Dukes	0.00	366	0.68	0.0	541	4.37	0	541	0	0	0
East Barrett	0.00	0	0.00	0.0	607	2.53	169	438	169	0	0
East Spur Hardwoods	0.00	0	0.00	0.0	128	8.57	0	128	0	0	0
FH-13 Followup	9.67	1169	0.92	1.0	1274	6.92	736	537	688	0	0
Flow West	3.05	447	0.26	0.0	1738	2.40	9	1274	0	0	444
Gleason Lake East	0.00	2958	1.62	0.3	1831	3.20	0	1831	0	0	0
Hound Dog Hollow	0.00	200	0.10	0.0	2089	4.63	0	1750	0	0	843
Johnson Creek Hardwoods	4.30	1609	0.83	0.9	1941	5.07	281	1660	274	0	727
Johnson Lookout	0.00	0	0.00	0.0	1783	4.00	0	1783	0	0	0
Johnson Lookout Resale	0.00	601	1.07	0.5	562	3.60	0	562	0	0	562
Kenobo Lake	0.00	3376	1.25	1.0	2699	2.92	0	2248	0	0	0
Kimble Lake	1.62	525	0.27	0.7	1958	3.76	382	1139	384	0	0
LaRock Hardwoods	0.00	200	0.74	0.4	271	3.81	0	271	0	0	0
Lawson Road	0.00	0	0.00	0.0	344	5.37	0	344	0	0	0
Lawson Road Resale	0.00	0	0.00	0.0	248	5.05	0	248	0	0	0
Little Pole Lake	5.06	1753	0.36	2.1	4930	5.34	2269	2661	2014	142	422
Lost Luck Hardwoods	1.10	294	0.39	0.0	756	4.56	0	363	0	0	51
Lower Farm Hill	0.00	85	0.23	0.1	365	5.00	0	365	0	0	0
Maple Hill West	0.00	0	0.00	0.0	375	2.22	0	375	0	0	0
Markey Lee	0.00	0	0.00	0.0	280	4.24	0	280	0	0	0
McNearney Lake	0.00	300	1.00	0.6	302	3.68	0	302	0	0	0
Mormon Creek Hardwoods I	0.00	400	2.14	0.0	187	3.74	0	187	0	0	187
Mormon Creek Hardwoods II	8.03	2743	2.37	0.2	1159	3.07	261	898	254	0	0
Mormon Creek Resale	0.00	0	0.00	0.0	194	3.89	0	194	0	0	195
Nivation	3.83	505	0.30	0.3	1667	3.59	221	0	217	0	0
North Country Hardwoods	0.00	429	0.52	0.2	823	3.28	204	619	204	0	341
Nugget	0.00	650	0.43	0.6	1495	2.64	0	1094	0	0	1025
Paradise	0.00	604	0.33	0.0	1829	3.19	0	1829	0	0	1027
Pine Plains	0.00	755	0.77	1.2	977	4.57	0	565	0	0	0
Play it Again	0.00	750	1.26	1.5	594	3.86	0	594	0	0	0
Poplar Lake	10.03	1338	1.56	0.5	855	4.50	14	841	0	0	0
Porcupine	0.00	2245	2.03	0.5	1108	2.82	322	787	0	322	0
Quarry Road Hardwoods	0.00	606	2.83	0.5	214	7.94	214	0	215	0	0
Railhead Hardwoods	0.00	0	0.00	0.0	657	3.49	0	657	0	0	0

Table 12. (Cont'd.).

Sale name NAME	Avg. Spec SPEC	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOL	Avg. Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	Shelt Volume SHELT	Imp Volume IMP
	$/Mbf	$	$/Mbf	Miles	Mbf	Mbf/acre	Mbf	Mbf	Mbf	Mbf	Mbf
R.R.O.	0.00	1397	0.73	1.0	1927	2.94	945	982	703	243	0
Samson II	0.00	0	0.00	0.0	323	5.39	0	323	0	0	0
Sand Lilly	0.00	200	0.04	0.3	4625	5.17	926	1906	927	0	513
Satago	0.00	0	0.00	0.0	160	2.42	0	160	0	0	162
Silver	0.00	175	0.07	0.2	2536	6.04	0	1220	0	0	707
Sky's the Limit	1.45	450	0.27	2.1	1658	3.50	0	1058	0	0	0
South Sugarbush	0.00	0	0.00	0.0	392	2.17	0	392	0	0	0
Spinulous	0.00	250	1.61	0.5	155	3.04	0	155	0	0	0
Spring South	0.00	0	0.00	0.0	677	4.48	481	197	482	0	0
Steam Engine Run	3.70	0	0.00	0.0	2085	4.72	34	769	0	0	771
Stillman	2.13	323	0.14	0.0	2288	4.84	495	1356	479	16	1358
Three Cedar Murphy	4.38	3061	0.79	0.8	3859	5.36	716	3143	693	0	143
Twenty-four Hardwoods	0.00	0	0.00	0.0	136	10.49	136	0	136	0	0
Upper Farm Hill	0.00	700	7.14	0.6	98	2.80	0	98	0	0	0
Vertz	0.00	0	0.00	0.0	188	2.85	0	188	0	0	0
Wanna	0.00	250	1.48	0.5	169	4.01	0	169	0	0	0
Wanna Two	0.00	0	0.00	0.0	267	3.33	0	267	0	0	0

Table 12. (Cont'd.).

Sale name NAME	Thin Volume THIN	Select Volume SELECT	Road Volume ROAD	Mixed Volume MIX	Unmix Volume UNMIX	Emix Volume EMIX	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	Shelt % Vol %SHELT	Imp % Vol %IMP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf					
BCD	292	0	0	0	0	0	67.4%	32.6%	67.9%	0.0%	0.0%
Bear	0	141	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Borealis	0	0	0	344	654	0	21.6%	70.5%	7.9%	13.7%	55.5%
Camp A	0	412	0	0	0	0	55.6%	44.4%	56.0%	0.0%	0.0%
Cat & Mouse	2396	0	150	0	0	252	23.2%	76.8%	11.6%	4.7%	36.3%
CCC Hardwoods	0	139	0	679	0	0	39.6%	10.3%	39.7%	0.0%	0.0%
Clark	174	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Corner	0	1297	0	0	0	0	18.4%	81.6%	18.3%	0.0%	0.0%
County Line	741	556	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Dad's Camp	0	0	0	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%
Deer Creek	283	650	0	839	0	0	27.6%	38.0%	27.7%	0.0%	0.0%
Dukes	0	542	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
East Barrett	0	438	0	0	0	0	27.8%	72.2%	27.9%	0.0%	0.0%
East Spur Hardwoods	0	128	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
FH-13 Followup	146	0	51	0	390	0	57.8%	42.2%	54.0%	0.0%	0.0%
Flow West	0	296	9	448	536	0	0.5%	73.3%	0.0%	0.0%	25.6%
Gleason Lake East	1835	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Hound Dog Hollow	910	0	0	339	0	0	0.0%	83.8%	0.0%	0.0%	40.4%
Johnson Creek Hardwoods	523	0	6	0	408	0	14.5%	85.5%	14.1%	0.0%	37.4%
Johnson Lookout	0	1782	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Johnson Lookout Resale	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	100.0%
Kenobo Lake	2254	0	0	452	0	0	0.0%	83.3%	0.0%	0.0%	0.0%
Kimble Lake	0	1202	0	376	0	0	19.5%	61.2%	19.6%	0.0%	0.0%
LaRock Hardwoods	273	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Lawson Road	0	344	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Lawson Road Resale	0	248	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Little Pole Lake	0	2239	111	0	0	0	46.0%	54.0%	40.9%	2.9%	8.6%
Lost Luck Hardwoods	0	0	0	394	312	0	0.0%	48.0%	0.0%	0.0%	6.7%
Lower Farm Hill	0	365	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Maple Hill West	0	376	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Markey Lee	280	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
McNearney Lake	304	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Mormon Creek Hardwoods I	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	100.0%
Mormon Creek Hardwoods II	114	786	8	0	0	0	22.5%	77.5%	21.9%	0.0%	0.0%
Mormon Creek Resale	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	100.0%
Nivation	0	0	4	1448	0	0	13.3%	0.0%	13.0%	0.0%	0.0%
North Country Hardwoods	0	62	0	0	213	0	24.8%	75.2%	24.8%	0.0%	41.4%
Nugget	0	0	0	402	73	0	0.0%	73.1%	0.0%	0.0%	68.6%
Paradise	0	0	0	0	804	0	0.0%	100.0%	0.0%	0.0%	56.2%
Pine Plains	567	0	0	413	0	0	0.0%	57.8%	0.0%	0.0%	0.0%
Play it Again	596	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Poplar Lake	436	0	14	0	406	0	1.6%	98.4%	0.0%	0.0%	0.0%
Porcupine	790	0	0	0	0	0	29.0%	71.0%	0.0%	29.1%	0.0%
Quarry Road Hardwoods	0	0	0	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%
Railhead Hardwoods	0	0	0	0	657	0	0.0%	100.0%	0.0%	0.0%	0.0%

Table 12. (Cont'd.).

Sale name NAME	Thin Volume THIN	Select Volume SELECT	Road Volume ROAD	Mixed Volume MIX	Unmix Volume UNMIX	Emix Volume EMIX	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	Shelt % Vol %SHELT	Imp % Vol %IMP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf					
R.R.O.	0	595	0	0	383	0	49.1%	50.9%	36.5%	12.6%	0.0%
Samson II	0	323	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Sand Lilly	588	0	0	1052	809	0	20.0%	41.2%	20.0%	0.0%	11.1%
Satago	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	100.0%
Silver	514	0	0	1368	0	0	0.0%	47.2%	0.0%	0.0%	27.3%
Sky's the Limit	0	520	0	591	550	0	0.0%	64.4%	0.0%	0.0%	0.0%
South Sugarbush	0	392	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Spinulous	155	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Spring South	0	198	0	0	0	0	71.0%	29.0%	71.2%	0.0%	0.0%
Steam Engine Run	0	0	34	1283	0	0	1.6%	36.9%	0.0%	0.0%	37.0%
Stillman	0	0	0	439	0	0	21.6%	59.2%	20.9%	0.7%	59.4%
Three Cedar Murphy	1662	1348	26	0	0	0	18.5%	81.5%	18.0%	0.0%	3.7%
Twenty-four Hardwoods	0	0	0	0	0	0	100.0%	0.0%	99.7%	0.0%	0.0%
Upper Farm Hill	0	100	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Vertz	0	188	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Wanna	169	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Wanna Two	268	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%

Table 12. (Cont'd.).

Sale name NAME	Thin % Vol %THIN	Select % Vol %SELECT	Road % Vol %ROAD	Mixed % Vol %MIX	Unmix % Vol %UNMIX	Emix % Vol %EMIX	# of Clear #CC	# of Shelter #SHELT	# of Imp #IMP	# of Thin #THIN	# of Select #SELECT
							PU's	PU's	PU's	PU's	PU's
BCD	32.6%	0.0%	0.0%	0.0%	0.0%	0.0%	6	0	0	2	0
Bear	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	1
Borealis	0.0%	0.0%	0.0%	8.0%	15.2%	0.0%	1	1	6	0	0
Camp A	0.0%	44.5%	0.0%	0.0%	0.0%	0.0%	3	0	0	0	2
Cat & Mouse	40.4%	0.0%	2.5%	0.0%	0.0%	4.3%	1	1	4	7	0
CCC Hardwoods	0.0%	10.3%	0.0%	50.4%	0.0%	0.0%	2	0	0	0	3
Clark	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	2	0
Corner	0.0%	81.5%	0.0%	0.0%	0.0%	0.0%	1	0	0	0	2
County Line	57.3%	43.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	3	2
Dad's Camp	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3	0	0	0	0
Deer Creek	11.6%	26.7%	0.0%	34.4%	0.0%	0.0%	4	0	0	1	2
Dukes	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	6
East Barrett	0.0%	72.2%	0.0%	0.0%	0.0%	0.0%	1	0	0	0	3
East Spur Hardwoods	0.0%	99.6%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	7
FH-13 Followup	11.5%	0.0%	4.0%	0.0%	30.6%	0.0%	2	0	0	1	0
Flow West	0.0%	17.0%	0.5%	25.8%	30.8%	0.0%	0	0	2	0	3
Gleason Lake East	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	6	0
Hound Dog Hollow	43.6%	0.0%	0.0%	16.2%	0.0%	0.0%	0	0	3	2	0
Johnson Creek Hardwoods	26.9%	0.0%	0.3%	0.0%	21.0%	0.0%	1	0	3	4	0
Johnson Lookout	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	4
Johnson Lookout Resale	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	2	0	0
Kenobo Lake	83.5%	0.0%	0.0%	16.8%	0.0%	0.0%	0	0	0	7	0
Kimble Lake	0.0%	61.4%	0.0%	19.2%	0.0%	0.0%	2	0	0	0	3
LaRock Hardwoods	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	3	0
Lawson Road	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	4
Lawson Road Resale	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	2
Little Pole Lake	0.0%	45.4%	2.3%	0.0%	0.0%	0.0%	6	1	3	0	9
Lost Luck Hardwoods	0.0%	0.0%	0.0%	52.1%	41.2%	0.0%	0	0	1	0	0
Lower Farm Hill	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	2
Maple Hill West	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	4
Markey Lee	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	2	0
McNearney Lake	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	4	0
Mormon Creek Hardwoods I	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	1	0	0
Mormon Creek Hardwoods II	9.8%	67.8%	0.7%	0.0%	0.0%	0.0%	2	0	0	1	5
Mormon Creek Resale	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	1	0	0
Nivation	0.0%	0.0%	0.2%	86.8%	0.0%	0.0%	1	0	0	0	0
North Country Hardwoods	0.0%	7.5%	0.0%	0.0%	25.9%	0.0%	1	0	1	0	1
Nugget	0.0%	0.0%	0.0%	26.9%	4.9%	0.0%	0	0	10	0	0
Paradise	0.0%	0.0%	0.0%	0.0%	44.0%	0.0%	0	0	4	0	0
Pine Plains	58.0%	0.0%	0.0%	42.3%	0.0%	0.0%	0	0	0	3	0
Play it Again	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	3	0
Poplar Lake	51.0%	0.0%	1.6%	0.0%	47.5%	0.0%	0	0	0	2	0
Porcupine	71.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0	2	0	5	0
Quarry Road Hardwoods	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9	0	0	0	0
Railhead Hardwoods	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0	0	0	0	0

Table 12. (Cont'd.).

Sale name NAME	Thin % Vol %THIN	Select % Vol %SELECT	Road % Vol %ROAD	Mixed % Vol %MIX	Unmix % Vol %UNMIX	Emix % Vol %EMIX	# of Clear #CC	# of Shelter #SHELT	# of Imp #IMP	# of Thin #THIN	# of Select #SELECT
							PU's	PU's	PU's	PU's	PU's
R.E.O.	0.0%	30.9%	0.0%	0.0%	19.9%	0.0%	3	1	0	0	3
Samson II	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	1
Sand Lilly	12.7%	0.0%	0.0%	22.7%	17.5%	0.0%	2	0	1	4	0
Satago	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	3	0	0
Silver	19.9%	0.0%	0.0%	52.9%	0.0%	0.0%	0	0	1	1	0
Sky's the Limit	0.0%	31.4%	0.0%	35.7%	33.2%	0.0%	0	0	0	0	3
South Sugarbush	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	1
Spinulous	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	2	0
Spring South	0.0%	29.2%	0.0%	0.0%	0.0%	0.0%	2	0	0	0	3
Steam Engine Run	0.0%	0.0%	1.6%	61.5%	0.0%	0.0%	0	0	2	0	0
Stillman	0.0%	0.0%	0.0%	19.2%	0.0%	0.0%	1	1	4	0	0
Three Cedar Murphy	43.1%	34.9%	0.7%	0.0%	0.0%	0.0%	3	0	1	8	7
Twenty-four Hardwoods	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5	0	0	0	0
Upper Farm Hill	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	3
Vertz	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	0	2
Wanna	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	1	0
Wanna Two	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0	2	0

Table 12. (Cont'd.).

Sale name NAME	# of Roads #ROAD	# of Mix #MIX	# of Unmix #UNMIX	# of Emix #EMIX	Mixed Hdws MHS	Red Maple RMS	Sugar Maple SMS	Yellow Birch YBS	Elm Elm ES	Aspen AS	Beech BES	Black Cherry BC
	PU's	PU's	PU's	PU's	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
BCD	0	0	0	0	24	0	0	0	0	0	0	0
Bear	0	0	0	0	15	0	18	0	0	0	0	0
Borealis	0	1	1	0	0	350	90	32	0	39	26	0
Camp A	0	0	0	0	0	0	43	0	0	0	0	0
Cat & Mouse	1	0	0	1	94	143	91	28	0	0	12	0
CCC Hardwoods	0	8	0	0	9	0	111	0	0	42	0	0
Clark	0	0	0	0	0	0	26	0	0	0	0	0
Corner	0	0	0	0	381	0	0	0	0	32	0	0
County Line	0	0	0	0	0	106	0	0	0	0	0	20
Dad's Camp	0	0	0	0	0	0	0	0	0	12	0	0
Deer Creek	0	1	0	0	0	14	44	25	0	88	78	0
Dukes	0	0	0	0	0	0	291	37	0	0	0	0
East Barrett	0	0	0	0	54	0	85	0	0	30	0	0
East Spur Hardwoods	0	0	0	0	50	0	0	0	0	0	0	0
FH-13 Followup	1	0	2	0	24	54	0	0	0	29	0	0
Flow West	1	2	2	0	32	22	65	18	0	0	20	0
Gleason Lake East	0	0	0	0	150	0	0	0	0	0	0	0
Hound Dog Hollow	0	1	0	0	9	25	39	16	0	0	0	0
Johnson Creek Hardwoods	1	0	1	0	89	0	0	0	0	0	0	0
Johnson Lookout	0	0	0	0	0	58	60	52	20	0	53	0
Johnson Lookout Resale	0	0	0	0	0	11	28	25	0	0	19	0
Kenobo Lake	0	1	0	0	399	0	0	0	0	0	0	0
Kimble Lake	0	1	0	0	0	19	116	48	0	30	84	0
LaRock Hardwoods	0	0	0	0	0	0	0	0	0	0	0	0
Lawson Road	0	0	0	0	0	0	245	15	0	0	0	0
Lawson Road Resale	0	0	0	0	0	0	173	14	0	0	0	0
Little Pole Lake	1	0	0	0	84	75	207	21	0	155	0	0
Lost Luck Hardwoods	0	1	1	0	0	76	15	12	0	0	23	0
Lower Farm Hill	0	0	0	0	0	0	112	0	0	16	0	0
Maple Hill West	0	0	0	0	35	0	33	0	0	21	0	0
Markey Lee	0	0	0	0	0	0	11	0	0	0	0	0
McNearney Lake	0	0	0	0	0	33	19	16	0	0	0	0
Mormon Creek Hardwoods I	0	0	0	0	10	0	13	0	0	0	0	0
Mormon Creek Hardwoods II	1	0	0	0	66	0	0	0	0	0	0	0
Mormon Creek Resale	0	0	0	0	10	0	13	0	0	0	0	0
Nivation	1	5	0	0	36	20	99	25	0	27	29	0
North Country Hardwoods	0	0	1	0	47	0	99	0	0	152	0	0
Nugget	0	3	1	0	62	0	133	0	0	26	0	0
Paradise	0	0	2	0	19	142	148	31	0	0	37	0
Pine Plains	0	1	0	0	0	113	0	0	0	0	0	0
Play it Again	0	0	0	0	0	0	0	0	0	0	0	0
Poplar Lake	1	0	1	0	87	0	0	0	0	0	0	0
Porcupine	0	0	0	0	161	0	0	0	0	0	0	0
Quarry Road Hardwoods	0	0	0	0	82	0	0	0	0	0	0	0
Railhead Hardwoods	0	0	1	0	19	11	35	0	0	0	0	0

Table 12. (Cont'd.).

Sale name NAME	# of Roads #ROAD	# of Mix #MIX	# of Unmix #UNMIX	# of Emix #EMIX	Mixed Hdws MHS	Red Maple RMS	Sugar Maple SMS	Yellow Birch YBS	Elm Elm ES	Aspen AS	Beech BES	Black Cherry BC
	PU's	PU's	PU's	PU's	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
R.R.O.	0	0	2	0	19	43	23	42	0	0	0	0
Samson II	0	0	0	0	0	0	0	0	0	0	0	0
Sand Lilly	0	2	1	0	87	168	126	18	0	0	52	0
Satago	0	0	0	0	32	0	0	0	0	3	0	0
Silver	0	2	0	0	0	100	104	14	0	15	35	0
Sky's the Limit	0	2	2	0	43	75	199	0	0	0	36	0
South Sugarbush	0	0	0	0	14	9	14	17	0	0	0	0
Spinulous	0	0	0	0	0	0	0	0	0	0	0	0
Spring South	0	0	0	0	28	0	0	0	0	60	0	0
Steam Engine Run	1	2	0	0	149	30	146	0	0	0	0	0
Stillman	0	1	0	0	81	15	95	0	0	0	0	0
Three Cedar Murphy	1	0	0	0	0	111	0	0	0	48	143	0
Twenty-four Hardwoods	0	0	0	0	56	0	0	0	0	0	0	0
Upper Farm Hill	0	0	0	0	40	0	0	0	0	0	0	0
Vertz	0	0	0	0	45	0	0	0	0	0	0	0
Wanna	0	0	0	0	16	0	14	0	0	0	0	0
Wanna Two	0	0	0	0	59	0	0	0	0	0	0	0

Table 12. (Cont'd.).

Sale name NAME	Paper Birch PBS	Mixed Con. MCS	Pine PS	Hem-lock HS	Spruce SS	Red & Wh pin RWS	White Pine WPS	Mixed Hdws MHP	Aspen AP	Balsam Fir BFP	Red & Wh pin RWP	Mixed Con. MCP	Spruce SP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
BCD	0	0	18	0	0	0	0	469	125	0	19	0	14
Bear	0	0	0	0	0	0	0	108	0	0	0	0	0
Borealis	0	0	0	0	0	55	0	3177	215	66	43	0	64
Camp A	0	0	0	0	0	49	0	420	56	216	33	0	56
Cat & Mouse	0	0	284	0	0	39	0	3368	61	323	877	0	0
CCC Hardwoods	0	53	0	0	0	0	0	749	211	0	0	174	0
Clark	0	0	0	0	0	0	0	148	0	0	0	0	0
Corner	0	81	0	0	0	0	29	847	25	0	0	180	0
County Line	0	0	0	0	0	4	0	973	0	190	0	0	0
Dad's Camp	0	0	0	0	0	0	0	470	259	0	0	0	0
Deer Creek	17	0	0	0	0	177	0	1100	549	32	137	0	0
Dukes	0	0	0	0	0	0	0	201	0	13	0	0	0
East Barrett	0	0	0	0	0	0	0	394	42	0	0	3	0
East Spur Hardwoods	0	0	0	0	0	0	0	78	0	0	0	0	0
FH-13 Followup	0	14	16	0	0	0	0	632	107	236	116	46	0
Flow West	0	0	0	0	0	0	0	1331	63	165	0	0	0
Gleason Lake East	0	0	0	0	0	14	0	1360	0	307	0	0	0
Hound Dog Hollow	0	0	0	0	0	263	0	1007	48	68	615	0	0
Johnson Creek Hardwoods	0	0	0	0	0	13	0	1286	206	0	60	232	54
Johnson Lookout	0	0	0	0	0	10	0	1320	151	19	13	0	0
Johnson Lookout Resale	0	0	0	0	0	0	0	430	0	18	0	0	0
Kenobo Lake	0	0	0	0	0	0	0	2172	80	0	0	48	0
Kimble Lake	0	0	0	11	0	35	0	965	425	38	21	0	0
LaRock Hardwoods	0	0	39	0	0	0	0	184	0	0	48	0	0
Lawson Road	0	0	0	0	0	0	0	84	0	0	0	0	0
Lawson Road Resale	0	0	0	0	0	0	0	61	0	0	0	0	0
Little Pole Lake	0	64	0	0	44	0	0	2897	739	225	0	0	90
Lost Luck Hardwoods	0	0	0	0	0	0	0	600	0	16	0	0	0
Lower Farm Hill	0	0	0	0	6	0	0	179	35	0	0	16	0
Maple Hill West	0	0	0	0	0	0	0	257	28	2	0	0	0
Markey Lee	0	0	0	0	0	0	0	269	0	0	0	0	0
McNearney Lake	0	0	0	0	0	0	0	208	26	0	0	0	0
Mormon Creek Hardwoods I	0	0	0	5	0	0	0	140	0	0	0	0	0
Mormon Creek Hardwoods II	0	0	0	0	0	14	0	857	0	0	100	122	0
Mormon Creek Resale	0	0	0	5	0	0	0	147	0	0	0	0	0
Nivation	0	0	0	0	21	0	0	928	237	80	0	0	109
North Country Hardwoods	0	21	0	0	0	0	0	341	115	0	0	47	0
Nugget	0	0	0	0	0	0	0	1246	13	16	0	0	0
Paradise	0	0	0	0	0	0	0	1424	0	28	0	0	0
Pine Plains	0	0	0	0	0	0	0	661	30	91	0	0	44
Play it Again	0	0	0	0	0	0	0	559	35	0	0	0	0
Poplar Lake	0	0	0	0	0	1	0	674	82	11	0	0	0
Porcupine	0	57	0	0	0	0	0	783	0	0	0	108	0
Quarry Road Hardwoods	0	0	0	0	0	0	0	122	0	0	0	11	0
Railhead Hardwoods	0	8	0	0	0	0	0	362	118	70	12	0	22

Table 12. (Cont'd.).

Sale name NAME	Paper Birch PBS	Mixed Con. MCS	Pine PS	Hem-lock HS	Spruce SS	Red & White Wh pin RWS	Pine WPS	Mixed Hdws MHP	Aspen AP	Balsam Fir BFP	Red & Wh pin RWP	Mixed Con. MCP	Spruce SP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
R.R.O.	0	0	0	36	21	58	0	998	61	253	78	0	40
Samson II	0	0	0	0	0	0	0	323	0	0	0	0	0
Sand Lilly	0	0	0	0	0	209	0	2631	74	54	706	0	0
Satago	0	0	0	0	0	0	0	85	35	0	0	0	0
Silver	0	0	0	0	0	0	0	2103	129	86	0	0	0
Sky's the Limit	0	0	0	0	0	0	0	1285	0	20	0	0	0
South Sugarbush	0	0	0	0	0	0	0	243	0	63	0	0	0
Spinulous	0	0	0	0	0	0	0	155	0	0	0	0	0
Spring South	0	0	0	0	17	0	0	337	177	0	0	59	0
Steam Engine Run	0	0	0	0	0	0	0	1712	0	48	0	0	0
Stillman	0	0	0	0	0	0	0	1833	156	109	0	0	0
Three Cedar Murphy	0	0	0	0	0	91	0	2685	444	0	277	0	0
Twenty-four Hardwoods	0	0	0	0	0	0	0	71	4	6	0	0	0
Upper Farm Hill	0	0	0	0	0	2	0	53	3	0	0	0	0
Vertz	0	0	0	0	0	0	0	143	0	0	0	0	0
Wanna	0	0	0	0	0	0	0	128	11	0	0	0	0
Wanna Two	0	0	0	0	0	0	0	192	16	0	0	0	0

Table 12. (Cont'd.).

Sale name NAME	Hem-lock HP	Jack Pine JPP	N. wh. Cedar CP	White Pine WPP
	Mbf	Mbf	Mbf	Mbf
BCD	0	229	0	0
Bear	0	0	0	0
Borealis	158	0	0	0
Camp A	27	0	25	0
Cat & Mouse	56	550	0	0
CCC Hardwoods	0	0	0	0
Clark	0	0	0	0
Corner	0	0	0	16
County Line	0	0	0	0
Dad's Camp	0	0	0	0
Deer Creek	175	0	0	0
Dukes	0	0	0	0
East Barrett	0	0	0	0
East Spur Hardwoods	0	0	0	0
FH-13 Followup	0	0	0	0
Flow West	16	0	0	0
Gleason Lake East	0	0	0	0
Hound Dog Hollow	0	0	0	0
Johnson Creek Hardwoods	0	0	0	0
Johnson Lookout	35	0	0	0
Johnson Lookout Resale	31	0	0	0
Kenobo Lake	0	0	0	0
Kimble Lake	135	0	30	0
LaRock Hardwoods	0	0	0	0
Lawson Road	0	0	0	0
Lawson Road Resale	0	0	0	0
Little Pole Lake	134	0	195	0
Lost Luck Hardwoods	14	0	0	0
Lower Farm Hill	0	0	0	0
Maple Hill West	0	0	0	0
Markey Lee	0	0	0	0
McNearney Lake	0	0	0	0
Mormon Creek Hardwoods I	19	0	0	0
Mormon Creek Hardwoods II	0	0	0	0
Mormon Creek Resale	20	0	0	0
Nivation	43	0	13	0
North Country Hardwoods	0	0	0	0
Nugget	0	0	0	0
Paradise	0	0	0	0
Pine Plains	39	0	0	0
Play it Again	0	0	0	0
Poplar Lake	0	0	0	0
Porcupine	0	0	0	0
Quarry Road Hardwoods	0	0	0	0
Railhead Hardwoods	0	0	0	0

Table 12. (Cont'd.).

Sale name NAME	Hem-lock HP	Jack Pine JPP	N. wh. Cedar CP	White Pine WPP
	Mbf	Mbf	Mbf	Mbf
R.E.O.	176	0	77	0
Samson II	0	0	0	0
Sand Lilly	0	501	0	0
Satago	0	0	6	0
Silver	0	0	0	0
Sky's the Limit	0	0	0	0
South Sugarbush	32	0	0	0
Spinulous	0	0	0	0
Spring South	0	0	0	0
Steam Engine Run	0	0	0	0
Stillman	0	0	0	0
Three Cedar Murphy	0	60	0	0
Twenty-four Hardwoods	0	0	0	0
Upper Farm Hill	0	0	0	0
Vertz	0	0	0	0
Wanna	0	0	0	0
Wanna Two	0	0	0	0

Table 13.Hiawatha National Forest variable means and standard deviations.

Variable	Mean	Standard Deviation
MONTHS	42.4	19.7
ACRE	315.8	302.3
PU	5.6	4.2
BIDS	2.9	1.8
ADVER	$11.95	$10.64
STUMPAGE	$17.99	$17.61
OVERBID	$6.03	$8.04
VALUE	$15,727	$17,745
FOBVAL	$88.93	$19.35
HAUL	33.6	13.9
SAWH	24.4	15.8
PULPH	36.1	16.3
SPEC$	$2,670	$6,149
SPEC	$1.22	$2.42
TEMP$	$720	$949
TEMP	$0.73	$1.10
TEMPM	0.4	0.5
VOL	1260.6	1283.8
AVGVOL	4.2	1.5
EVOL	233.5	412.6
UNVOL	839.9	891.5
CC	197.5	350.3
SHELT	25.7	96.6
IMP	226.2	490.5
THIN	262.4	528.4
SELECT	252.7	457.1
ROAD	6.7	24.6
MIX	175.3	357.4
UNMIX	99.9	218.4
EMIX	4.1	32.0
%EVOL	16.0%	26.6%
%UNVOL	74.5%	30.9%
%CC	14.7%	26.2%
%SHELT	1.0%	4.4%
%IMP	14.8%	28.6%
%THIN	23.8%	37.2%
%SELECT	29.1%	40.2%
%ROAD	0.2%	0.7%
%MIX	9.2%	18.8%
%UNMIX	7.0%	17.1%
%EMIX	0.1%	0.5%

Variable	Mean	Standard Deviation
#CC	1.00	1.81
#SHELT	0.11	0.37
#IMP	0.85	1.78
#THIN	1.23	2.01
#SELECT	1.42	2.09
#ROAD	0.16	0.37
#MIX	0.55	1.33
#UNMIX	0.29	0.61
#EMIX	0.02	0.13
MHS	43.8	75.2
RMS	29.4	59.2
SMS	51.3	69.1
YBS	8.2	13.6
ES	0.3	2.5
AS	13.3	31.2
BES	10.4	25.3
BC	0.3	2.5
PBS	0.3	2.2
MCS	4.8	16.2
PS	5.8	36.4
HS	0.9	4.8
SS	1.8	7.0
RWS	16.7	49.2
WPS	0.5	3.7
MHP	821.9	832.5
AP	83.6	142.6
BPP	46.2	81.8
RWP	50.9	162.9
MCP	16.9	47.2
SP	7.9	22.3
HP	17.9	43.4
JPP	21.6	97.5
CP	5.6	26.8
WPP	0.3	2.1

Table 14. Values of Huron-Manistee National Forest variables.

Sale Name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	SBA Class SBA	Total Acres ACRE	Pmt. Units PU	# of Bids BIDS
4 D	4850	4	7	26-Sep-86	31-Dec-89	39.7	N	67	3	3
Bean Hill	4579	4	7	29-May-86	30-May-89	36.6	N	73	7	1
Bluebird III	5212	4	6	17-Mar-87	30-Oct-89	31.9	N	285	7	2
Bobcat	5972	4	5	06-Jul-88	30-Jun-92	48.5	N	170	7	2
Casper Oaks	4979	4	6	31-Jul-84	30-Jun-87	35.5	N	103	8	6
Clean Sweep	44074	4	5	22-Oct-85	30-Sep-87	23.6	N	39	4	5
Davison Fountain	5865	4	6	02-May-88	30-Jun-91	38.5	N	168	7	2
DeJarlais Road	919974	4	7	30-Jul-87	30-Jun-89	23.4	N	28	1	1
Duck Marsh	919966	4	7	30-Jul-87	30-Jun-89	23.4	N	38	1	1
Foley West	5386	4	5	25-Aug-87	31-Dec-91	53.0	N	103	5	1
Henning Corners	4157	4	5	05-Nov-85	30-Sep-87	23.1	S	61	5	1
Holloway Road	43654	4	5	25-Apr-85	30-Jun-89	50.9	N	269	8	1
Indian Creek Draw II	4744	4	6	25-Aug-86	13-Jun-88	21.9	N	25	1	1
Kellogg Lake	4919	4	5	16-Feb-84	30-Jun-88	53.2	N	384	22	1
Kinsey-Hunt	4311	4	5	19-Nov-84	30-Jun-89	56.1	S	286	11	1
Loud Beaver Pond	4041	4	7	22-Sep-85	30-Sep-87	24.6	S	26	2	1
Luzerne Tower	4355	4	5	26-Feb-86	31-Mar-89	37.6	N	454	11	2
Mack Hills	4307	4	5	26-Oct-84	31-Dec-89	63.1	N	247	7	1
Markle Release	5915	4	5	08-Jun-88	30-Sep-90	28.1	S	71	2	1
Merry Hag	5568	4	5	23-Nov-87	31-Mar-91	40.8	S	249	8	1
Oakland West	4918	4	7	15-Feb-84	30-Jun-88	53.2	N	278	6	1
RV Release	5899	4	5	10-May-88	30-Jun-90	26.0	S	88	3	1
Sunset	3886	4	5	17-Feb-87	30-Sep-90	44.0	S	286	10	2
Trailside	5857	4	5	26-Apr-88	31-Dec-89	20.5	N	35	3	1
Twin Oaks	43696	4	6	03-Jun-85	31-Dec-87	31.4	N	80	3	4
West Branch	4215	4	7	12-Dec-85	30-Jun-91	67.5	S	182	12	1
88th Street	4504	24	1	07-Apr-86	30-Jun-88	27.2	S	66	3	6
Atodd Lake	4108	24	1	29-Oct-85	30-Jun-88	32.5	S	72	3	3
Big River	4939	24	3	17-Apr-84	31-Dec-88	57.3	N	261	10	4
Big Valley	4249	24	3	07-Jan-86	30-Jun-89	42.3	N	314	11	4
Black Oak Flats	4944	24	1	18-May-84	31-Dec-86	31.9	S	406	5	2
Broadway Avenue	4405	24	1	07-Mar-86	31-Dec-88	34.3	N	333	10	6
Bub Lake	5378	24	4	18-Aug-87	31-Dec-89	28.9	N	204	10	3
Bubble Cuffer	4892	24	1	27-Oct-86	30-Sep-89	35.6	N	92	5	4
Carlton Creek II	4082	24	4	28-Oct-85	30-Jun-87	20.3	N	97	4	5
Cedar Creek	4347	24	4	13-Mar-85	31-Dec-89	58.5	N	393	15	2
Chilliwack	6087	24	1	19-Sep-88	30-Sep-90	24.7	N	79	4	3
Clay Pit	4341	24	3	05-Mar-85	31-Dec-89	58.7	N	130	6	6
Cool Creek	4350	24	3	14-Mar-85	31-Dec-87	34.1	N	127	7	3
Crocker Road	4327	24	4	21-Jan-85	30-Jun-87	29.7	N	219	9	3
Dorner Lake	4974	24	3	10-Jul-84	30-Jun-87	36.2	N	112	10	1
Dungeon Swamp	4462	24	4	24-Mar-86	30-Jun-88	27.6	N	213	6	1
Elm Drive	4910	24	2	19-Dec-83	30-Jun-86	30.8	N	131	5	1
Fiers Corner	43936	24	2	27-Aug-85	30-Jun-88	34.6	N	196	5	1
Four Cutter	4330	24	1	18-Feb-86	30-Jun-88	28.8	N	111	2	1

Table 14. (Cont'd.).

Sale Name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	SBA Class SBA	Total Acres ACRE	Pmt. Units PU	# of Bids BIDS
Golden Knoll	4926	24	3	12-Mar-84	30-Jun-87	40.2	N	120	7	9
Golf Course II	4363	24	4	16-Apr-85	30-Jun-87	26.8	S	94	4	3
Hart to Hart	43591	24	4	05-Sep-85	30-Dec-87	28.2	S	148	7	3
Hay Hill	4637	24	1	14-Jul-86	30-Jun-88	23.9	S	177	6	3
Hodag Den	5824	24	1	05-Apr-88	30-Jun-91	39.4	S	182	7	6
Hungerford Tower	4912	24	4	05-Jan-84	31-Dec-86	36.4	S	117	4	4
Indian Lake	4389	24	4	05-Mar-86	31-Dec-88	34.4	N	195	8	3
Jobs Bill	4308	24	1	29-Oct-84	31-Dec-86	26.4	S	184	5	1
Last Chance	4990	24	3	11-Sep-84	30-Jun-86	21.9	N	51	2	5
Little Buck	5832	24	3	14-Apr-88	31-Dec-89	20.9	N	60	3	1
Little Oak Grove	4916	24	4	23-Jan-84	31-Dec-85	23.6	S	40	1	3
Little Totem	5931	24	1	20-Jun-88	30-Sep-89	15.6	S	15	1	1
Long Haul	4909	24	1	19-Dec-83	31-Dec-85	24.8	N	93	4	1
Lower Crossing	4983	24	4	09-Aug-84	31-Dec-85	17.0	N	12	1	1
Lower Musquash	5204	24	1	10-Mar-87	30-Sep-89	31.2	N	60	4	2
Lower Post	5550	24	1	16-Nov-87	30-Jun-89	19.7	S	22	1	3
Luther Chapel II	4338	24	4	28-Feb-85	03-Jun-86	15.3	N	27	1	4
Mena Creek	4973	24	4	09-Jul-84	31-Dec-90	78.9	S	375	18	1
Mullen Creek	4359	24	4	26-Mar-85	31-Dec-86	21.5	N	63	3	1
North End	4897	24	2	19-Sep-83	31-Mar-86	30.8	N	124	4	1
North Totem Blight	5519	24	1	26-Oct-87	30-Sep-89	23.5	N	75	2	4
Oil Well	4553	24	2	14-May-86	30-Jun-90	50.3	N	200	9	3
Over the Hill Sawlog	4302	24	1	16-Oct-84	30-Jun-86	20.7	S	132	3	2
Piney Woods	4933	24	3	29-Mar-84	31-Dec-88	57.9	S	181	10	3
Podunk II	4354	24	4	19-Mar-85	30-Sep-86	18.7	N	46	2	6
Rabbit	4321	24	1	06-Jan-86	30-Jun-88	30.2	N	192	6	4
Rolling Hills II	4991	24	4	04-Dec-86	30-Sep-90	46.5	N	127	5	3
Savannah	6020	24	3	23-Aug-88	31-Dec-89	16.5	N	52	3	2
School Marm Sawlog	4315	24	1	28-Nov-84	31-Dec-86	25.4	S	172	4	2
Selma Lakes	4331	24	2	12-Feb-85	30-Jun-88	41.1	N	156	5	2
Sheep Ranch	4843	24	1	29-Sep-86	31-Oct-88	25.4	S	40	2	2
Shelly Lake	4920	24	4	21-Feb-84	31-Dec-85	22.6	N	52	2	9
Short Staker	4305	24	1	22-Oct-84	30-Jun-86	20.5	S	57	2	1
Skeels Creek	4928	24	4	13-Mar-84	31-Dec-86	34.1	S	180	8	3
Sour Apple	5576	24	2	24-Nov-87	30-Sep-91	46.9	N	90	7	1
South Lookout	43662	24	2	15-May-85	31-Dec-86	19.8	N	47	3	2
South Totem	5923	24	1	18-Jun-88	30-Sep-89	15.6	S	32	2	1
Spreadout	5345	24	2	29-Jul-87	30-Sep-91	50.8	N	152	5	1
Syers Lake	43704	24	3	04-Jun-85	31-Dec-88	43.5	N	128	6	2
Tower Ridge	4945	24	2	22-May-84	30-Jun-88	50.0	N	341	8	2
Upper Musquash	5139	24	1	09-Feb-87	31-Dec-89	35.2	S	176	8	1
Van Gilder	43852	24	4	25-Jun-85	31-Dec-86	18.5	S	26	1	11
Walking Boss	4930	24	1	19-Mar-84	31-Dec-85	21.7	N	90	4	7
Warrior Hills	5022	24	1	15-Dec-86	31-Dec-89	37.1	S	136	4	2
West Brandybrook	4989	24	2	30-Aug-84	30-Sep-88	49.7	N	200	5	4

Table 14. (Cont'd.).

Sale Name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	SBA Class SBA	Total Acres ACRE	Pmt. Units PU	# of Bids BIDS
West Lonesome Road	5881	24	1	23-May-88	30-Jun-91	37.8	N	139	5	1
West Stocking Creek	43613	24	2	03-Apr-85	30-Sep-89	54.7	N	275	8	1
West TV Tower	4987	24	2	14-Aug-84	31-Dec-88	53.3	N	404	11	3
Winnepesaug II	5014	24	4	11-Dec-86	30-Jun-88	18.9	N	196	5	2
Young Hawk	5733	24	3	15-Mar-88	31-Dec-90	34.0	S	116	5	2

Table 14. (Cont'd.).

Sale Name NAME	Adv. Rate ADVER	Stat Hi bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982=100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPEC$	Avg. Spec SPEC
	$/Mbf	$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$	$/Mbf
4 D	17.19	25.06	7.87	6491.30	82.61	110.2	29.8	3	33	0	0.00
Bean Hill	16.99	18.74	1.75	16505.04	96.85	108.9	38.2	11	49	0	0.00
Bluebird III	21.30	23.30	2.00	8830.70	79.91	112.1	67.9	0	68	0	0.00
Bobcat	14.67	31.96	17.29	33480.50	98.67	118.5	35.3	17	39	0	0.00
Casper Oaks	14.37	29.80	15.43	15480.30	109.14	104.1	57.5	8	82	1634	3.15
Clean Sweep	33.41	53.39	19.98	5576.12	80.00	108.7	40.0	0	40	0	0.00
Davison Fountain	21.87	37.49	15.62	27064.00	108.95	117.5	48.1	10	66	0	0.00
DeJarlais Road	20.08	20.25	0.17	3131.60	87.53	113.8	44.9	15	50	0	0.00
Duck Marsh	18.45	26.91	8.46	4463.50	79.86	113.8	40.1	0	40	0	0.00
Foley West	16.86	16.86	0.00	11497.78	97.45	114.4	30.4	19	34	0	0.00
Henning Corners	13.60	13.60	0.00	3121.30	122.70	109.0	18.8	13	20	0	0.00
Holloway Road	18.99	18.99	0.00	32665.81	97.38	106.9	50.6	18	61	2202	1.28
Indian Creek Draw I	10.74	13.87	3.13	2353.90	140.26	109.7	56.1	7	63	0	0.00
Kellogg Lake	25.35	25.61	0.26	85341.37	90.62	102.4	44.7	9	52	4837	1.45
Kinsey-Hunt	20.64	21.36	0.72	37706.17	103.96	105.3	56.3	16	69	1070	0.61
Loud Beaver Pond	22.79	26.00	3.21	2830.45	105.26	108.3	46.6	25	65	0	0.00
Luzerne Tower	18.09	18.45	0.36	50525.55	95.46	109.3	33.6	17	36	0	0.00
Mack Hills	17.33	20.49	3.16	29509.25	98.93	105.3	52.7	18	67	1431	0.99
Markle Release	11.13	14.35	3.22	3900.24	116.43	118.0	30.6	22	32	0	0.00
Merry Hag	15.94	19.13	3.19	25941.99	113.42	115.4	32.2	25	34	0	0.00
Oakland West	17.93	20.40	2.47	25458.50	87.65	102.4	52.2	20	61	0	0.00
RV Release	14.52	14.52	0.00	2816.43	119.86	117.5	34.6	22	38	0	0.00
Sunset	25.37	31.40	6.03	71148.84	32.60	111.6	5.8	20	31	0	0.00
Trailside	20.20	22.90	2.70	3321.60	125.39	117.1	24.6	22	26	0	0.00
Twin Oaks	15.05	26.38	11.33	8631.87	92.56	107.6	74.0	0	74	0	0.00
West Branch	23.32	23.32	0.00	33523.06	89.65	109.3	32.3	5	40	0	0.00
88th Street	30.65	41.49	10.84	18952.51	101.49	108.6	37.4	10	54	0	0.00
Atodd Lake	31.36	42.85	11.49	28306.38	97.63	108.7	37.7	16	52	0	0.00
Big River	24.51	34.19	9.68	55722.39	86.90	103.1	11.6	10	12	0	0.00
Big Valley	20.18	30.74	10.56	62760.86	87.05	109.6	26.9	16	29	0	0.00
Black Oak Flats	40.36	49.83	9.47	61933.92	108.45	103.4	23.5	9	42	0	0.00
Broadway Avenue	27.09	36.02	8.93	53526.99	97.69	108.8	40.0	10	54	2220	1.49
Bub Lake	31.49	35.83	4.34	34544.90	105.40	114.4	61.1	17	68	1924	2.00
Bubble Cuffer	33.06	52.98	19.92	60697.50	91.16	110.3	29.3	20	36	0	0.00
Carlton Creek II	25.97	37.81	11.84	26754.00	96.44	108.7	25.9	11	33	3241	4.58
Cedar Creek	22.32	27.03	4.71	38880.20	96.01	106.4	22.7	22	23	10803	7.51
Chilliwack	38.03	62.50	24.47	36085.35	120.73	119.8	33.4	9	54	0	0.00
Clay Pit	24.39	35.88	11.49	59505.48	85.10	106.4	13.0	6	14	0	0.00
Cool Creek	13.11	22.78	9.67	25296.17	91.87	106.4	19.5	11	22	0	0.00
Crocker Road	20.38	24.42	4.04	15686.92	92.24	105.5	30.6	22	33	4701	7.32
Dorner Lake	10.38	22.83	12.45	16583.20	87.88	104.1	17.2	2	20	7039	9.69
Dungeon Swamp	19.22	21.60	2.38	19108.85	90.49	108.8	47.4	8	59	0	0.00
Elm Drive	17.99	20.43	2.44	17462.80	97.71	101.3	42.9	29	46	1101	1.29
Fiers Corner	15.83	21.53	5.70	14880.90	85.73	108.0	41.7	21	45	3309	4.79
Four Cutter	39.09	50.84	11.75	40306.00	107.07	109.3	39.6	16	60	0	0.00

Table 14. (Cont'd.).

Sale Name NAME	Adv. Rate ADVER	Stat Hi bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982=100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPEC$	Avg. Spec SPEC
	$/Mbf	$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$	$/Mbf
Golden Knoll	21.15	33.89	12.74	26813.14	84.55	102.6	22.1	12	24	0	0.00
Golf Course II	31.36	41.52	10.16	22206.70	99.10	106.9	31.1	6	44	0	0.00
Hart to Hart	36.67	40.73	4.06	27555.01	99.19	108.3	15.7	4	22	0	0.00
Hay Hill	37.09	43.30	6.21	29229.35	109.39	109.5	23.7	17	31	300	0.44
Hodag Den	44.89	57.31	12.42	49284.19	124.62	117.1	30.4	15	52	0	0.00
Hungerford Tower	14.47	17.46	2.99	13647.00	90.51	101.9	55.2	15	69	3638	4.65
Indian Lake	18.44	21.55	3.11	15807.90	95.38	108.8	47.4	11	60	0	0.00
Jobs Bill	13.21	13.27	0.06	8511.14	82.62	105.3	30.8	13	33	0	0.00
Last Chance	31.07	39.57	8.50	16903.97	95.42	105.0	20.8	14	23	0	0.00
Little Buck	32.42	36.05	3.63	12558.50	116.95	117.1	7.5	7	8	0	0.00
Little Oak Grove	19.63	26.62	6.99	6078.60	83.06	101.9	25.5	11	28	0	0.00
Little Totem	27.85	28.78	0.93	3138.00	100.46	118.0	28.5	10	35	0	0.00
Long Haul	17.41	19.74	2.33	9382.33	99.08	101.3	48.7	15	58	0	0.00
Lower Crossing	26.66	29.37	2.71	2397.42	106.00	104.5	45.4	15	64	0	0.00
Lower Musquash	34.07	40.77	6.70	15898.00	50.46	112.1	8.2	14	33	0	0.00
Lower Post	37.95	43.18	5.23	7249.80	110.21	115.4	24.2	14	33	0	0.00
Luther Chapel II	24.56	30.64	6.08	5277.60	98.34	106.0	41.5	8	56	0	0.00
Mena Creek	10.30	12.67	2.37	23793.41	98.16	104.1	37.7	11	50	33504	14.74
Mullen Creek	22.21	22.63	0.42	8989.90	93.47	106.4	41.7	6	55	1051	2.65
North End	10.35	10.96	0.61	5015.90	93.16	100.7	53.7	39	55	1280	2.80
North Totem Blight	36.16	37.67	1.51	14315.00	105.52	115.3	31.8	16	42	0	0.00
Oil Well	27.48	33.51	6.03	53096.41	97.66	108.9	30.5	17	36	0	0.00
Over the Hill Sawlog	34.60	46.79	12.19	22701.71	108.85	105.3	32.4	23	41	0	0.00
Piney Woods	22.54	32.60	10.06	38490.00	91.43	102.6	12.0	12	12	0	0.00
Podunk II	19.78	34.22	14.44	5565.00	104.21	106.4	32.8	21	40	1346	8.28
Rabbit	19.68	33.62	13.94	30230.50	91.80	109.6	45.1	12	55	1598	1.78
Rolling Hills II	17.74	30.12	12.38	36296.06	87.65	110.5	54.7	12	69	3525	2.93
Savannah	18.08	22.65	4.57	3725.33	92.37	119.0	14.7	4	16	0	0.00
School Marm Sawlog	43.28	52.18	8.90	42679.98	117.51	105.3	24.5	13	40	0	0.00
Selma Lakes	14.35	24.15	9.80	18794.04	83.89	106.0	44.0	30	46	0	0.00
Sheep Ranch	39.40	43.97	4.57	13796.31	112.44	110.2	27.2	20	36	0	0.00
Shelly Lake	16.92	33.34	16.42	6423.33	95.58	102.4	44.5	9	61	0	0.00
Short Staker	30.53	46.61	16.08	11606.00	99.77	105.3	29.4	9	39	0	0.00
Skeels Creek	28.24	42.54	14.30	32177.48	98.12	102.6	28.6	17	35	0	0.00
Sour Apple	29.35	31.26	1.91	29196.00	91.85	115.4	25.6	15	30	0	0.00
South Lookout	17.39	19.43	2.04	9163.65	84.88	107.3	36.2	23	39	0	0.00
South Totem	42.44	43.12	0.68	12040.00	123.44	118.0	21.3	10	35	0	0.00
Spreadout	25.73	25.75	0.02	30222.70	84.83	113.8	32.6	10	45	0	0.00
Syers Lake	18.91	25.77	6.86	28679.94	86.89	107.6	28.8	18	31	0	0.00
Tower Ridge	8.29	8.40	0.11	13788.40	79.31	103.4	40.5	23	42	11159	6.80
Upper Musquash	41.47	41.47	0.00	62182.38	101.70	111.6	24.1	15	32	0	0.00
Van Gilder	27.62	103.64	76.02	13172.90	108.07	107.6	46.3	13	76	0	0.00
Walking Boss	26.26	40.93	14.67	17622.32	97.71	102.6	47.1	16	64	0	0.00
Warrior Hills	26.96	40.35	13.39	39817.00	84.22	110.5	33.6	22	38	0	0.00
West Brandybrook	13.71	17.79	4.08	19339.16	89.67	104.5	40.6	28	44	0	0.00

Table 14. (Cont'd.).

Sale Name NAME	Adv. Rate ADVER	Stat Hi bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982=100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPEC$	Avg. Spec SPEC
	$/Mbf	$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$	$/Mbf
West Lonesome Road	43.96	46.69	2.73	32592.45	116.91	117.5	29.9	18	40	0	0.00
West Stocking Creek	15.66	15.88	0.22	23852.60	85.33	106.9	36.1	22	39	6865	4.57
West TV Tower	3.22	11.26	8.04	15958.21	84.31	104.5	32.2	17	34	8840	6.24
Winnepesaug II	16.06	21.24	5.18	12788.50	85.47	110.5	47.7	14	55	0	0.00
Young Hawk	26.96	36.23	9.27	19671.86	105.64	115.5	7.7	7	8	0	0.00

Table 14. (Cont'd.).

Sale Name NAME	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOL	Avg. Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	Shelt Volume SHELT	OR Volume OR	Thin Volume THIN	Select Volume SELECT
	$	$/Mbf	Miles	Mbf	Mbf/Acre	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
4 D	1169	4.51	0.1	259	3.87	0	259	0	0	0	259	0
Bean Hill	3030	3.44	1.9	881	12.07	881	0	881	0	0	0	0
Bluebird III	0	0.00	0.0	379	1.33	379	0	379	0	0	0	0
Bobcat	1200	1.15	1.0	1048	6.16	675	156	623	0	52	156	0
Casper Oaks	818	1.57	0.3	520	5.04	520	0	517	0	0	0	0
Clean Sweep	0	0.00	0.0	104	2.68	0	104	0	0	0	104	0
Davison Fountain	120	0.17	0.1	722	4.30	272	450	272	0	0	450	0
DeJarlais Road	0	0.00	0.0	155	5.52	0	155	0	0	0	155	0
Duck Marsh	0	0.00	0.0	166	4.36	166	0	0	0	166	0	0
Foley West	360	0.53	0.2	682	6.62	682	0	288	170	224	0	0
Henning Corners	1722	7.50	1.4	229	3.76	230	0	191	39	0	0	0
Holloway Road	2881	1.68	0.5	1720	6.39	1192	527	923	0	260	527	0
Indian Creek Draw II	402	2.37	0.4	170	6.79	170	0	170	0	0	0	0
Kellogg Lake	525	0.16	0.0	3332	8.68	2519	813	2191	100	226	813	0
Kinsey-Hunt	3458	1.96	1.4	1765	6.17	1553	211	86	0	1466	211	0
Loud Beaver Pond	347	3.19	0.6	109	4.19	0	109	0	0	0	109	0
Luzerne Tower	1200	0.44	0.6	2739	6.03	1854	884	1854	0	0	884	0
Mack Hills	2273	1.58	1.3	1440	5.83	1326	115	1324	0	0	115	0
Markle Release	480	1.77	0.8	272	3.83	272	0	0	0	272	0	0
Merry Hag	600	0.44	0.5	1356	5.45	1356	0	961	0	395	0	0
Oakland West	5458	4.37	2.0	1248	4.49	0	1248	0	0	0	1248	0
RV Release	0	0.00	0.0	194	2.20	194	0	0	0	194	0	0
Sunset	4260	1.88	1.5	2266	7.92	1565	701	1453	0	112	701	0
Trailside	0	0.00	0.0	145	4.14	145	0	0	0	145	0	0
Twin Oaks	0	0.00	0.0	327	4.09	327	0	327	0	0	0	0
West Branch	5075	3.53	1.3	1437	7.90	331	1107	331	0	0	1107	0
88th Street	1615	3.54	0.5	457	6.92	307	150	307	0	0	150	0
Atodd Lake	2751	4.16	0.0	661	9.17	476	184	476	0	0	184	0
Big River	615	0.38	0.5	1630	6.24	1630	0	1143	0	487	0	0
Big Valley	3896	1.91	1.2	2042	6.50	1688	354	966	0	722	354	0
Black Oak Flats	3758	3.02	3.4	1243	3.06	0	0	0	0	0	0	0
Broadway Avenue	3502	2.36	0.3	1486	4.46	113	1035	103	0	0	1035	0
Bub Lake	1929	2.00	0.7	964	4.73	847	118	656	0	187	0	118
Bubble Cuffer	3367	2.94	0.2	1146	12.45	1146	0	1146	0	0	0	0
Carlton Creek II	823	1.16	0.0	708	7.29	2	706	0	0	0	0	83
Cedar Creek	3069	2.13	0.8	1439	3.66	1016	422	0	995	0	254	77
Chilliwack	730	1.26	0.0	577	7.31	216	0	216	0	0	0	0
Clay Pit	1422	0.86	0.5	1659	12.76	1659	0	1453	0	206	0	0
Cool Creek	6869	6.19	2.0	1110	8.74	1110	0	901	0	209	0	0
Crocker Road	1683	2.62	0.3	642	2.93	474	168	0	474	0	168	0
Dorner Lake	4073	5.61	1.8	726	6.48	727	0	712	0	0	0	0
Dungeon Swamp	1811	2.05	0.3	885	4.15	204	680	204	0	0	0	546
Elm Drive	1416	1.66	0.5	855	6.52	322	0	321	0	0	0	0
Fiers Corner	1924	2.78	0.9	691	3.53	174	218	174	0	0	218	0
Four Cutter	1993	2.51	0.0	793	7.14	0	0	0	0	0	0	0

Table 14. (Cont'd.).

Sale Name NAME	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOL	Avg. Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	Shelt Volume SHELT	OR Volume OR	Thin Volume THIN	Select Volume SELECT
	$	$/Mbf	Miles	Mbf	Mbf/Acre	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Golden Knoll	741	0.94	0.9	791	6.59	641	150	641	0	0	150	0
Golf Course II	1054	1.97	0.3	535	5.69	0	535	0	0	0	0	535
Hart to Hart	2516	3.72	0.1	677	4.57	677	0	275	402	0	0	0
Hay Hill	1948	2.89	0.0	675	3.81	56	0	0	0	56	0	0
Hodag Den	2111	2.45	0.2	860	4.72	0	0	0	0	0	0	0
Hungerford Tower	1412	1.81	0.3	782	6.68	391	390	0	379	0	0	390
Indian Lake	538	0.73	0.0	734	3.76	0	734	0	0	0	493	241
Jobs Bill	3130	4.88	0.5	642	3.49	0	0	0	0	0	0	0
Last Chance	1000	2.34	0.4	427	8.38	427	0	427	0	0	0	0
Little Buck	960	2.76	0.8	348	5.81	348	0	0	0	348	0	0
Little Oak Grove	22	0.10	0.0	228	5.71	0	228	0	0	0	228	0
Little Totem	365	3.35	0.0	109	7.27	109	0	0	0	109	0	0
Long Haul	1057	2.22	0.5	475	5.11	0	0	0	0	0	0	0
Lower Crossing	256	3.14	0.1	82	6.80	82	0	82	0	0	0	0
Lower Musquash	1633	4.19	0.2	390	6.50	87	25	87	0	0	25	0
Lower Post	803	4.78	0.0	168	7.63	168	0	0	0	168	0	0
Luther Chapel II	467	2.71	0.0	172	6.38	172	0	0	172	0	0	0
Mena Creek	4678	2.06	0.9	2273	6.06	1649	624	637	93	919	624	0
Mullen Creek	487	1.23	0.0	397	6.31	397	0	397	0	0	0	0
North End	1038	2.27	0.2	458	3.69	0	458	0	0	0	458	0
North Totem Blight	1576	4.15	0.2	380	5.07	380	0	0	0	380	0	0
Oil Well	2359	1.49	1.0	1584	7.92	738	0	738	0	0	0	0
Over the Hill Sawlog	1555	3.20	0.6	485	3.68	0	0	0	0	0	0	0
Piney Woods	897	0.76	1.8	1181	6.52	1181	0	281	0	900	0	0
Podunk II	1016	6.25	0.4	163	3.54	163	0	0	163	0	0	0
Rabbit	3088	3.43	0.1	899	4.68	178	0	68	103	0	0	0
Rolling Hills II	1687	1.40	0.0	1205	9.49	1205	0	468	722	0	0	0
Savannah	0	0.00	0.0	165	3.16	165	0	0	165	0	0	0
School Marm Sawlog	3394	4.15	1.2	818	4.76	212	0	0	0	212	0	0
Selma Lakes	4072	5.23	1.6	778	4.99	106	672	106	0	0	672	0
Sheep Ranch	681	2.17	0.2	314	7.84	314	0	314	0	0	0	0
Shelly Lake	1679	8.71	0.5	193	3.71	193	0	0	193	0	0	0
Short Staker	1295	5.20	0.8	249	4.37	249	0	0	0	249	0	0
Skeels Creek	2836	3.75	0.5	756	4.20	726	31	0	726	0	31	0
Sour Apple	2508	2.69	1.4	934	10.38	784	96	784	0	0	96	0
South Lookout	2817	5.97	1.8	472	10.04	472	0	472	0	0	0	0
South Totem	970	3.47	0.2	279	8.73	207	0	0	0	207	0	0
Spreadout	1200	1.02	1.0	1174	7.72	431	0	431	0	0	0	0
Syers Lake	1537	1.38	1.2	1113	8.69	1113	0	799	0	314	0	0
Tower Ridge	3780	2.30	0.2	1641	4.81	14	731	0	0	0	731	0
Upper Musquash	2184	1.46	0.4	1500	8.52	275	0	275	0	0	0	0
Van Gilder	760	5.98	0.0	127	4.89	127	0	0	127	0	0	0
Walking Boss	1323	3.07	0.0	431	4.78	431	0	431	0	0	0	0
Warrior Hills	1567	1.59	0.2	987	7.26	328	658	328	0	0	658	0
West Brandybrook	10141	9.33	2.0	1087	5.43	236	0	236	0	0	0	0

Table 14. (Cont'd.).

Sale Name NAME	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOL	Avg. Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	Shelt Volume SHELT	OR Volume OR	Thin Volume THIN	Select Volume SELECT
	$	$/Mbf	Miles	Mbf	Mbf/Acre	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
West Lonesome Road	1693	2.43	1.2	698	5.02	0	0	0	0	0	0	0
West Stocking Creek	2214	1.47	1.1	1502	5.46	410	0	401	0	0	0	0
West TV Tower	4252	3.00	1.2	1418	3.51	15	1211	0	0	0	1211	0
Winnepesaug II	1273	2.11	0.4	602	3.07	496	106	167	329	0	106	0
Young Hawk	1200	2.21	1.0	543	4.68	543	0	0	0	543	0	0

Table 14. (Cont'd.).

Sale Name NAME	Imp Volume IMP	Mixed Volume MIX	Road Volume ROAD	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	Shelt % Vol %SHELT	OR % Vol %OR	Thin % Vol %THIN	Select % Vol %SELECT	Imp % Vol %IMP	Mixed % Vol %MIX
	Mbf	Mbf	Mbf									
4 D	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Bean Hill	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bluebird III	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bobcat	0	218	0	64.4%	14.9%	59.5%	0.0%	5.0%	14.9%	0.0%	0.0%	20.8%
Casper Oaks	0	0	3	100.0%	0.0%	99.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Clean Sweep	0	0	0	0.0%	99.6%	0.0%	0.0%	0.0%	99.6%	0.0%	0.0%	0.0%
Davison Fountain	0	0	0	37.7%	62.3%	37.7%	0.0%	0.0%	62.3%	0.0%	0.0%	0.0%
DeJarlais Road	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Duck Marsh	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Foley West	0	0	0	100.0%	0.0%	42.2%	24.9%	32.8%	0.0%	0.0%	0.0%	0.0%
Henning Corners	0	0	0	100.0%	0.0%	83.2%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Holloway Road	0	0	9	69.3%	30.6%	53.7%	0.0%	15.1%	30.6%	0.0%	0.0%	0.0%
Indian Creek Draw II	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kellogg Lake	0	0	2	75.6%	24.4%	65.8%	3.0%	6.8%	24.4%	0.0%	0.0%	0.0%
Kinsey-Hunt	0	0	1	88.0%	12.0%	4.9%	0.0%	83.0%	12.0%	0.0%	0.0%	0.0%
Loud Beaver Pond	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Luzerne Tower	0	0	0	67.7%	32.3%	67.7%	0.0%	0.0%	32.3%	0.0%	0.0%	0.0%
Mack Hills	0	0	2	92.1%	8.0%	91.9%	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%
Markle Release	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Merry Hag	0	0	0	100.0%	0.0%	70.9%	0.0%	29.1%	0.0%	0.0%	0.0%	0.0%
Oakland West	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
RV Release	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Sunset	0	0	0	69.1%	30.9%	64.1%	0.0%	4.9%	30.9%	0.0%	0.0%	0.0%
Trailside	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Twin Oaks	0	0	0	99.9%	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
West Branch	0	0	0	23.0%	77.0%	23.0%	0.0%	0.0%	77.0%	0.0%	0.0%	0.0%
88th Street	0	0	0	67.2%	32.8%	67.2%	0.0%	0.0%	32.8%	0.0%	0.0%	0.0%
Atodd Lake	0	0	0	72.1%	27.9%	72.1%	0.0%	0.0%	27.9%	0.0%	0.0%	0.0%
Big River	0	0	0	100.0%	0.0%	70.1%	0.0%	29.9%	0.0%	0.0%	0.0%	0.0%
Big Valley	0	0	0	82.7%	17.3%	47.3%	0.0%	35.4%	17.3%	0.0%	0.0%	0.0%
Black Oak Flats	0	1243	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Broadway Avenue	0	339	10	7.6%	69.6%	6.9%	0.0%	0.0%	69.6%	0.0%	0.0%	22.8%
Bub Lake	0	0	4	87.9%	12.2%	68.0%	0.0%	19.4%	0.0%	12.2%	0.0%	0.0%
Bubble Cuffer	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Carlton Creek II	623	0	2	0.3%	99.8%	0.0%	0.0%	0.0%	0.0%	11.7%	88.1%	0.0%
Cedar Creek	91	0	21	70.6%	29.3%	0.0%	69.2%	0.0%	17.7%	5.4%	6.3%	0.0%
Chilliwack	0	361	0	37.4%	0.0%	37.4%	0.0%	0.0%	0.0%	0.0%	0.0%	62.5%
Clay Pit	0	0	0	100.0%	0.0%	87.6%	0.0%	12.4%	0.0%	0.0%	0.0%	0.0%
Cool Creek	0	0	0	100.0%	0.0%	81.2%	0.0%	18.8%	0.0%	0.0%	0.0%	0.0%
Crocker Road	0	0	0	73.8%	26.2%	0.0%	73.8%	0.0%	26.2%	0.0%	0.0%	0.0%
Dorner Lake	0	0	15	100.0%	0.0%	98.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dungeon Swamp	134	0	0	23.1%	76.9%	23.1%	0.0%	0.0%	0.0%	61.7%	15.1%	0.0%
Elm Drive	0	533	1	37.7%	0.0%	37.6%	0.0%	0.0%	0.0%	0.0%	0.9%	62.4%
Fiers Corner	0	299	0	25.2%	31.5%	25.2%	0.0%	0.0%	31.5%	0.0%	0.0%	43.3%
Four Cutter	0	793	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Table 14. (Cont'd.).

Sale Name NAME	Imp Volume IMP	Mixed Volume MIX	Road Volume ROAD	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	Shelt % Vol %SHELT	OR % Vol %OR	Thin % Vol %THIN	Select % Vol %SELECT	Imp % Vol %IMP	Mixed % Vol %MIX
	Mbf	Mbf	Mbf									
Golden Knoll	0	0	0	81.0%	19.0%	81.0%	0.0%	0.0%	19.0%	0.0%	0.0%	0.0%
Golf Course II	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Hart to Hart	0	0	0	100.0%	0.0%	40.6%	59.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Hay Hill	0	619	0	8.3%	0.0%	0.0%	0.0%	8.3%	0.0%	0.0%	0.0%	91.7%
Hodag Den	0	860	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Hungerford Tower	0	0	12	50.0%	49.9%	0.0%	48.5%	0.0%	0.0%	49.9%	0.0%	0.0%
Indian Lake	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%	67.2%	32.8%	0.0%	0.0%
Jobs Bill	0	642	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Last Chance	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Little Buck	0	0	0	99.9%	0.0%	0.0%	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%
Little Oak Grove	0	0	0	0.0%	99.9%	0.0%	0.0%	0.0%	99.9%	0.0%	0.0%	0.0%
Little Totem	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Long Haul	0	475	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Lower Crossing	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lower Musquash	0	278	0	22.3%	6.4%	22.3%	0.0%	0.0%	6.4%	0.0%	0.0%	71.3%
Lower Post	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Luther Chapel II	0	0	0	99.8%	0.0%	0.0%	99.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Mena Creek	0	0	0	72.5%	27.5%	28.0%	4.1%	40.4%	27.5%	0.0%	0.0%	0.0%
Mullen Creek	0	0	0	99.9%	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
North End	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
North Totem Blight	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Oil Well	0	846	0	46.6%	0.0%	46.6%	0.0%	0.0%	0.0%	0.0%	0.0%	53.4%
Over the Hill Sawlog	0	485	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Piney Woods	0	0	0	100.0%	0.0%	23.8%	0.0%	76.2%	0.0%	0.0%	0.0%	0.0%
Podunk II	0	0	0	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rabbit	0	721	7	19.8%	0.0%	7.6%	11.5%	0.0%	0.0%	0.0%	0.0%	80.2%
Rolling Hills II	0	0	15	100.0%	0.0%	38.8%	59.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Savannah	0	0	0	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
School Marm Sawlog	0	606	0	25.9%	0.0%	0.0%	0.0%	25.9%	0.0%	0.0%	0.0%	74.1%
Selma Lakes	0	0	0	13.6%	86.3%	13.6%	0.0%	0.0%	86.3%	0.0%	0.0%	0.0%
Sheep Ranch	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Shelly Lake	0	0	0	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Short Staker	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Skeels Creek	0	0	0	96.0%	4.1%	0.0%	96.0%	0.0%	4.1%	0.0%	0.0%	0.0%
Sour Apple	0	54	0	83.9%	10.3%	83.9%	0.0%	0.0%	10.3%	0.0%	0.0%	5.8%
South Lookout	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Totem	0	73	0	74.1%	0.0%	0.0%	0.0%	74.1%	0.0%	0.0%	0.0%	26.1%
Spreadout	0	743	0	36.7%	0.0%	36.7%	0.0%	0.0%	0.0%	0.0%	0.0%	63.3%
Syers Lake	0	0	0	100.0%	0.0%	71.8%	0.0%	28.2%	0.0%	0.0%	0.0%	0.0%
Tower Ridge	0	897	14	0.9%	44.5%	0.0%	0.0%	0.0%	44.5%	0.0%	0.0%	54.6%
Upper Musquash	0	1225	0	18.3%	0.0%	18.3%	0.0%	0.0%	0.0%	0.0%	0.0%	81.7%
Van Gilder	0	0	0	99.9%	0.0%	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Walking Boss	0	0	0	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Warrior Hills	0	0	0	33.2%	66.7%	33.2%	0.0%	0.0%	66.7%	0.0%	0.0%	0.0%
West Brandybrook	0	851	0	21.7%	0.0%	21.7%	0.0%	0.0%	0.0%	0.0%	0.0%	78.3%

Table 14. (Cont'd.).

Sale Name NAME	Imp Volume IMP	Mixed Volume MIX	Road Volume ROAD	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	Shelt % Vol %SHELT	OR % Vol %OR	Thin % Vol %THIN	Select % Vol %SELECT	Imp % Vol %IMP	Mixed % Vol %MIX
	Mbf	Mbf	Mbf									
West Lonesome Road	0	698	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
West Stocking Creek	0	1092	9	27.3%	0.0%	26.7%	0.0%	0.0%	0.0%	0.0%	0.0%	72.7%
West TV Tower	0	191	15	1.1%	85.4%	0.0%	0.0%	0.0%	85.4%	0.0%	0.0%	13.5%
Winnepesaug II	0	0	0	82.4%	17.6%	27.7%	54.7%	0.0%	17.6%	0.0%	0.0%	0.0%
Young Hawk	0	0	0	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%

Table 14. (Cont'd.).

Sale Name NAME	Road % Vol %ROAD	# of Clear #CC	# of Shelt #SHELT	# of OR #OR	# of Thin #THIN	# of Select #SELECT	# of Imp #IMP	# of Mixed #MIX	# of Road #ROAD	Mixed Hdws MHS	Aspen AS	Red & White RWS
										Mbf	Mbf	Mbf
4 D	0.0%	0	0	0	3	0	0	0	0	2	25	0
Bean Hill	0.0%	7	0	0	0	0	0	0	0	118	100	33
Bluebird III	0.0%	7	0	0	0	0	0	0	0	0	0	0
Bobcat	0.0%	4	0	1	1	0	0	1	0	107	55	0
Casper Oaks	0.6%	7	0	0	0	0	0	0	1	129	0	0
Clean Sweep	0.0%	0	0	0	4	0	0	0	0	0	0	0
Davison Fountain	0.0%	3	0	0	4	0	0	0	0	134	30	66
DeJarlais Road	0.0%	0	0	0	1	0	0	0	0	23	0	0
Duck Marsh	0.0%	0	0	1	0	0	0	0	0	0	0	0
Foley West	0.0%	2	1	2	0	0	0	0	0	56	35	4
Henning Corners	0.0%	4	1	0	0	0	0	0	0	32	0	0
Holloway Road	0.5%	4	0	1	2	0	0	0	1	227	79	86
Indian Creek Draw II	0.0%	1	0	0	0	0	0	0	0	0	0	7
Kellogg Lake	0.1%	14	1	1	5	0	0	0	1	321	68	92
Kinsey-Hunt	0.1%	1	0	8	1	0	0	0	1	141	65	105
Loud Beaver Pond	0.0%	0	0	0	2	0	0	0	0	50	0	0
Luzerne Tower	0.0%	9	0	0	2	0	0	0	0	124	136	17
Mack Hills	0.1%	5	0	0	1	0	0	0	1	184	81	112
Markle Release	0.0%	0	0	2	0	0	0	0	0	30	0	0
Merry Hag	0.0%	5	0	3	0	0	0	0	0	125	65	34
Oakland West	0.0%	0	0	0	6	0	0	0	0	71	137	61
RV Release	0.0%	0	0	3	0	0	0	0	0	47	0	0
Sunset	0.0%	7	0	1	2	0	0	0	0	310	277	52
Trailside	0.0%	0	0	3	0	0	0	0	0	36	0	0
Twin Oaks	0.0%	3	0	0	0	0	0	0	0	0	0	0
West Branch	0.0%	3	0	0	9	0	0	0	0	191	122	2
88th Street	0.0%	1	0	0	2	0	0	0	0	119	53	0
Atodd Lake	0.0%	2	0	0	1	0	0	0	0	182	81	0
Big River	0.0%	7	0	3	0	0	0	0	0	327	0	0
Big Valley	0.0%	5	0	4	2	0	0	0	0	194	130	0
Black Oak Flats	0.0%	0	0	0	0	0	0	5	0	683	13	0
Broadway Avenue	0.7%	1	0	0	5	0	0	2	2	427	45	0
Bub Lake	0.4%	7	0	1	0	1	0	0	1	187	161	0
Bubble Cuffer	0.0%	5	0	0	0	0	0	0	0	342	139	0
Carlton Creek II	0.3%	0	0	0	0	1	2	0	1	202	27	0
Cedar Creek	1.5%	0	10	0	1	2	1	0	1	389	0	0
Chilliwack	0.0%	2	0	0	0	0	0	2	0	221	43	0
Clay Pit	0.0%	5	0	1	0	0	0	0	0	204	0	0
Cool Creek	0.0%	5	0	2	0	0	0	0	0	162	0	88
Crocker Road	0.0%	0	6	0	3	0	0	0	0	141	0	0
Dorner Lake	2.1%	9	0	0	0	0	0	0	1	97	0	14
Dungeon Swamp	0.0%	1	0	0	0	4	1	0	0	117	84	0
Elm Drive	0.1%	2	0	0	0	0	0	2	1	63	94	0
Fiers Corner	0.0%	1	0	0	2	0	0	2	0	65	31	0
Four Cutter	0.0%	0	0	0	0	0	0	2	0	352	16	0

Table 14. (Cont'd.).

Sale Name NAME	Road % Vol %ROAD	# of Clear #CC	# of Shelt #SHELT	# of OR #OR	# of Thin #THIN	# of Select #SELECT	# of Imp #IMP	# of Mixed #MIX	# of Road #ROAD	Mixed Hdws MHS	Aspen AS	Red & White RWS
										Mbf	Mbf	Mbf
Golden Knoll	0.0%	6	0	0	1	0	0	0	0	126	0	0
Golf Course II	0.0%	0	0	0	0	4	0	0	0	165	16	0
Hart to Hart	0.0%	2	5	0	0	0	0	0	0	236	0	0
Hay Hill	0.0%	0	0	1	0	0	0	5	0	315	36	0
Hodag Den	0.0%	0	0	0	0	0	0	7	0	444	57	0
Hungerford Tower	1.5%	0	1	0	0	2	0	0	1	150	50	0
Indian Lake	0.0%	0	0	0	4	4	0	0	0	188	0	0
Jobs Bill	0.0%	0	0	0	0	0	0	5	0	39	31	0
Last Chance	0.0%	2	0	0	0	0	0	0	0	105	0	0
Little Buck	0.0%	0	0	3	0	0	0	0	0	161	0	0
Little Oak Grove	0.0%	0	0	0	1	0	0	0	0	16	18	0
Little Totem	0.0%	0	0	1	0	0	0	0	0	28	0	0
Long Haul	0.0%	0	0	0	0	0	0	4	0	66	37	0
Lower Crossing	0.0%	1	0	0	0	0	0	0	0	31	0	0
Lower Musquash	0.0%	1	0	0	1	0	0	2	0	107	24	0
Lower Post	0.0%	0	0	1	0	0	0	0	0	78	0	0
Luther Chapel II	0.0%	0	1	0	0	0	0	0	0	52	0	0
Mena Creek	0.0%	6	2	5	5	0	0	0	0	506	208	0
Mullen Creek	0.0%	3	0	0	0	0	0	0	0	73	35	0
North End	0.0%	0	0	0	4	0	0	0	0	38	0	0
North Totem Blight	0.0%	0	0	2	0	0	0	0	0	149	0	0
Oil Well	0.0%	5	0	0	0	0	0	4	0	318	141	0
Over the Hill Sawlog	0.0%	0	0	0	0	0	0	3	0	191	41	0
Piney Woods	0.0%	2	0	8	0	0	0	0	0	302	0	0
Podunk II	0.0%	0	2	0	0	0	0	0	0	62	0	0
Rabbit	0.8%	1	1	0	0	0	0	3	1	158	48	0
Rolling Hills II	1.2%	2	2	0	0	0	0	0	1	241	62	0
Savannah	0.0%	0	3	0	0	0	0	0	0	18	0	0
School Marm Sawlog	0.0%	0	0	1	0	0	0	3	0	441	30	0
Selma Lakes	0.0%	1	0	0	4	0	0	0	0	64	32	0
Sheep Ranch	0.0%	2	0	0	0	0	0	0	0	168	4	0
Shelly Lake	0.0%	0	2	0	0	0	0	0	0	61	0	0
Short Staker	0.0%	0	0	2	0	0	0	0	0	80	0	0
Skeels Creek	0.0%	0	7	0	1	0	0	0	0	269	0	0
Sour Apple	0.0%	4	0	0	2	0	0	1	0	122	148	0
South Lookout	0.0%	3	0	0	0	0	0	0	0	34	49	0
South Totem	0.0%	0	0	1	0	0	0	1	0	152	0	0
Spreadout	0.0%	2	0	0	0	0	0	3	0	137	213	0
Syers Lake	0.0%	4	0	2	0	0	0	0	0	135	52	0
Tower Ridge	0.9%	0	0	0	4	0	0	3	1	73	60	0
Upper Musquash	0.0%	3	0	0	0	0	0	5	0	590	105	0
Van Gilder	0.0%	0	1	0	0	0	0	0	0	60	0	0
Walking Boss	0.0%	4	0	0	0	0	0	0	0	144	8	0
Warrior Hills	0.0%	2	0	0	2	0	0	0	0	126	148	0
West Brandybrook	0.0%	1	0	0	0	0	0	4	0	118	113	0

Table 14. (Cont'd.).

Sale Name NAME	Road % Vol %ROAD	# of Clear #CC	# of Shelt #SHELT	# of OR #OR	# of Thin #THIN	# of Select #SELECT	# of Imp #IMP	# of Mixed #MIX	# of Road #ROAD	Mixed Hdws MHS	Aspen AS	Red & White RWS
										Mbf	Mbf	Mbf
West Lonesome Road	0.0%	0	0	0	0	0	0	5	0	319	3	0
West Stocking Creek	0.6%	2	0	0	0	0	0	5	1	117	139	0
West TV Tower	1.1%	0	0	0	9	0	0	1	1	143	10	0
Winnepesaug II	0.0%	1	3	0	1	0	0	0	0	87	20	0
Young Hawk	0.0%	0	0	5	0	0	0	0	0	174	0	0

Table 14. (Cont'd.).

Sale Name NAME	Jack Pine JPS	Mixed Hdws MHP	Aspen AP	Red & White RWP	Jack Pine JPP	Balsam Fir BFP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
4 D	0	173	58	0	0	0
Bean Hill	0	398	218	0	0	14
Bluebird III	0	379	0	0	0	0
Bobcat	12	710	124	0	38	0
Casper Oaks	43	294	0	0	53	0
Clean Sweep	0	104	0	0	0	0
Davison Fountain	0	384	42	36	29	0
DeJarlais Road	0	132	0	0	0	0
Duck Marsh	0	105	61	0	0	0
Foley West	67	305	167	0	47	0
Henning Corners	0	156	0	0	39	0
Holloway Road	24	885	287	44	88	0
Indian Creek Draw II	14	89	0	3	57	0
Kellogg Lake	84	2182	396	34	155	0
Kinsey-Hunt	111	841	247	25	230	0
Loud Beaver Pond	0	59	0	0	0	0
Luzerne Tower	69	1395	861	10	127	0
Mack Hills	44	714	210	33	63	0
Markle Release	7	173	0	0	61	0
Merry Hag	47	614	242	0	229	0
Oakland West	0	744	235	0	0	0
RV Release	6	113	5	0	28	0
Sunset	16	0	0	0	0	0
Trailside	16	65	0	0	28	0
Twin Oaks	0	291	0	0	37	0
West Branch	0	1015	107	0	0	0
88th Street	0	165	120	0	0	0
Atodd Lake	0	199	138	0	0	0
Big River	0	1188	115	0	0	0
Big Valley	0	1144	574	0	0	0
Black Oak Flats	0	519	28	0	0	0
Broadway Avenue	0	674	340	0	0	0
Bub Lake	0	390	390	0	0	0
Bubble Cuffer	0	340	325	0	0	0
Carlton Creek II	0	407	72	0	0	0
Cedar Creek	0	1050	0	0	0	0
Chilliwack	0	236	77	0	0	0
Clay Pit	0	819	636	0	0	0
Cool Creek	0	459	401	0	0	0
Crocker Road	0	455	46	0	0	0
Dorner Lake	0	330	285	0	0	0
Dungeon Swamp	0	552	132	0	0	0
Elm Drive	0	498	200	0	0	0
Fiers Corner	0	459	136	0	0	0
Four Cutter	0	353	72	0	0	0

Table 14. (Cont'd.).

Sale Name NAME	Jack Pine JPS	Mixed Hdws MHP	Aspen AP	Red & White RWP	Jack Pine JPP	Balsam Fir BFP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Golden Knoll	0	350	315	0	0	0
Golf Course II	0	235	94	25	0	0
Hart to Hart	0	441	0	0	0	0
Hay Hill	0	254	70	0	0	0
Hodag Den	0	306	53	0	0	0
Hungerford Tower	0	394	187	0	0	0
Indian Lake	0	546	0	0	0	0
Jobs Bill	0	390	182	0	0	0
Last Chance	0	322	0	0	0	0
Little Buck	0	187	0	0	0	0
Little Oak Grove	0	99	95	0	0	0
Little Totem	0	81	0	0	0	0
Long Haul	0	247	125	0	0	0
Lower Crossing	0	51	0	0	0	0
Lower Musquash	0	0	41	0	0	0
Lower Post	0	90	0	0	0	0
Luther Chapel II	0	77	44	0	0	0
Mena Creek	0	832	714	13	0	0
Mullen Creek	0	181	108	0	0	0
North End	0	420	0	0	0	0
North Totem Blight	0	231	0	0	0	0
Oil Well	0	679	447	0	0	0
Over the Hill Sawlog	0	158	95	0	0	0
Piney Woods	0	765	114	0	0	0
Podunk II	0	99	2	0	0	0
Rabbit	0	537	156	0	0	0
Rolling Hills II	0	606	296	0	0	0
Savannah	0	127	19	0	0	0
School Marm Sawlog	0	289	58	0	0	0
Selma Lakes	0	619	63	0	0	0
Sheep Ranch	0	132	10	0	0	0
Shelly Lake	0	132	0	0	0	0
Short Staker	0	169	0	0	0	0
Skeels Creek	0	487	0	0	0	0
Sour Apple	0	425	239	0	0	0
South Lookout	0	210	179	0	0	0
South Totem	0	127	0	0	0	0
Spreadout	0	459	313	0	0	0
Syers Lake	0	542	382	0	0	0
Tower Ridge	0	1355	154	0	0	0
Upper Musquash	0	616	188	0	0	0
Van Gilder	0	59	8	0	0	0
Walking Boss	0	268	11	0	0	0
Warrior Hills	0	380	334	0	0	0
West Brandybrook	0	537	319	0	0	0

Table 14. (Cont'd.).

Sale Name NAME	Jack Pine JPS	Mixed Hdws MHP	Aspen AP	Red & White RWP	Jack Pine JPP	Balsam Fir BFP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
West Lonesome Road	0	372	5	0	0	0
West Stocking Creek	0	796	449	0	0	0
West TV Tower	0	1255	10	0	0	0
Winnepesaug II	0	408	86	0	0	0
Young Hawk	0	369	0	0	0	0

Table 15. Huron-Manistee National Forest variable means and standard deviations.

Variable	Mean	Standard Deviation
MONTHS	34.4	13.5
ACRES	147.6	104.7
PU	5.6	3.7
BIDS	2.6	2.0
ADVER	$23.54	$9.20
STUMPAGE	$30.94	$13.94
OVERBID	$7.40	$9.05
VALUE	$23,821	$17,977
FOBVAL	$96.92	$14.72
HAUL	34.8	13.6
SAWH	14.2	7.1
PULPH	42.9	16.4
SPEC$	$1,249	$4,009
SPEC	$1.07	$2.53
TEMP$	$1,836	$1,648
TEMP	$2.54	$1.91
TEMPM	0.6	0.6
VOL	823.9	619.8
AVGVOL	5.9	2.2
EVOL	480.2	530.1
UNVOL	184.5	312.9
CC	319.9	445.1
SHELT	56.3	165.4
OR	102.4	231.5
THIN	154.6	297.9
SELECT	20.9	91.1
IMP	8.9	65.8
MIX	159.4	316.4
ROAD	1.5	4.1
%EVOL	60.9%	41.1%
%UNVOL	21.4%	34.4%
%CC	33.8%	38.0%
%SHELT	10.8%	27.7%
%OR	16.3%	32.9%
%THIN	17.4%	31.2%
%SELECT	2.9%	13.4%
%IMP	1.2%	9.2%
%MIX	17.7%	33.5%
%ROAD	0.1%	0.4%

Variable	Mean	Standard Deviation
#CC	2.09	2.71
#SHELT	0.52	1.55
#OR	0.73	1.55
#THIN	1.03	1.88
#SELECT	0.19	0.76
#IMP	0.04	0.25
#MIX	0.84	1.64
#ROAD	0.19	0.42
MHS	156.9	133.3
AS	43.5	57.5
RWS	8.1	24.1
JPS	5.9	18.7
MHP	434.3	361.1
AP	140.8	173.5
RWP	2.4	8.3
JPP	13.8	41.0
BFP	0.1	1.4

Table 16. Values of Nicolet National Forest variables.

Sale Name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	SBA Class SBA	Total Acres ACRE	# of PU's PU	# of Bids BIDS
Ada Lake	18056	6	4	28-Apr-83	30-Sep-87	53.9	S	539	10	5
Ada Lookout	18502	6	4	12-Mar-84	30-Jun-88	52.4	N	392	9	5
Allen Creek	18189	6	3	12-Sep-83	30-Sep-87	49.3	N	345	8	1
Angel	20342	6	2	22-Jul-88	30-Sep-91	38.8	S	297	11	1
Apples Way	20110	6	4	16-Nov-87	31-Dec-92	62.4	N	586	18	3
Badger Northern	18833	6	5	14-Nov-84	30-Sep-90	71.5	L	1118	28	5
Bear Camp	20656	6	4	01-Jun-89	30-Jun-92	37.5	N	316	9	3
Beaver Flowage	18015	6	4	30-Mar-83	30-Sep-88	67.0	S	557	10	3
Big Bear	18254	6	4	22-Nov-83	30-Sep-87	46.9	S	464	9	2
Big Fish	18932	6	2	10-Jan-85	30-Jun-90	66.6	N	458	10	1
Bitternut	1683	6	4	13-Apr-81	30-Sep-85	54.4	N	772	6	1
Blueberry Marsh	18437	6	4	09-Feb-84	30-Jun-89	65.6	S	1222	24	1
Butternut	20169	6	2	19-Jan-88	30-Jun-92	54.1	L	520	16	3
Camp Two	20599	6	2	21-Mar-89	30-Jun-94	64.2	L	585	13	5
CCC Pond	20060	6	5	27-Oct-87	31-Dec-89	26.5	N	130	4	8
Deer Browse	19476	6	4	27-Mar-86	31-Mar-91	61.0	N	365	17	3
Elm Sawyer	18478	6	2	15-Feb-84	30-Jun-89	65.4	N	725	17	1
Elvoy Springs	20318	6	2	02-Jun-88	30-Jun-93	61.8	N	567	30	1
Firewood	19278	6	2	13-Nov-85	30-Sep-87	22.9	N	91	3	1
Fourmile Forks	19864	6	2	12-Feb-87	30-Sep-92	68.6	N	856	29	2
Frost Pocket	18916	6	4	13-Dec-84	31-Dec-89	61.5	N	1123	33	1
Gander	18957	6	5	12-Feb-85	30-Sep-88	44.2	N	340	11	6
Gaspardo Creek	20466	6	3	18-Nov-88	30-Sep-93	59.2	N	516	21	1
Golf Course	20516	6	2	27-Dec-88	30-Jun-93	54.9	N	652	16	4
Harmony Lake	18742	6	2	20-Aug-84	30-Sep-89	62.2	S	773	25	3
Hemlock Lake	20425	6	3	14-Oct-88	30-Sep-92	48.2	N	454	14	2
Highway 55	20417	6	5	19-Sep-88	30-Sep-93	61.2	N	1006	29	2
Horseshoe	19286	6	2	12-Dec-85	31-Dec-87	25.0	N	35	2	2
Howell Lake	18890	6	2	06-Dec-84	30-Jun-86	19.0	N	164	5	2
Indian Camp	19534	6	2	08-Jul-86	31-Dec-91	66.7	S	1030	26	5
Island Swamp	20607	6	5	27-Mar-89	31-Mar-93	48.8	L	606	26	5
Kettle	18981	6	2	04-Mar-85	30-Sep-90	67.9	N	588	17	1
Kieper	19831	6	3	16-Jan-87	31-Dec-90	48.2	L	396	13	4
Knapp	20086	6	2	29-Oct-87	30-Jun-92	56.9	S	373	11	1
Landing	1723	6	3	02-Dec-81	31-Mar-84	28.3	N	133	3	4
Matterhorn	20680	6	2	13-Jun-89	30-Sep-93	52.3	N	344	14	5
May Lake	19369	6	2	17-Jan-86	31-Mar-88	26.8	N	73	4	1
McCaslin Bridge	18304	6	4	21-Dec-83	30-Sep-88	58.2	N	525	15	5
McCaslin Springs	17637	6	4	19-Jul-82	30-Sep-87	63.3	N	525	11	2
Military Hill	19211	6	2	26-Aug-85	30-Sep-91	74.2	N	530	18	1
Niemeyer	19336	6	3	23-Dec-85	31-Dec-87	24.6	N	114	3	1
Nine Mile	17983	6	4	23-Mar-83	30-Sep-88	67.3	S	462	12	3
North Brule Springs	18239	6	2	10-Nov-83	31-Mar-88	53.4	N	484	14	1
North Haystack Corners	17769	6	2	30-Nov-82	30-Sep-86	46.7	N	321	7	5
North Twin	18874	6	1	22-Oct-84	30-Sep-88	48.0	N	479	11	1

Table 16. (Cont'd.).

Sale Name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	SBA Class SBA	Total Acres ACRE	# of PU's PU	# of Bids BIDS
Old Cemetery	20540	6	5	24-Jan-89	31-Mar-93	50.9	S	869	18	5
Partridge Hop	19781	6	4	08-Jan-87	31-Dec-90	48.4	N	443	8	3
Pat Shay Shelterwood	20144	6	2	18-Dec-87	30-Jun-88	6.5	N	38	1	3
Patmar	18619	6	2	16-May-84	31-Mar-86	22.8	S	223	7	3
Pond - S	1746	6	3	01-Mar-82	30-Jun-84	28.4	N	144	3	2
Porky	18593	6	3	07-May-84	30-Sep-88	53.6	N	375	12	6
Potfish	19955	6	2	27-May-87	30-Sep-91	52.9	L	311	15	1
Powerline	18825	6	3	13-Nov-84	31-Dec-89	62.5	S	467	13	2
Powerline Road	20037	6	2	01-Oct-87	30-Jun-89	21.3	L	61	1	3
Quartz Lake	19559	6	2	11-Aug-86	30-Sep-91	62.5	L	910	23	6
Rabbit Swamp	17967	6	4	15-Mar-83	30-Sep-88	67.5	S	555	9	2
Sasacat	18031	6	4	18-Apr-83	30-Sep-87	54.2	N	651	8	1
Secret Lake	18155	6	2	31-Aug-83	30-Sep-87	49.7	N	392	18	1
Stateline	20433	6	2	07-Nov-88	30-Sep-92	47.4	L	401	10	3
Tobacco Road	17579	6	4	14-Jun-82	30-Sep-87	64.5	N	749	10	2
Torpee Creek	17934	6	5	22-Feb-83	30-Sep-87	56.0	N	657	21	2
Warvet	19930	6	2	14-May-87	30-Sep-91	53.3	N	742	16	3
West Boundary	18288	6	2	07-Dec-83	19-Dec-85	24.8	N	51	4	3
West Pine Lake	20128	6	5	23-Nov-87	31-Dec-92	62.2	N	442	16	4
White Pine	19807	6	2	13-Jan-87	30-Jun-92	66.5	L	510	13	2
Wildcat	20151	6	3	11-Jan-88	30-Sep-93	69.6	N	445	11	3

Table 16. (Cont'd.).

Sale Name NAME	Adv. Rate ADVER	Stat Hi Bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982= 100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPEC$	Avg. Spec SPEC
		$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$	$/Mbf
Ada Lake	14.64	21.19	6.55	31909.81	87.41	98.6	49.0	8	68	9034	6.00
Ada Lookout	22.49	28.81	6.32	22453.06	88.83	102.6	49.1	8	68	0	0.00
Allen Creek	32.30	33.21	0.91	31448.30	94.95	100.7	80.6	18	115	0	0.00
Angel	16.95	21.01	4.06	33790.17	76.25	118.5	98.6	16	115	0	0.00
Apples Way	3.67	10.01	6.34	42282.46	67.60	115.4	71.6	7	75	32780	7.76
Badger Northern	18.10	32.18	14.08	106694.25	95.03	105.3	78.5	5	115	0	0.00
Bear Camp	18.90	26.64	7.74	35134.00	64.70	124.1	71.5	8	75	0	0.00
Beaver Flowage	22.73	46.31	23.58	101037.57	91.15	97.9	47.2	15	68	0	0.00
Big Bear	16.25	19.80	3.55	41488.53	89.92	101.2	46.5	16	68	19227	9.18
Big Fish	19.15	20.22	1.07	41290.07	99.36	105.5	87.4	20	115	21658	10.61
Bitternut	19.98	21.25	1.27	48630.00	83.81	89.1	12.0	12	12	0	0.00
Blueberry Marsh	21.24	21.59	0.35	86097.21	91.25	102.4	76.2	9	115	16657	4.18
Butternut	20.74	25.87	5.13	63821.26	82.79	115.7	96.9	25	115	0	0.00
Camp Two	23.84	33.06	9.22	64986.50	79.67	122.3	87.7	13	115	4004	2.04
CCC Pond	15.47	21.90	6.43	6986.00	74.42	115.3	104.9	5	120	0	0.00
Deer Browse	2.89	9.92	7.03	28068.43	75.62	108.8	54.2	10	68	23832	8.43
Elm Sawyer	13.31	18.61	5.30	54507.00	86.71	102.4	93.7	12	115	0	0.00
Elvoy Springs	14.06	15.64	1.58	44797.72	83.82	118.0	95.0	15	115	12117	4.23
Firewood	43.49	43.60	0.11	8512.74	116.25	109.0	72.7	20	115	0	0.00
Fourmile Forks	12.45	18.71	6.26	78645.85	79.84	111.6	98.1	31	115	8192	1.95
Frost Pocket	16.40	16.40	0.00	79453.52	78.36	105.3	57.0	17	68	5184	1.07
Gander	8.68	37.86	29.18	29142.50	104.47	106.0	67.2	20	115	6880	8.94
Gaspardo Creek	18.10	23.98	5.88	34896.80	77.67	120.3	93.3	12	115	0	0.00
Golf Course	14.03	16.61	2.58	43851.45	74.91	120.5	104.7	25	115	0	0.00
Harmony Lake	39.12	53.12	14.00	207288.55	100.49	104.5	74.8	21	115	3887	1.00
Hemlock Lake	14.72	19.88	5.16	18088.00	73.89	120.2	99.3	10	115	0	0.00
Highway 55	6.64	15.04	8.40	41406.12	73.64	119.8	124.0	20	140	16060	5.83
Horseshoe	10.43	14.03	3.60	4155.58	90.93	109.3	105.0	19	115	0	0.00
Howell Lake	14.81	14.88	0.07	4938.01	83.64	105.3	88.7	20	115	0	0.00
Indian Camp	11.11	21.57	10.46	65499.75	88.76	109.5	100.6	25	115	5154	1.70
Island Swamp	10.65	25.38	14.73	68653.44	76.53	122.3	107.8	12	130	21049	7.78
Kettle	18.08	18.14	0.06	38482.35	90.34	106.4	94.4	19	115	0	0.00
Kieper	24.07	40.61	16.54	41037.75	83.89	111.2	82.9	17	115	0	0.00
Knapp	15.35	16.56	1.21	27772.94	87.32	115.3	90.4	29	115	13146	7.84
Landing	17.52	20.32	2.80	6696.09	87.57	94.0	19.3	21	18	0	0.00
Matterhorn	8.56	14.95	6.39	20987.24	75.38	124.1	100.7	20	115	12958	9.23
May Lake	16.87	16.87	0.00	6319.32	87.61	109.6	94.9	14	115	0	0.00
McCaslin Bridge	7.36	13.66	6.30	33205.88	74.43	101.3	46.8	15	55	21400	8.80
McCaslin Springs	13.82	14.33	0.51	22241.68	82.07	97.5	69.5	11	96	5855	3.77
Military Hill	19.36	19.36	0.00	36537.27	96.94	108.0	74.3	15	115	0	0.00
Niemeyer	21.21	21.21	0.00	3855.85	104.04	109.3	80.3	8	115	0	0.00
Nine Mile	13.86	26.72	12.86	51426.91	90.01	97.9	49.6	15	68	13611	7.07
North Brule Springs	19.06	25.98	6.92	53094.20	92.51	101.2	87.0	32	117	0	0.00
North Haystack Corners	10.56	20.03	9.47	30638.75	85.04	98.0	82.1	17	115	0	0.00
North Twin	16.67	16.67	0.00	32739.18	89.27	105.3	93.7	16	115	11401	5.81

Table 16. (Cont'd.).

Sale Name NAME	Adv. Rate ADVER	Stat Hi Bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982= 100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPECS	Avg. Spec SPEC
		$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$	$/Mbf
Old Cemetery	30.10	68.14	38.04	131205.25	80.03	121.1	45.7	5	68	0	0.00
Partridge Hop	3.42	8.85	5.43	12990.75	71.15	111.2	74.2	11	80	9311	6.34
Pat Shay Shelterwood	30.69	60.69	30.00	3793.00	84.47	115.4	79.8	15	115	0	0.00
Patmar	45.90	61.88	15.98	54532.57	120.50	103.4	60.8	18	115	0	0.00
Pond - S	9.74	22.57	12.83	15325.20	83.17	94.5	20.2	17	23	0	0.00
Porky	28.45	61.77	33.32	77125.00	99.93	103.4	64.8	13	115	0	0.00
Potfish	2.34	5.17	2.83	7779.48	76.24	113.1	92.7	11	115	22391	14.88
Powerline	31.89	36.44	4.55	47118.30	99.79	105.3	71.1	6	115	0	0.00
Powerline Road	21.36	32.10	10.74	11828.75	92.26	115.3	79.5	15	115	0	0.00
Quartz Lake	14.13	26.00	11.87	38544.15	90.91	109.7	95.9	22	115	743	0.20
Rabbit Swamp	8.91	16.98	8.07	37849.42	89.64	97.9	47.6	13	68	24450	10.97
Sasacat	14.37	18.72	4.35	37262.85	85.97	98.6	50.8	11	68	12297	6.18
Secret Lake	12.19	14.12	1.93	25615.00	87.67	100.2	85.8	24	115	5461	3.01
Stateline	14.87	21.07	6.20	47449.82	80.42	120.3	100.5	15	115	5722	2.54
Tobacco Road	15.21	19.39	4.18	44818.56	80.93	97.0	9.3	10	9	19717	8.53
Torpee Creek	6.87	13.49	6.62	30308.83	89.02	97.9	70.2	7	115	22583	10.10
Warvet	19.81	27.76	7.95	84702.00	79.83	113.1	92.2	13	115	0	0.00
West Boundary	17.82	24.37	6.55	11228.75	90.34	101.3	79.8	19	115	0	0.00
West Pine Lake	12.54	23.74	11.20	49392.00	71.78	115.4	119.9	26	135	3793	1.82
White Pine	29.79	35.41	5.62	135322.75	94.80	111.2	61.6	11	115	0	0.00
Wildcat	12.96	17.01	4.05	33229.30	76.69	115.7	103.1	20	115	1608	0.82

Table 16. (Cont'd.).

Sale Name NAME	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOL	Avg Volume AVGVOL	Even Volume EVOL	Uneven volume UNVOL	Clear Volume CC	Shelt Volume SHELT	Thin Volume THIN	Imp Volume IMP	Salv Volume SALV
	$	$/Mbf	Miles	Mbf	Mbf/Acre	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Ada Lake	2150	1.43	1.5	1506	2.79	27	1479	0	0	0	1479	0
Ada Lookout	0	0.00	0.0	779	1.99	150	629	150	0	204	0	308
Allen Creek	700	0.74	0.5	947	2.74	0	947	0	0	0	947	0
Angel	0	0.00	0.0	1608	5.41	583	1025	584	0	0	0	0
Apples Way	0	0.00	0.0	4225	7.21	3265	960	1597	1546	0	0	0
Badger Northern	0	0.00	0.0	3316	2.97	412	2904	412	0	822	1428	0
Bear Camp	0	0.00	0.0	1319	4.17	0	1319	0	0	1320	0	0
Beaver Flowage	3381	1.55	2.8	2182	3.92	50	2132	50	0	57	2073	0
Big Bear	2700	1.29	1.5	2095	4.52	440	1655	439	0	0	1655	0
Big Fish	0	0.00	0.0	2042	4.46	0	2042	0	0	0	2041	0
Bitternut	1050	0.46	1.5	2289	2.96	93	2196	93	0	2196	0	0
Blueberry Marsh	5900	1.48	6.5	3987	3.26	404	3584	335	0	3076	507	0
Butternut	0	0.00	0.0	2467	4.74	1172	1184	368	362	0	413	0
Camp Two	0	0.00	0.0	1966	3.36	0	1768	0	0	0	0	0
CCC Pond	0	0.00	0.0	319	2.45	0	319	0	0	0	0	0
Deer Browse	0	0.00	0.0	2828	7.75	1902	927	1807	0	927	0	0
Elm Sawyer	2340	0.80	0.5	2929	4.04	972	1958	910	63	336	1381	240
Elvoy Springs	0	0.00	0.0	2865	5.05	1138	1727	840	0	493	1165	0
Firewood	0	0.00	0.0	195	2.15	0	195	0	0	0	0	0
Fourmile Forks	0	0.00	0.0	4204	4.91	1457	2561	811	216	339	1396	0
Frost Pocket	0	0.00	0.0	4845	4.31	2337	2508	1789	528	2507	0	0
Gander	0	0.00	0.0	770	2.26	26	744	0	0	112	631	0
Gaspardo Creek	0	0.00	0.0	1455	2.82	271	1185	271	0	67	688	0
Golf Course	0	0.00	0.0	2640	4.05	1094	1259	988	0	0	1211	0
Harmony Lake	0	0.00	0.0	3902	5.05	783	2870	349	434	198	0	0
Hemlock Lake	0	0.00	0.0	910	2.00	0	910	0	0	166	0	122
Highway 55	0	0.00	0.0	2753	2.74	887	1866	626	0	69	1625	0
Horseshoe	0	0.00	0.0	296	8.46	296	0	0	80	0	0	0
Howell Lake	0	0.00	0.0	332	2.02	0	332	0	0	70	0	0
Indian Camp	0	0.00	0.0	3037	2.95	200	2838	0	109	154	2688	0
Island Swamp	0	0.00	0.0	2706	4.46	596	1704	541	0	0	1183	0
Kettle	0	0.00	0.0	2122	3.61	546	1576	546	0	86	0	0
Kieper	0	0.00	0.0	1011	2.55	225	786	225	0	32	0	0
Knapp	0	0.00	0.0	1677	4.50	204	1474	190	0	119	0	0
Landing	255	0.77	0.5	330	2.48	97	232	97	0	0	0	0
Matterhorn	0	0.00	0.0	1404	4.08	156	1009	0	0	0	0	0
May Lake	0	0.00	0.0	375	5.13	0	375	0	0	375	0	0
McCaslin Bridge	1040	0.43	1.3	2431	4.63	1576	855	1576	0	857	0	0
McCaslin Springs	1525	0.98	1.0	1552	2.96	394	1158	395	0	0	1156	0
Military Hill	0	0.00	0.0	1887	3.56	421	1466	422	0	302	115	0
Niemeyer	0	0.00	0.0	182	1.59	0	182	0	0	0	0	0
Nine Mile	2720	1.41	3.0	1925	4.17	343	1582	305	0	1223	0	0
North Brule Springs	1051	0.51	1.5	2044	4.22	1136	873	1136	0	0	0	0
North Haystack Corners	275	0.18	0.3	1529	4.76	597	932	147	0	0	933	0
North Twin	0	0.00	0.0	1964	4.10	106	1407	106	0	0	1407	0

Table 16. (Cont'd.).

Sale Name NAME	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOL	Avg Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	Shelt Volume SHELT	Thin Volume THIN	Imp Volume IMP	Salv Volume SALV
	$	$/Mbf	Miles	Mbf	Mbf/Acre	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Old Cemetery	0	0.00	0.0	1926	2.22	0	1926	0	0	0	0	0
Partridge Hop	0	0.00	0.0	1469	3.31	468	1001	390	78	1002	0	0
Pat Shay Shelterwood	0	0.00	0.0	63	1.64	0	63	0	0	0	0	0
Patmar	0	0.00	0.0	881	3.95	0	881	0	0	0	750	0
Pond - S	440	0.65	0.6	679	4.71	205	474	205	0	0	0	474
Porky	0	0.00	0.0	1249	3.33	558	690	558	0	0	0	0
Potfish	0	0.00	0.0	1505	4.84	78	1238	0	0	0	0	0
Powerline	0	0.00	0.0	1293	2.77	88	1205	88	0	83	0	70
Powerline Road	0	0.00	0.0	369	6.04	0	369	0	0	0	0	0
Quartz Lake	0	0.00	0.0	3790	4.16	449	2923	116	162	0	1037	0
Rabbit Swamp	2500	1.12	2.0	2229	4.02	1146	1083	975	0	0	773	309
Sasacat	2351	1.18	2.0	1990	3.06	30	1960	0	0	0	1960	0
Secret Lake	300	0.17	0.4	1814	4.63	685	1037	630	36	385	653	0
Stateline	0	0.00	0.0	2252	5.62	1228	1024	808	420	69	958	0
Tobacco Road	1800	0.78	1.3	2311	3.09	215	2096	144	0	0	2097	0
Torpee Creek	855	0.38	1.2	2247	3.42	953	1293	895	0	105	0	791
Warvet	0	0.00	0.0	3051	4.11	348	2093	69	0	167	178	0
West Boundary	150	0.33	0.3	461	9.04	461	0	319	141	0	0	0
West Pine Lake	0	0.00	0.0	2081	4.71	771	1310	750	0	0	1216	0
White Pine	0	0.00	0.0	3822	7.49	1757	1143	0	1757	0	354	0
Wildcat	0	0.00	0.0	1954	4.39	448	1506	449	0	248	959	0

Table 16. (Cont'd.).

Sale Name NAME	Select Volume SELECT	Road Volume ROAD	Unmix Volume UNMIX	Emix Volume EMIX	Mix Volume MIX	OR Volume OR	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	Shelt % Vol %SHELT	Thin % Vol %THIN
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf					
Ada Lake	0	27	0	0	0	0	1.8%	98.2%	0.0%	0.0%	0.0%
Ada Lookout	33	0	83	0	0	0	19.3%	80.7%	19.2%	0.0%	26.2%
Allen Creek	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Angel	1027	0	0	0	0	0	36.3%	63.7%	36.3%	0.0%	0.0%
Apples Way	961	124	0	0	0	0	77.3%	22.7%	37.8%	36.6%	0.0%
Badger Northern	654	0	0	0	0	0	12.4%	87.6%	12.4%	0.0%	24.8%
Bear Camp	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	100.0%
Beaver Flowage	0	0	0	0	0	0	2.3%	97.7%	2.3%	0.0%	2.6%
Big Bear	0	0	0	0	0	0	21.0%	79.0%	21.0%	0.0%	0.0%
Big Fish	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Bitternut	0	0	0	0	0	0	4.1%	95.9%	4.1%	0.0%	96.0%
Blueberry Marsh	0	68	0	0	0	0	10.1%	89.9%	8.4%	0.0%	77.1%
Butternut	674	0	99	0	111	444	47.5%	48.0%	14.9%	14.7%	0.0%
Camp Two	1771	0	0	0	198	0	0.0%	89.9%	0.0%	0.0%	0.0%
CCC Pond	321	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Deer Browse	0	38	0	0	0	57	67.2%	32.8%	63.9%	0.0%	32.8%
Elm Sawyer	0	0	0	0	0	0	33.2%	66.8%	31.1%	2.2%	11.5%
Elvoy Springs	72	0	0	298	0	0	39.7%	60.3%	29.3%	0.0%	17.2%
Firewood	195	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Fourmile Forks	667	20	162	43	186	370	34.6%	60.9%	19.3%	5.1%	8.1%
Frost Pocket	0	20	0	0	0	0	48.2%	51.8%	36.9%	10.9%	51.7%
Gander	0	26	0	0	0	0	3.4%	96.6%	0.0%	0.0%	14.6%
Gaspardo Creek	76	0	360	0	0	0	18.6%	81.4%	18.6%	0.0%	4.6%
Golf Course	0	0	51	107	288	0	41.4%	47.7%	37.4%	0.0%	0.0%
Harmony Lake	1905	0	1016	0	0	0	20.1%	73.6%	8.9%	11.1%	5.1%
Hemlock Lake	146	0	458	0	0	0	0.0%	100.0%	0.0%	0.0%	20.4%
Highway 55	0	8	177	255	0	0	32.2%	67.8%	22.7%	0.0%	2.5%
Horseshoe	0	0	0	0	0	217	100.0%	0.0%	0.0%	27.0%	0.0%
Howell Lake	262	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	21.1%
Indian Camp	0	0	0	0	0	91	6.6%	93.4%	0.0%	3.6%	5.1%
Island Swamp	526	51	0	0	413	0	21.8%	63.0%	20.0%	0.0%	0.0%
Kettle	1491	0	0	0	0	0	25.7%	74.3%	25.7%	0.0%	4.1%
Kieper	756	0	0	0	0	0	22.3%	77.7%	22.3%	0.0%	3.2%
Knapp	1356	14	0	0	0	0	12.1%	87.9%	11.3%	0.0%	7.1%
Landing	233	0	0	0	0	0	29.6%	70.4%	29.4%	0.0%	0.0%
Matterhorn	1012	22	0	0	223	145	11.8%	71.9%	0.0%	0.0%	0.0%
May Lake	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	100.0%
McCaslin Bridge	0	0	0	0	0	0	64.8%	35.2%	64.8%	0.0%	35.3%
McCaslin Springs	0	0	0	0	0	0	25.4%	74.6%	25.5%	0.0%	0.0%
Military Hill	1050	0	0	0	0	0	22.3%	77.7%	22.4%	0.0%	16.0%
Niemever	181	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Nine Mile	0	39	0	0	360	0	17.8%	82.2%	15.8%	0.0%	63.5%
North Brule Springs	752	0	120	0	70	0	55.6%	42.7%	55.6%	0.0%	0.0%
North Haystack Corners	0	0	0	0	0	450	39.1%	60.9%	9.6%	0.0%	0.0%
North Twin	0	0	0	0	451	0	5.4%	71.6%	5.4%	0.0%	0.0%

Table 16. (Cont'd.).

Sale Name NAME	Select Volume SELECT	Road Volume ROAD	Unmix Volume UNMIX	Emix Volume EMIX	Mix Volume MIX	OR Volume OR	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	Shelt % Vol %SHELT	Thin % Vol %THIN
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf					
Old Cemetery	1930	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Partridge Hop	0	0	0	0	0	0	31.8%	68.2%	26.6%	5.3%	68.2%
Pat Shay Shelterwood	63	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Patmar	0	0	132	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Pond - S	0	0	0	0	0	0	30.2%	69.8%	30.2%	0.0%	0.0%
Porky	512	0	180	0	0	0	44.7%	55.3%	44.7%	0.0%	0.0%
Potfish	1239	78	0	0	190	0	5.1%	82.2%	0.0%	0.0%	0.0%
Powerline	756	0	296	0	0	0	6.8%	93.2%	6.8%	0.0%	6.4%
Powerline Road	369	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%	0.0%
Quartz Lake	1891	0	0	172	418	0	11.8%	77.1%	3.1%	4.3%	0.0%
Rabbit Swamp	0	64	0	0	0	107	51.4%	48.6%	43.7%	0.0%	0.0%
Sasacat	0	30	0	0	0	0	1.5%	98.5%	0.0%	0.0%	0.0%
Secret Lake	0	18	0	0	92	0	37.8%	57.2%	34.7%	2.0%	21.2%
Stateline	0	0	0	0	0	0	54.5%	45.5%	35.9%	18.7%	3.1%
Tobacco Road	0	49	0	0	0	23	9.3%	90.7%	6.2%	0.0%	0.0%
Torpee Creek	345	58	52	0	0	0	42.4%	57.6%	39.8%	0.0%	4.7%
Warvet	0	0	1750	233	611	47	11.4%	68.6%	2.3%	0.0%	5.5%
West Boundary	0	0	0	0	0	0	100.0%	0.0%	69.2%	30.6%	0.0%
West Pine Lake	0	22	0	0	97	0	37.1%	62.9%	36.0%	0.0%	0.0%
White Pine	535	0	255	0	922	0	46.0%	29.9%	0.0%	46.0%	0.0%
Wildcat	0	0	300	0	0	0	22.9%	77.1%	23.0%	0.0%	12.7%

Table 16. (Cont'd.).

Sale Name NAME	Imp % Vol %IMP	Salv % Vol %SALV	Select % Vol %SELECT	Road % Vol %ROAD	Unmix % Vol %UNMIX	Emix % Vol %EMIX	Mix % Vol %MIX	OR % Vol %OR	# of Clear #CC	# of Shelt #SHELT	# of Thin #THIN
Ada Lake	98.2%	0.0%	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0	0	0
Ada Lookout	0.0%	39.5%	4.2%	0.0%	10.7%	0.0%	0.0%	0.0%	1	0	1
Allen Creek	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0
Angel	0.0%	0.0%	63.9%	0.0%	0.0%	0.0%	0.0%	0.0%	3	0	0
Apples Way	0.0%	0.0%	22.7%	2.9%	0.0%	0.0%	0.0%	0.0%	6	6	0
Badger Northern	43.1%	0.0%	19.7%	0.0%	0.0%	0.0%	0.0%	0.0%	2	0	7
Bear Camp	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	9
Beaver Flowage	95.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0	1
Big Bear	79.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3	0	0
Big Fish	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0
Bitternut	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0	5
Blueberry Marsh	12.7%	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	2	0	16
Butternut	16.7%	0.0%	27.3%	0.0%	4.0%	0.0%	4.5%	18.0%	2	3	0
Camp Two	0.0%	0.0%	90.1%	0.0%	0.0%	0.0%	10.1%	0.0%	0	0	0
CCC Pond	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0
Deer Browse	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	2.0%	5	0	7
Elm Sawyer	47.1%	8.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7	1	3
Elvoy Springs	40.7%	0.0%	2.5%	0.0%	0.0%	10.4%	0.0%	0.0%	4	0	4
Firewood	0.0%	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0
Fourmile Forks	33.2%	0.0%	15.9%	0.5%	3.9%	1.0%	4.4%	8.8%	6	1	4
Frost Pocket	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	6	5	18
Gander	82.0%	0.0%	0.0%	3.4%	0.0%	0.0%	0.0%	0.0%	0	0	1
Gaspardo Creek	47.3%	0.0%	5.2%	0.0%	24.7%	0.0%	0.0%	0.0%	2	0	1
Golf Course	45.9%	0.0%	0.0%	0.0%	1.9%	4.1%	10.9%	0.0%	3	0	0
Harmony Lake	0.0%	0.0%	48.8%	0.0%	26.0%	0.0%	0.0%	0.0%	2	3	1
Hemlock Lake	0.0%	13.4%	16.0%	0.0%	50.3%	0.0%	0.0%	0.0%	0	0	4
Highway 55	59.0%	0.0%	0.0%	0.3%	6.4%	9.3%	0.0%	0.0%	6	0	1
Horseshoe	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	73.3%	0	1	0
Howell Lake	0.0%	0.0%	78.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	1
Indian Camp	88.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	0	1	1
Island Swamp	43.7%	0.0%	19.4%	1.9%	0.0%	0.0%	15.3%	0.0%	6	0	0
Kettle	0.0%	0.0%	70.3%	0.0%	0.0%	0.0%	0.0%	0.0%	3	0	1
Kieper	0.0%	0.0%	74.8%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0	1
Knapp	0.0%	0.0%	80.9%	0.8%	0.0%	0.0%	0.0%	0.0%	1	0	1
Landing	0.0%	0.0%	70.7%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0	0
Matterhorn	0.0%	0.0%	72.1%	1.6%	0.0%	0.0%	16.3%	10.3%	0	0	0
May Lake	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	4
McCaslin Bridge	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7	0	8
McCaslin Springs	74.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5	0	0
Military Hill	6.1%	0.0%	55.6%	0.0%	0.0%	0.0%	0.0%	0.0%	3	0	2
Niemeyer	0.0%	0.0%	99.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0
Nine Mile	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	18.7%	0.0%	2	0	6
North Brule Springs	0.0%	0.0%	36.8%	0.0%	5.9%	0.0%	3.4%	0.0%	6	0	0
North Haystack Corners	61.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.4%	1	0	0
North Twin	71.6%	0.0%	0.0%	0.0%	0.0%	0.0%	23.0%	0.0%	1	0	0

Table 16. (Cont'd.).

Sale Name NAME	Imp % Vol %IMP	Salv % Vol %SALV	Select % Vol %SELECT	Road % Vol %ROAD	Unmix % Vol %UNMIX	Emix % vol %EMIX	Mix % Vol %MIX	OR % Vol %OR	# of Clear #CC	# of Shelt #SHELT	# of Thin #THIN
Old Cemetery	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0
Partridge Hop	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3	1	4
Pat Shay Shelterwood	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0
Patmar	85.1%	0.0%	0.0%	0.0%	15.0%	0.0%	0.0%	0.0%	0	0	0
Pond - S	0.0%	69.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0	0
Porky	0.0%	0.0%	41.0%	0.0%	14.4%	0.0%	0.0%	0.0%	3	0	0
Potfish	0.0%	0.0%	82.3%	5.2%	0.0%	0.0%	12.6%	0.0%	0	0	0
Powerline	0.0%	5.4%	58.5%	0.0%	22.9%	0.0%	0.0%	0.0%	1	0	1
Powerline Road	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0	0
Quartz Lake	27.4%	0.0%	49.9%	0.0%	0.0%	4.5%	11.0%	0.0%	1	2	0
Rabbit Swamp	34.7%	13.9%	0.0%	2.9%	0.0%	0.0%	0.0%	4.8%	3	0	0
Sasacat	98.5%	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0	0	0
Secret Lake	36.0%	0.0%	0.0%	1.0%	0.0%	0.0%	5.1%	0.0%	6	1	3
Stateline	42.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2	1	1
Tobacco Road	90.7%	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	1.0%	1	0	0
Torpee Creek	0.0%	35.2%	15.4%	2.6%	2.3%	0.0%	0.0%	0.0%	7	0	1
Warvet	5.8%	0.0%	0.0%	0.0%	57.4%	7.6%	20.0%	1.5%	1	0	2
West Boundary	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3	1	0
West Pine Lake	58.4%	0.0%	0.0%	1.1%	0.0%	0.0%	4.7%	0.0%	4	0	0
White Pine	9.3%	0.0%	14.0%	0.0%	6.7%	0.0%	24.1%	0.0%	0	7	0
Wildcat	49.1%	0.0%	0.0%	0.0%	15.4%	0.0%	0.0%	0.0%	3	0	1

Table 16. (Cont'd.).

Sale Name NAME	# of Imp #IMP	# of Select #SELECT	# of Salv #SALV	# of Roads #ROAD	# of Emix #EMIX	# of Unmix #UNMIX	# of Mixed #MIX	# of OR #OR	Mixed Hdws MHS	Sugar Maple SMS	RM17 RMS	Yellow Birch YBS
									Mbf	Mbf	Mbf	Mbf
Ada Lake	8	0	0	2	0	0	0	0	61	0	0	0
Ada Lookout	0	1	5	0	0	1	0	0	33	0	0	0
Allen Creek	8	0	0	0	0	0	0	0	27	0	0	0
Angel	0	8	0	0	0	0	0	0	150	104	0	0
Apples Way	0	5	0	1	0	0	0	0	161	0	0	0
Badger Northern	13	6	0	0	0	0	0	0	111	198	0	56
Bear Camp	0	0	0	0	0	0	0	0	21	0	0	0
Beaver Flowage	8	0	0	0	0	0	0	0	4	0	0	0
Big Bear	6	0	0	0	0	0	0	0	74	0	0	0
Big Fish	10	0	0	0	0	0	0	0	66	395	0	45
Bitternut	0	0	0	0	0	0	0	0	0	16	11	0
Blueberry Marsh	4	0	0	2	0	0	0	0	275	0	0	0
Butternut	3	4	0	0	0	1	1	2	148	348	0	0
Camp Two	0	12	0	0	0	0	1	0	153	373	0	0
CCC Pond	0	4	0	0	0	0	0	0	42	0	0	0
Deer Browse	0	0	0	4	0	0	0	1	110	0	0	0
Elm Sawyer	5	0	1	0	0	0	0	0	133	71	0	0
Elvoy Springs	9	1	0	0	1	0	0	0	123	268	0	0
Firewood	0	3	0	0	0	0	0	0	0	87	0	0
Fourmile Forks	5	5	0	3	1	1	1	2	644	0	0	0
Frost Pocket	0	0	0	4	0	0	0	0	191	0	0	0
Gander	9	0	0	1	0	0	0	0	23	171	0	0
Gaspardo Creek	11	2	0	0	0	5	0	0	307	0	0	0
Golf Course	9	0	0	0	1	1	2	0	91	176	0	0
Harmony Lake	0	13	0	0	0	4	2	0	248	1203	0	0
Hemlock Lake	0	2	2	0	0	6	0	0	136	0	0	0
Highway 55	18	0	0	1	1	2	0	0	368	0	0	0
Horseshoe	0	0	0	0	0	0	0	1	31	0	0	0
Howell Lake	0	4	0	0	0	0	0	0	0	37	0	0
Indian Camp	22	0	0	0	0	0	0	2	118	368	0	0
Island Swamp	12	5	0	1	0	0	2	0	510	0	0	0
Kettle	0	13	0	0	0	0	0	0	73	142	0	57
Kieper	0	11	0	0	0	0	0	0	83	119	0	0
Knapp	0	8	0	1	0	0	0	0	95	221	0	0
Landing	0	2	0	0	0	0	0	0	34	30	0	0
Matterhorn	0	9	0	3	0	0	1	1	81	131	0	0
May Lake	0	0	0	0	0	0	0	0	74	0	0	0
McCaslin Bridge	0	0	0	0	0	0	0	0	102	0	0	0
McCaslin Springs	6	0	0	0	0	0	0	0	104	0	0	0
Military Hill	2	11	0	0	0	0	0	0	53	125	0	0
Niemeyer	0	3	0	0	0	0	0	0	30	29	0	0
Nine Mile	0	0	0	2	0	0	2	0	12	0	0	0
North Brule Springs	0	6	0	0	0	1	1	0	85	260	0	40
North Haystack Corners	4	0	0	0	0	0	0	2	25	132	0	0
North Twin	7	0	0	0	0	0	3	0	51	272	0	65

Table 16. (Cont'd.).

Sale Name NAME	# of Imp #IMP	# of Select #SELECT	# of Salv #SALV	# of Roads #ROAD	# of Emix #EMIX	# of Unmix #UNMIX	# of Mixed #MIX	# of OR #OR	Mixed Hdws MHS	Sugar Maple SMS	RM17 RMS	Yellow Birch YBS
									Mbf	Mbf	Mbf	Mbf
Old Cemetery	0	18	0	0	0	0	0	0	683	0	0	0
Partridge Hop	0	0	0	0	0	0	0	0	123	0	0	0
Pat Shay Shelterwood	0	1	0	0	0	0	0	0	22	0	0	0
Patmar	6	0	0	0	0	1	0	0	52	384	0	0
Pond - S	0	0	2	0	0	0	0	0	10	0	0	0
Porky	0	7	0	0	0	2	0	0	21	94	0	0
Potfish	0	9	0	5	0	0	1	0	323	0	0	0
Powerline	0	7	1	0	0	3	0	0	21	53	0	0
Powerline Road	0	1	0	0	0	0	0	0	45	0	0	0
Quartz Lake	6	11	0	0	1	0	2	0	210	569	0	0
Rabbit Swamp	3	0	1	1	0	0	0	1	114	0	0	0
Sasacat	6	0	0	2	0	0	0	0	17	0	0	0
Secret Lake	6	0	0	1	0	0	1	0	31	71	0	0
Stateline	6	0	0	0	0	0	0	0	131	196	0	0
Tobacco Road	6	0	0	2	0	0	0	1	63	0	0	0
Torpee Creek	0	5	5	2	0	1	0	0	10	102	0	0
Warvet	2	0	0	0	1	7	2	1	244	417	0	0
West Boundary	0	0	0	0	0	0	0	0	23	0	0	0
West Pine Lake	10	0	0	1	0	0	1	0	286	0	0	0
White Pine	1	2	0	0	0	1	2	0	570	0	0	0
Wildcat	5	0	0	0	0	2	0	0	236	0	0	0

Table 16. (Cont'd.).

Sale Name NAME	Bass-wood BAS	Elm ES	Aspen AS	Red Oak RO	White Ash ASH	Black Cherry BC	Paper Birch PBS	Mixed Con MCS	Balsam Fir BFS	Hem-lock HS	Spruce SS	Red & White RWS	Red Pine RPS
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Ada Lake	0	355	59	0	0	0	0	3	0	0	0	0	0
Ada Lookout	0	128	69	0	0	0	0	15	0	0	0	0	0
Allen Creek	0	265	27	0	0	0	0	17	0	0	0	0	0
Angel	0	0	0	0	0	0	0	0	0	0	0	0	0
Apples Way	0	0	0	0	0	0	0	0	0	0	0	0	0
Badger Northern	291	0	369	0	47	0	0	27	0	0	0	0	0
Bear Camp	0	0	0	48	0	0	0	0	0	0	0	0	0
Beaver Flowage	0	689	140	0	0	0	0	0	22	0	0	0	0
Big Bear	0	386	401	0	0	0	0	6	0	0	0	0	0
Big Fish	0	88	0	0	0	0	0	0	0	0	0	0	0
Bitternut	47	501	164	0	11	0	0	0	1	0	0	0	0
Blueberry Marsh	0	743	418	0	0	0	0	23	0	0	0	0	0
Butternut	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Two	0	0	0	0	0	0	0	0	0	0	0	0	0
CCC Pond	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer Browse	0	0	527	0	0	0	0	34	0	0	0	0	0
Elm Sawyer	0	0	236	0	0	0	60	0	0	0	0	0	74
Elvoy Springs	0	0	0	0	0	0	0	0	0	0	0	0	0
Firewood	0	0	0	0	0	0	0	0	0	0	0	0	0
Fourmile Forks	0	0	0	0	0	0	0	0	0	0	0	0	0
Frost Pocket	0	0	812	0	0	0	0	0	0	0	0	0	39
Gander	86	0	108	0	0	0	0	0	0	0	0	0	0
Gaspardo Creek	0	0	0	0	0	0	0	0	0	0	0	0	0
Golf Course	0	0	0	0	0	0	0	0	0	0	0	0	0
Harmony Lake	0	0	0	0	0	0	128	88	0	0	0	0	0
Hemlock Lake	0	0	0	0	0	0	0	0	0	0	0	0	0
Highway 55	0	0	0	0	0	0	0	0	0	0	0	0	0
Horseshoe	0	0	0	0	0	0	0	0	0	0	0	0	0
Howell Lake	0	0	55	0	0	0	0	0	0	0	0	0	0
Indian Camp	0	0	0	0	0	0	0	0	0	0	0	0	0
Island Swamp	0	0	0	0	0	0	0	0	0	0	0	0	0
Kettle	0	0	0	0	0	0	0	0	0	0	84	0	99
Kieper	124	0	0	0	0	0	0	0	0	0	0	0	0
Knapp	0	0	0	0	0	0	0	0	0	0	0	0	0
Landing	0	30	15	0	0	0	0	30	0	0	0	0	0
Matterhorn	0	0	0	0	0	0	0	0	0	0	0	0	0
May Lake	0	0	0	0	0	0	0	0	0	0	0	0	0
McCaslin Bridge	0	0	386	0	0	0	0	8	0	0	0	0	0
McCaslin Springs	0	162	172	0	0	0	0	0	25	21	0	0	0
Military Hill	108	0	482	0	0	0	0	0	0	0	0	0	0
Niemeyer	0	0	0	0	0	0	0	0	0	0	0	0	0
Nine Mile	0	543	88	0	0	0	0	26	0	0	0	0	0
North Brule Springs	0	0	217	0	0	0	0	0	0	0	74	0	0
North Haystack Corners	28	0	227	0	0	27	32	43	0	0	0	0	0
North Twin	35	0	0	0	0	0	0	0	0	0	0	0	0

Table 16. (Cont'd.).

Sale Name NAME	Bass-wood BAS	Elm ES	Aspen AS	Red Oak RO	White Ash ASH	Black Cherry BC	Paper Birch PBS	Mixed Con MCS	Balsam Fir BFS	Hem-lock HS	Spruce SS	Red & White RWS	Red Pine RPS
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Old Cemetery	0	0	0	0	0	0	0	0	0	0	0	0	0
Partridge Hop	0	0	0	0	0	0	0	0	0	0	0	0	0
Pat Shay Shelterwood	0	0	0	0	0	0	0	0	0	0	0	0	0
Patmar	56	0	0	0	0	0	0	0	0	0	0	0	0
Pond - S	0	188	115	0	0	0	0	0	0	0	0	0	0
Porky	52	227	208	0	0	0	0	13	0	0	0	0	0
Potfish	0	0	0	0	0	0	0	0	0	0	0	0	0
Powerline	80	254	90	0	0	0	0	24	0	0	0	0	0
Powerline Road	0	0	0	0	0	0	0	0	0	0	0	0	0
Quartz Lake	0	0	0	0	0	0	0	0	0	0	0	0	0
Rabbit Swamp	0	515	189	0	0	0	0	9	0	0	0	0	0
Sasacat	0	480	98	0	0	0	0	0	7	0	0	0	0
Secret Lake	39	29	291	0	0	0	40	0	0	0	21	60	0
Stateline	0	0	0	0	0	0	0	0	0	0	0	0	0
Tobacco Road	0	570	166	0	0	0	0	0	7	0	0	0	0
Torpee Creek	62	365	391	0	0	0	0	2	0	0	0	0	0
Warvet	0	0	0	0	0	0	0	0	0	0	0	0	0
West Boundary	0	0	32	0	0	0	27	0	0	0	29	0	0
West Pine Lake	0	0	0	0	0	0	0	0	0	0	0	0	0
White Pine	0	0	0	0	0	0	0	0	0	0	0	0	0
Wildcat	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 16. (Cont'd.).

Sale Name NAME	White Pine WPS	Pine PS	Mixed Hdws MHP	Aspen AP	Elm EP	Paper Birch PBP	Mixed Con. MCP	Balsam Fir BFP	Spruce SP	Hem-lock HP	Red Pine RPP	Bass-wood BAP	Tama-rack TP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Ada Lake	0	0	963	63	0	0	2	0	0	0	0	0	0
Ada Lookout	0	0	404	94	0	0	35	0	0	0	0	0	0
Allen Creek	0	0	549	42	0	0	20	0	0	0	0	0	0
Angel	0	12	892	360	0	0	0	58	0	0	0	0	0
Apples Way	0	49	2030	1811	0	0	0	130	0	0	0	0	0
Badger Northern	0	0	1170	379	0	98	144	426	0	0	0	0	0
Bear Camp	0	0	1145	106	0	0	0	0	0	0	0	0	0
Beaver Flowage	0	0	1225	73	0	0	0	28	0	0	0	0	0
Big Bear	0	0	922	299	0	0	8	0	0	0	0	0	0
Big Fish	0	0	1257	37	0	0	154	0	0	0	0	0	0
Bitternut	0	0	1385	153	0	0	0	0	0	0	0	0	0
Blueberry Marsh	0	0	2165	339	0	0	24	0	0	0	0	0	0
Butternut	0	0	1365	364	0	0	0	242	0	0	0	0	0
Camp Two	0	0	1335	99	0	0	0	7	0	0	0	0	0
CCC Pond	0	0	169	68	0	0	0	0	0	0	0	0	0
Deer Browse	0	0	1438	625	0	0	94	0	0	0	0	0	0
Elm Sawyer	33	0	995	215	499	34	111	168	60	0	243	0	0
Elvoy Springs	0	182	1162	726	0	0	0	63	0	0	0	0	0
Firewood	0	0	108	0	0	0	0	0	0	0	0	0	0
Fourmile Forks	0	203	2000	750	0	0	486	0	0	0	0	0	0
Frost Pocket	0	0	2716	857	0	0	0	0	0	0	230	0	0
Gander	0	0	298	77	0	0	0	8	0	0	0	0	0
Gaspardo Creek	0	0	748	265	0	0	0	49	87	0	0	0	0
Golf Course	0	35	1156	1083	0	0	0	100	0	0	0	0	0
Harmony Lake	0	0	1415	69	0	0	371	380	0	0	0	0	0
Hemlock Lake	0	0	456	318	0	0	0	0	0	0	0	0	0
Highway 55	0	0	1433	897	0	0	0	27	29	0	0	0	0
Horseshoe	0	0	241	0	0	0	24	0	0	0	0	0	0
Howell Lake	0	0	151	46	0	0	0	43	0	0	0	0	0
Indian Camp	0	0	2179	143	0	0	231	0	0	0	0	0	0
Island Swamp	0	0	1297	737	0	0	0	36	126	0	0	0	0
Kettle	0	0	897	522	0	0	144	104	0	0	0	0	0
Kieper	0	0	344	182	0	0	154	0	0	0	0	0	0
Knapp	0	164	703	216	0	0	0	101	0	0	0	0	0
Landing	0	0	82	52	0	0	56	0	0	0	0	0	0
Matterhorn	0	0	832	312	0	0	0	48	0	0	0	0	0
May Lake	0	0	129	79	0	0	92	0	0	0	0	0	0
McCaslin Bridge	0	0	1353	563	0	0	20	0	0	0	0	0	0
McCaslin Springs	0	0	725	247	0	0	0	79	0	17	0	0	0
Military Hill	0	0	673	193	0	0	0	0	158	0	95	0	0
Niemeyer	0	0	115	0	0	0	8	0	0	0	0	0	0
Nine Mile	0	0	1013	135	0	0	107	0	0	0	0	0	0
North Brule Springs	45	0	745	114	0	0	53	285	0	125	0	0	0
North Haystack Corners	0	0	646	227	0	0	0	103	39	0	0	0	0
North Twin	0	0	929	355	0	0	137	119	0	0	0	0	0

Table 16. (Cont'd.).

Sale Name NAME	White Pine WPS	Pine PS	Mixed Hdws MHP	Aspen AP	Elm EP	Paper Birch PBP	Mixed Con. MCP	Balsam Fir BFP	Spruce SP	Hem-lock HP	Red Pine RPP	Bass-wood BAP	Tama-rack TP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Old Cemetery	0	0	1151	92	0	0	0	0	0	0	0	0	0
Partridge Hop	0	0	953	315	0	0	78	0	0	0	0	0	0
Pat Shay Shelterwood	0	0	31	3	0	0	8	0	0	0	0	0	0
Patmar	0	0	320	17	0	0	40	0	0	0	0	12	0
Pond - S	0	0	218	131	0	0	0	17	0	0	0	0	0
Porky	0	0	315	251	0	0	25	42	0	0	0	0	0
Potfish	0	0	991	153	0	0	0	39	0	0	0	0	0
Powerline	0	0	491	222	0	0	27	33	0	0	0	0	0
Powerline Road	0	86	188	0	0	0	0	0	0	0	0	0	0
Quartz Lake	0	0	2326	523	0	0	162	0	0	0	0	0	0
Rabbit Swamp	0	0	1153	151	0	0	0	0	0	0	0	0	99
Sasacat	0	0	1313	65	0	0	0	10	0	0	0	0	0
Secret Lake	0	0	634	185	0	0	0	202	58	0	153	0	0
Stateline	0	0	1000	357	0	0	0	84	94	0	0	0	0
Tobacco Road	0	0	1363	134	0	0	0	8	0	0	0	0	0
Torpee Creek	0	0	218	447	575	0	75	0	0	0	0	0	0
Warvet	0	21	1827	361	0	0	0	0	0	0	0	0	0
West Boundary	58	0	212	27	0	0	53	0	0	0	0	0	0
West Pine Lake	0	3	924	761	0	0	0	74	0	0	0	0	0
White Pine	0	1391	1217	475	0	0	169	0	0	0	0	0	0
Wildcat	0	9	1012	412	0	0	0	0	0	0	0	0	0

Table 16. (Cont'd.).

Sale Name NAME	Jack Pine JPP	Pine PP
	Mbf	Mbf
Ada Lake	0	0
Ada Lookout	0	0
Allen Creek	0	0
Angel	0	33
Apples Way	0	44
Badger Northern	0	0
Bear Camp	0	0
Beaver Flowage	0	0
Big Bear	0	0
Big Fish	0	0
Bitternut	0	0
Blueberry Marsh	0	0
Butternut	0	0
Camp Two	0	0
CCC Pond	0	40
Deer Browse	0	0
Elm Sawyer	0	0
Elvoy Springs	0	342
Firewood	0	0
Fourmile Forks	0	121
Frost Pocket	0	0
Gander	0	0
Gaspardo Creek	0	0
Golf Course	0	0
Harmony Lake	0	0
Hemlock Lake	0	0
Highway 55	0	0
Horseshoe	0	0
Howell Lake	0	0
Indian Camp	0	0
Island Swamp	0	0
Kettle	0	0
Kieper	0	0
Knapp	0	177
Landing	0	0
Matterhorn	0	0
May Lake	0	0
McCaslin Bridge	0	0
McCaslin Springs	0	0
Military Hill	0	0
Niemeyer	0	0
Nine Mile	0	0
North Brule Springs	0	0
North Haystack Corners	0	0
North Twin	0	0

Table 16. (Cont'd.).

Sale Name NAME	Jack Pine JPP	Pine PP
	Mbf	Mbf
Old Cemetery	0	0
Partridge Hop	0	0
Pat Shay Shelterwood	0	0
Patmar	0	0
Pond - S	0	0
Porky	0	0
Potfish	0	0
Powerline	0	0
Powerline Road	0	50
Quartz Lake	0	0
Rabbit Swamp	0	0
Sasacat	0	0
Secret Lake	0	0
Stateline	392	0
Tobacco Road	0	0
Torpee Creek	0	0
Warvet	0	182
West Boundary	0	0
West Pine Lake	0	33
White Pine	0	0
Wildcat	0	285

Table 17. Nicolet National Forest variable means and standard deviations.

Variable	Mean	Standard Deviation
MONTHS	51.3	15.6
ACRE	490.7	275.5
PU	13.3	7.7
BIDS	2.8	1.7
ADVER	$17.31	$8.76
STUMPAGE	$24.99	$13.15
OVERBID	$7.67	$8.05
VALUE	$45,037	$35,887
POBVAL	$86.13	$10.45
HAUL	76.7	24.7
SAWH	15.5	6.3
PULPH	99.9	29.5
SPEC$	$6,246	$8,576
SPEC	$2.86	$3.89
TEMP$	$507	$1,084
TEMP	$0.25	$0.46
TEMPM	0.5	1.0
VOL	1902.6	1124.1
AVGVOL	4.0	1.5
EVOL	518.8	632.7
UNVOL	1317.3	785.8
CC	371.2	460.8
SHELT	89.9	299.8
THIN	275.5	597.7
IMP	561.5	716.2
SALV	35.1	126.3
SELECT	360.0	550.0
ROAD	11.8	23.9
UNMIX	83.2	259.1
EMIX	16.8	59.8
MIX	70.2	169.0
OR	29.6	93.9
%EVOL	23.9%	24.1%
%UNVOL	73.6%	24.4%
%CC	17.2%	18.5%
%SHELT	3.3%	9.0%
%THIN	13.2%	25.2%
%IMP	27.0%	34.8%
%SALV	2.8%	10.8%
%SELECT	26.3%	36.0%
%ROAD	0.5%	1.0%
%UNMIX	4.1%	10.7%
%EMIX	0.6%	2.0%
%MIX	2.8%	6.1%
%OR	2.3%	9.9%

Variable	Mean	Standard Deviation
#CC	2.09	2.23
#SHELT	0.52	1.37
#THIN	1.83	3.47
#IMP	3.58	4.81
#SELECT	3.02	4.32
#SALV	0.26	0.93
#ROAD	0.59	1.14
#EMIX	0.09	0.29
#UNMIX	0.59	1.42
#MIX	0.38	0.74
#OR	0.21	0.54
MHS	128.8	149.8
SMS	108.5	192.4
RMS	0.2	1.4
YBS	4.0	14.2
BAS	15.3	43.9
ES	98.8	193.4
AS	99.3	165.4
RO	0.7	5.9
ASH	0.9	5.9
BC	0.4	3.3
PBS	4.3	18.4
MCS	5.6	14.1
BFS	0.9	4.2
HS	0.3	2.6
SS	3.2	14.2
RWS	0.9	7.4
RPS	3.2	15.7
WPS	2.1	9.8
PS	32.7	174.4
MHP	936.4	606.8
AP	293.5	313.4
BP	16.3	93.0
PBP	2.0	12.7
MCP	47.1	88.6
BFP	47.1	87.8
SP	9.8	30.3
HP	2.2	15.5
RPP	10.9	45.8
BAP	0.2	1.5
TP	1.5	12.2
JPP	5.9	48.3
PP	19.8	63.1

Table 18. Values of Ottawa National Forest variables.

Sale Name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	Total Acres ACRE	SBA Class SBA	# of PU's PU	# of Bids BIDS
Admin	21067	7	6	27-Dec-84	30-Jun-87	30.5	121	N	4	1
Adrian Creek	22362	7	4	11-Mar-87	30-Sep-92	67.7	488	S	12	4
Aldridge Creek	21166	7	1	14-Feb-85	30-Jun-88	41.1	298	S	9	2
Augustine	2003	7	2	11-Aug-83	30-Jun-86	35.1	245	N	7	1
Basswood Ridge	22859	7	3	11-Dec-87	01-Nov-92	59.6	464	N	11	1
Big King	21976	7	1	30-Jun-86	30-Sep-90	51.8	288	S	9	1
Birch	20333	7	3	26-Jan-84	30-Sep-87	44.8	144	N	4	1
Bonifas Creek	1981	7	6	16-Feb-83	30-Jun-87	53.2	405	S	5	2
Broken Bridge	22818	7	3	16-Nov-87	30-Sep-92	59.3	643	L	20	2
Buck	1919	7	5	02-Jun-82	30-Jun-86	49.6	232	S	6	1
Bullseye	21539	7	3	12-Aug-85	30-Sep-88	38.2	279	N	9	2
Bullwinkle	22040	7	3	18-Aug-86	30-Jun-89	34.9	201	S	4	1
Canyon Falls	2009	7	2	19-Sep-83	30-Jun-87	46.0	243	S	6	4
China Road	1982	7	5	07-Mar-83	30-Jun-88	64.7	226	L	8	1
Chipmunk	21505	7	5	05-Aug-85	30-Jun-87	23.1	57	N	2	3
Clear Lake	22537	7	4	12-May-87	30-Sep-90	41.2	307	N	7	7
Compartment 85	1989	7	2	21-Mar-83	30-Sep-84	18.6	64	N	2	3
Cookout	22313	7	1	13-Feb-87	30-Jun-92	65.5	245	S	9	2
Coontail Camp	22933	7	4	16-Feb-88	30-Sep-91	44.1	273	S	6	7
Copps Tower	21638	7	2	19-Sep-85	30-Jun-90	58.2	563	N	17	1
County 527	23402	7	2	23-Nov-88	30-Jun-91	31.6	117	N	4	4
Coupe	1883	7	3	14-Dec-81	30-Jun-83	18.8	216	L	2	1
Curry Lake	21190	7	3	15-Mar-85	30-Sep-88	43.2	281	L	11	2
Deer Fly	22552	7	6	23-Jun-87	30-Sep-91	52.0	384	S	14	2
Defiance Creek	22214	7	3	20-Nov-86	30-Jun-91	56.1	388	S	11	1
Divide	22560	7	6	23-Jun-87	30-Sep-92	64.2	732	S	15	2
Eagle Lake	21729	7	4	02-Dec-85	30-Sep-89	46.6	448	S	10	5
East Dolph	23642	7	4	09-Jun-89	30-Sep-92	40.3	183	N	6	3
East End	21315	7	2	28-Mar-85	30-Jun-90	64.0	764	S	19	2
East Irish	1900	7	4	22-Mar-82	30-Jun-88	76.4	891	L	14	7
East King - S	20739	7	1	17-Jul-84	30-Jun-86	23.8	38	N	1	1
East Perch	23246	7	4	15-Sep-88	30-Jun-92	46.1	264	S	5	8
East Prickett	22594	7	5	29-Jun-87	30-Sep-91	51.8	457	L	13	6
Eastern Divide	23154	7	3	09-Aug-88	01-Nov-91	39.3	220	N	3	2
Edna Creek II	20986	7	3	13-Nov-84	30-Jun-87	32.0	143	N	7	1
Elbow	23279	7	5	23-Sep-88	25-Sep-92	48.8	273	S	7	4
Elmwood North	23519	7	3	21-Feb-89	01-Nov-93	57.1	572	N	9	2
Farce Creek	22776	7	5	28-Sep-87	30-Jun-93	70.1	393	S	11	2
Finnegan	22727	7	2	15-Sep-87	30-Jun-92	58.3	775	S	20	5
Fisher Hardwood	1956	7	2	19-Nov-82	30-Jun-84	19.6	43	S	1	1
Fisher Lake	23113	7	3	14-Jun-88	01-Nov-92	53.4	363	N	12	1
Fourth Lake	22289	7	3	20-Jan-87	30-Jun-90	41.9	237	N	6	4
Gillis	23410	7	2	29-Nov-88	30-Jun-93	55.8	617	S	22	1
Green Beanie	23253	7	6	15-Sep-88	30-Sep-94	73.5	1010	N	13	4
Grizzly Bear	1986	7	5	14-Mar-83	30-Jun-89	76.7	1056	S	20	4

Table 18. (Cont'd.)

Sale Name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	Total Acres ACRE	SBA Class SBA	# of PU's PU	# of Bids BIDS
Hartley Landing	20499	7	2	19-Mar-84	30-Jun-87	39.9	288	S	8	2
Hartley Landing Resale	23188	7	2	31-Aug-88	31-Aug-91	36.5	163	N	5	1
Hayfield	2008	7	3	09-Sep-83	30-Jun-86	34.2	270	N	9	3
Haystack	20580	7	4	27-Mar-84	30-Jun-86	27.5	120	N	2	3
Hemlock Lake	23436	7	6	16-Dec-88	30-Jun-93	55.2	323	S	7	1
Hideout II	21687	7	3	13-Nov-85	30-Jun-88	32.0	438	S	10	1
Hilltop 1982	1932	7	6	06-Aug-82	30-Jun-85	35.3	180	S	4	5
Hilltop (Clisch)	22792	7	4	12-Nov-87	30-Sep-90	35.1	89	N	3	4
Hilltop (Corey)	1000	7	4	26-Aug-87	30-Sep-90	37.7	89	N	3	5
Honeysuckle	1992	7	2	29-Mar-83	30-Sep-85	30.5	135	S	3	5
Jacknife	22610	7	6	29-Jun-87	30-Jun-92	60.9	509	S	9	3
Jackson	20903	7	2	24-Sep-84	30-Jun-89	58.0	690	N	12	3
James Lake	1990	7	3	28-Mar-83	30-Jun-86	39.7	518	L	11	5
Jumbo East	21260	7	4	19-Sep-85	30-Sep-91	73.4	502	N	20	2
Kallio	23584	7	4	23-May-89	30-Jun-93	50.0	298	N	10	1
Kenton Heights	22404	7	4	25-Mar-87	30-Jun-91	51.9	206	S	6	3
Ketchum Lake	23378	7	3	14-Nov-88	01-Aug-92	45.2	540	S	9	1
Kits Creek	21208	7	5	15-Mar-85	30-Jun-91	76.6	382	S	14	1
Knucklehead Salvage - S	1946	7	6	30-Sep-82	30-Jun-84	21.3	131	S	4	3
Lambert Creek	20879	7	3	12-Sep-84	30-Jun-87	34.0	412	N	7	1
Little Giant	22909	7	2	06-Jan-88	30-Jun-92	54.6	588	S	13	1
Little Giant Hardwoods	20259	7	2	19-Dec-83	30-Jun-87	43.0	189	N	2	1
Lone Wolf	23535	7	5	29-Mar-89	20-Jun-93	51.5	451	L	8	7
Lower Dam	1987	7	4	18-Mar-83	30-Sep-87	55.2	430	S	14	7
Lucky Shot	23220	7	4	08-Sep-88	30-Jun-92	46.4	282	S	6	6
L.A.R.	1997	7	2	23-May-83	30-Jun-85	25.6	299	S	7	2
Madelyn Lake	21257	7	3	20-Mar-85	30-Sep-87	30.8	373	N	7	1
Marsh Creek South	20853	7	6	31-Aug-84	30-Sep-88	49.7	508	N	8	1
McRae Creek	1940	7	3	20-Sep-82	30-Jun-85	33.8	400	S	10	3
Merry Pete	22958	7	1	29-Feb-88	30-Sep-91	43.6	291	N	8	5
Mink Lake	20614	7	2	29-Mar-84	30-Jun-89	64.0	393	S	13	3
Mitigwaki Creek	22586	7	3	29-Jun-87	30-Sep-90	39.6	234	N	9	3
Montombo	1941	7	2	21-Sep-82	30-Jun-88	70.3	808	S	12	3
North Grade	20713	7	5	26-Jun-84	30-Jun-88	48.8	246	L	9	5
North McAllister	1879	7	3	08-Dec-81	30-Jun-84	31.2	513	L	5	2
Old Farm	22974	7	4	11-Mar-88	30-Sep-92	55.5	337	N	7	1
Osprey	23105	7	2	13-Jun-88	30-Jun-92	49.3	717	S	13	1
Otter Lake	22628	7	3	30-Jun-87	30-Jun-92	60.9	704	L	18	3
Paint Springs	23071	7	6	31-May-88	30-Jun-92	49.7	495	S	12	2
Paw Lake	20937	7	4	05-Oct-84	30-Sep-90	72.9	583	N	21	1
Peckerwood	23501	7	4	27-Feb-89	30-Jun-95	77.1	922	L	19	6
Pelton	21752	7	2	06-Jan-85	30-Jun-89	54.5	494	N	15	1
Pelton West	21745	7	2	02-Jan-86	30-Jun-88	30.3	174	L	5	3
Pendleton Creek	23204	7	3	01-Sep-88	01-Aug-92	47.7	270	N	7	4
Perch Corner	22941	7	4	23-Feb-88	30-Sep-93	68.2	421	L	9	4

Table 18. (Cont'd.)

Sale Name NAME	Contract Number	Forest FOR	District DIST	Bid Date	Termination Date	Months MONTHS	Total Acres ACRE	SBA Class SBA	# of PU's PU	# of Bids BIDS
Perch Lake	1944	7	6	29-Sep-82	30-Sep-87	60.9	774	S	13	1
Perch Tower	2010	7	3	20-Sep-83	30-Jun-88	58.2	496	S	13	2
Pickle Pond	23618	7	6	01-Jun-89	30-Jun-93	49.7	156	N	5	7
Picnic Table	1914	7	1	26-May-82	30-Jun-83	13.3	54	N	1	2
Pine Creek	21968	7	5	24-Jun-86	30-Jun-90	48.9	387	L	9	1
Poncho	22305	7	2	02-Feb-87	30-Jun-91	53.6	855	N	24	2
Ponozzo Lake - S	1949	7	3	04-Oct-82	30-Jun-84	21.2	44	N	1	3
Pothole	23097	7	4	09-Jun-88	30-Sep-93	64.6	389	L	9	2
River Bend	1963	7	4	15-Dec-82	30-Sep-84	21.8	82	N	2	2
Rookery	22131	7	4	17-Sep-86	30-Jun-91	58.2	302	L	5	2
R.J.	1897	7	5	08-Mar-82	30-Jun-86	52.5	474	N	12	1
R.J. #2	22107	7	5	12-Sep-86	30-Jun-90	46.2	255	S	6	1
Santa Fe	20945	7	2	18-Oct-84	30-Jun-89	57.2	553	N	15	2
Section 18	21810	7	1	19-Feb-86	30-Sep-91	68.3	432	L	11	2
Section 28	1891	7	3	08-Feb-82	30-Jun-84	29.1	462	S	10	1
Section 28 - II	21430	7	3	14-Jun-85	30-Jun-87	24.9	106	N	2	1
Sidnaw Branch	22412	7	4	26-Mar-87	30-Sep-93	79.3	557	L	9	6
Silver Bullet	22321	7	6	17-Feb-87	30-Sep-92	68.4	782	N	26	1
Silver Creek	22396	7	4	24-Mar-87	30-Jun-91	52.0	261	S	8	2
Silver Lake	1888	7	3	12-Jan-82	30-Jun-84	30.0	162	S	4	1
Ski Pole	22248	7	6	23-Dec-86	30-Sep-91	58.1	192	N	5	1
Skoglund Creek	22271	7	4	15-Jan-87	30-Jun-91	54.2	406	N	11	2
Slapjack	23329	7	5	28-Sep-88	20-Sep-92	48.4	107	S	6	2
South Dinky	22255	7	2	22-Dec-86	30-Jun-90	42.9	248	S	4	1
Sparkle III	20283	7	2	04-Jan-84	30-Jun-89	66.8	413	S	10	5
Sparkle IV	23550	7	2	27-Apr-89	30-Jun-92	38.7	335	S	8	1
Stambaugh Pit	1950	7	3	04-Oct-82	30-Jun-84	21.2	70	N	1	3
Storm	22347	7	4	05-Mar-87	30-Sep-90	43.5	309	L	9	6
Sudden Lake	20416	7	5	20-Apr-84	30-Jun-88	51.1	321	L	15	1
Sullivan Creek	22990	7	5	11-Apr-88	30-Jun-94	75.7	846	S	15	8
Tenderfoot East	23592	7	2	25-May-89	30-Jun-92	37.7	102	N	5	1
Tenderfoot West	23394	7	2	17-Nov-88	30-Jun-91	31.8	137	N	6	3
Tote Creek	22370	7	4	12-Mar-87	30-Jun-91	52.4	292	L	7	7
Tradition Creek	23162	7	5	25-Aug-88	31-Aug-92	48.9	415	L	10	3
U.S. 2	1933	7	3	16-Aug-82	30-Jun-85	35.0	400	S	10	1
Webstur	23311	7	5	27-Sep-88	30-Jun-94	70.1	696	S	20	3
Wellington	21992	7	2	30-Jun-86	30-Jun-90	48.7	416	S	11	1
Whitetail	23527	7	6	20-Mar-89	30-Jun-91	27.7	135	S	2	4
Wildcat	1991	7	3	29-Mar-83	30-Sep-85	30.5	196	S	6	4
Wolf	1994	7	4	31-Mar-83	30-Sep-89	79.2	879	S	15	5

Table 18. (Cont'd.)

Sale Name NAME	Adv. Rate ADVER	Stat Hi bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982= 100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPEC$
	$/Mbf	$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$
Admin	10.32	10.41	0.09	4137.38	96.34	105.3	11.0	11	11	0
Adrian Creek	12.01	24.70	12.69	32610.77	102.69	112.1	11.0	11	11	4032
Aldridge Creek	9.15	9.71	0.56	8670.59	105.22	106.0	17.7	29	12	11090
Augustine	7.36	11.63	4.27	6438.45	110.67	100.2	17.5	27	12	9608
Basswood Ridge	9.19	10.27	1.08	18554.00	84.08	115.4	8.5	13	8	996
Big King	10.19	12.24	2.05	11993.63	97.34	109.5	14.0	14	14	0
Birch	3.79	3.79	0.00	2318.48	99.25	101.9	10.4	18	10	0
Bonifas Creek	3.87	6.94	3.07	6788.40	92.35	97.9	5.0	5	5	14811
Broken Bridge	13.70	17.05	3.35	24537.19	91.34	115.4	16.9	34	12	4800
Buck	56.67	59.67	3.00	42988.24	101.12	97.0	17.0	20	12	0
Bullseye	17.56	35.51	17.95	20482.82	97.16	108.0	9.3	21	5	0
Bullwinkle	12.06	12.06	0.00	9323.39	93.42	109.7	12.0	12	12	0
Canyon Falls	19.20	24.23	5.03	13565.04	112.68	100.7	14.8	23	9	8233
China Road	19.37	19.85	0.48	18001.85	89.46	97.9	16.2	20	14	0
Chipmunk	33.66	40.84	7.18	5230.04	107.07	108.0	12.7	22	6	0
Clear Lake	12.58	20.07	7.49	19935.92	90.35	113.1	15.0	15	15	0
Compartment 85	21.40	26.86	5.46	3824.32	101.38	97.9	13.8	23	8	0
Cookout	20.45	25.87	5.42	30521.36	101.35	111.6	24.7	24	25	2630
Coontail Camp	11.85	21.04	9.19	17872.79	96.93	116.0	5.0	5	5	2687
Copps Tower	2.40	2.48	0.08	4226.77	89.16	108.3	8.9	20	7	13607
County 527	18.06	28.37	10.31	10299.02	94.78	120.3	14.4	29	12	0
Coupe	47.41	54.38	6.97	32233.08	110.84	94.0	14.8	21	6	0
Curry Lake	17.86	19.76	1.90	10328.76	112.97	106.4	12.0	12	12	7607
Deer Fly	18.10	33.13	15.03	47356.22	96.22	113.5	6.0	6	6	1119
Defiance Creek	12.96	20.03	7.07	19585.75	89.72	110.4	10.6	12	10	746
Divide	13.15	15.58	2.43	42059.93	96.97	113.5	9.0	9	9	0
Eagle Lake	18.12	29.12	11.00	37744.71	104.47	109.3	11.0	11	11	0
East Dolph	9.41	10.68	1.27	11616.60	97.92	124.1	7.0	7	7	2577
East End	15.83	17.39	1.56	36489.56	96.68	106.4	15.0	15	15	17810
East Irish	52.97	76.85	23.88	259089.96	112.32	94.5	8.0	8	8	16382
East King - S	57.03	58.78	1.75	4000.01	116.11	104.1	14.0	14	14	0
East Perch	68.40	112.11	43.71	101958.00	122.40	119.8	15.0	15	15	0
East Prickett	18.16	35.38	17.22	59058.99	98.99	113.5	11.6	11	12	10914
Eastern Divide	9.38	12.64	3.26	8606.00	89.82	119.0	18.0	18	18	1360
Edna Creek II	9.11	10.12	1.01	3229.17	101.63	105.3	14.7	17	14	0
Elbow	23.44	41.04	17.60	28133.48	106.45	119.8	45.5	29	54	9958
Elmwood North	22.74	33.18	10.44	65672.30	97.60	121.6	12.5	15	12	0
Farce Creek	18.40	31.24	12.84	39516.33	101.40	115.0	14.1	12	16	11183
Finnegan	19.36	34.48	15.12	109886.00	93.83	115.0	19.1	9	24	15996
Fisher Hardwood	19.17	19.25	0.08	2029.24	86.55	98.0	10.5	15	8	0
Fisher Lake	2.55	3.93	1.38	5501.00	87.25	118.0	12.0	12	12	5951
Fourth Lake	18.77	24.08	5.31	22165.50	98.71	111.2	12.7	18	10	0
Gillis	21.46	31.80	10.34	70448.60	95.65	120.3	7.6	22	5	3412
Green Beanie	25.72	41.80	16.08	117518.70	98.93	119.8	4.0	4	4	27100
Grizzly Bear	29.32	34.68	5.36	98157.49	100.75	97.9	12.9	14	12	11121

Table 18. (Cont'd.)

Sale Name NAME	Adv. Rate ADVER	Stat Hi bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982= 100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPEC$
	$/Mbf	$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$
Hartley Landing	12.38	21.37	8.99	12772.10	105.72	102.6	10.6	12	10	8349
Hartley Landing Resale	16.94	27.74	10.80	10110.00	97.56	119.0	10.4	12	10	0
Hayfield	34.06	40.65	6.59	17302.50	117.97	100.7	11.5	12	11	3337
Haystack	25.93	29.60	3.67	12090.45	103.32	102.6	7.0	7	7	0
Hemlock Lake	24.58	24.66	0.08	28637.80	94.69	120.5	12.0	12	12	6218
Hideout II	14.37	20.94	6.57	19027.38	98.41	109.0	17.0	19	16	2736
Hilltop 1982	78.01	87.82	9.81	36147.61	115.75	97.7	7.0	7	7	0
Hilltop (Clisch)	6.80	18.00	11.20	6786.80	98.72	115.4	11.0	11	11	0
Hilltop (Corey)	6.80	20.99	14.19	7914.00	95.38	114.4	11.0	11	11	0
Honeysuckle	23.24	29.39	6.15	7773.04	98.97	97.9	13.5	24	8	0
Jacknife	14.76	21.91	7.15	40503.75	88.35	113.5	50.0	50	50	0
Jackson	19.18	29.03	9.85	58251.36	102.50	105.0	13.0	13	13	20466
James Lake	36.66	46.51	9.85	38270.81	104.55	97.9	10.0	17	3	3559
Jumbo East	3.85	4.46	0.61	10735.16	106.32	108.3	11.0	11	11	26232
Kallio	17.17	22.46	5.29	47909.62	103.21	123.8	9.0	9	9	9501
Kenton Heights	11.59	13.63	2.04	11751.40	96.30	112.1	5.9	6	6	0
Ketchum Lake	18.35	18.35	0.00	26941.92	93.26	120.3	17.9	18	18	1140
Kits Creek	19.32	29.84	10.52	27917.86	113.16	106.4	19.0	19	19	10994
Knucklehead Salvage - S	29.77	38.29	8.52	12070.04	98.96	97.9	6.0	6	6	0
Lambert Creek	20.28	26.75	6.47	17446.00	97.24	105.0	10.6	10	11	2357
Little Giant	9.35	9.49	0.14	20733.69	90.70	115.7	8.4	21	7	3102
Little Giant Hardwoods	11.51	11.51	0.00	4443.14	103.65	101.3	10.5	21	6	0
Lone Wolf	69.29	103.18	33.89	116956.56	127.32	122.3	30.6	29	32	1700
Lower Dam	27.37	44.94	17.57	54230.04	104.80	97.9	13.4	7	19	12224
Lucky Shot	39.97	66.45	26.48	53856.00	107.24	119.8	7.0	7	7	0
L.A.R.	12.47	14.19	1.72	9977.03	93.39	99.2	11.2	20	6	4561
Madelyn Lake	14.91	17.05	2.14	10016.30	102.59	106.4	16.9	19	16	0
Marsh Creek South	13.88	13.97	0.09	14858.27	94.06	104.5	17.0	17	17	0
McRae Creek	30.31	37.63	7.32	22545.00	100.69	97.9	8.0	11	4	3531
Merry Pete	18.82	40.18	21.36	46749.77	96.45	116.0	17.7	14	19	6492
Mink Lake	13.73	16.29	2.56	18340.11	102.06	102.6	11.0	16	9	11459
Mitigwaki Creek	15.54	22.68	7.14	26057.08	90.99	113.5	17.0	17	17	1071
Montombo	14.44	22.05	7.61	63538.01	99.27	97.9	7.0	7	7	46711
North Grade	30.49	44.94	14.45	31366.00	118.82	103.7	19.4	23	16	3673
North McAllister	53.99	61.82	7.83	83369.68	115.36	94.0	15.6	21	6	0
Old Farm	11.56	17.44	5.88	21840.70	90.75	116.5	13.0	13	13	0
Osprey	12.41	20.12	7.71	46526.00	91.80	118.0	14.1	21	13	9988
Otter Lake	16.53	25.09	8.56	63312.70	91.51	113.5	13.5	15	13	1504
Paint Springs	3.87	7.07	3.20	10236.80	88.82	117.5	10.0	10	10	10247
Paw Lake	4.69	4.81	0.12	12994.86	104.35	105.3	15.0	15	15	23919
Peckerwood	48.99	82.78	33.79	302697.20	116.22	121.6	8.0	8	8	8085
Pelton	9.93	15.62	5.69	20296.81	94.57	105.5	9.2	23	6	579
Pelton West	12.88	20.59	7.71	8333.74	95.90	109.6	9.0	21	4	1889
Pendleton Creek	11.74	18.67	6.93	17390.34	95.04	119.8	12.0	12	12	6718
Perch Corner	19.35	32.71	13.36	43312.55	95.69	116.0	5.0	5	5	2359

Table 18. (Cont'd.)

Sale Name NAME	Adv. Rate ADVER	Stat Hi bid STUMPAGE	Overbid OVERBID	Total Value VALUE	FOB Value FOBVAL	CPI (1982=100)	Total Haul HAUL	Saw Haul SAWH	Pulp Haul PULPH	Spec Road SPEC$
	$/Mbf	$/Mbf	$/Mbf	$	$/Mbf		Miles	Miles	Miles	$
Perch Lake	19.76	20.78	1.02	44781.20	102.18	97.9	7.0	7	7	30674
Perch Tower	40.54	55.90	15.36	26289.00	139.45	100.7	15.0	15	15	15592
Pickle Pond	14.71	20.66	5.95	20956.95	98.87	124.1	16.0	16	16	3140
Picnic Table	31.03	35.56	4.53	3570.35	96.00	95.8	13.6	24	7	0
Pine Creek	22.19	34.52	12.33	37141.70	107.57	109.5	14.1	10	17	0
Poncho	8.42	11.11	2.69	38041.42	90.32	111.6	14.3	27	10	11157
Ponozzo Lake - S	31.27	36.59	5.32	4319.25	95.66	98.2	12.3	13	11	0
Pothole	12.68	17.67	4.99	30458.26	93.02	118.0	15.0	15	15	2950
River Bend	21.38	22.69	1.31	6002.09	126.33	97.6	13.0	7	15	0
Rookery	16.84	23.58	6.74	35364.65	109.91	110.2	13.0	13	13	4607
R.J.	28.73	29.42	0.69	40534.36	100.63	94.5	14.0	15	13	1380
R.J. #2	11.58	13.10	1.52	8753.00	97.09	110.2	13.2	16	12	0
Santa Fe	15.50	16.29	0.79	30792.45	96.32	105.3	17.9	24	16	10825
Section 18	16.17	42.46	26.29	56878.50	113.05	109.3	22.2	20	24	0
Section 28	48.21	53.41	5.20	41497.60	106.41	94.6	13.2	14	12	4555
Section 28 - II	38.32	38.77	0.45	4251.36	110.73	107.6	12.9	14	12	0
Sidnaw Branch	29.45	62.89	33.44	118677.02	113.22	112.1	7.0	7	7	0
Silver Bullet	6.80	10.57	3.77	32552.34	119.51	111.6	6.0	6	6	14106
Silver Creek	13.07	17.21	4.14	23617.80	99.08	112.1	12.0	12	12	1733
Silver Lake	39.30	52.29	12.99	15758.11	105.78	94.3	10.9	14	6	2852
Ski Pole	5.38	5.53	0.15	4444.28	89.61	110.5	10.0	10	10	2793
Skoglund Creek	16.97	20.29	3.32	31360.76	117.95	111.2	15.0	15	15	0
Slapjack	17.05	18.42	1.37	20661.70	93.76	119.8	37.7	21	40	0
South Dinky	10.93	11.31	0.38	7701.17	84.28	110.5	5.3	11	4	0
Sparkle III	16.32	21.08	4.76	34419.08	108.89	101.9	15.2	24	10	28786
Sparkle IV	30.60	30.60	0.00	30941.44	105.18	123.1	9.5	22	7	0
Stambaugh Pit	31.29	32.64	1.35	4860.00	96.00	98.2	10.0	9	11	0
Storm	32.77	52.28	19.51	58396.88	104.81	112.1	10.0	10	10	0
Sudden Lake	5.92	5.92	0.00	5832.74	103.67	103.1	18.0	20	17	14391
Sullivan Creek	40.57	74.98	34.41	223964.74	105.85	117.1	23.4	18	27	6674
Tenderfoot East	18.49	25.82	7.33	11400.25	103.26	123.8	17.0	32	15	0
Tenderfoot West	20.23	29.50	9.27	14337.60	99.90	120.3	11.6	26	8	2596
Tote Creek	38.86	69.45	30.59	71494.76	119.30	112.1	12.0	12	12	0
Tradition Creek	38.42	60.69	22.27	100840.00	109.59	119.0	24.0	24	24	10375
U.S. 2	49.32	50.11	0.79	43010.88	106.12	97.7	12.6	13	12	982
Webstur	31.47	51.57	20.10	106280.75	106.88	119.8	45.8	28	55	29185
Wellington	4.83	7.21	2.38	9134.00	95.76	109.5	12.4	23	9	12291
Whitetail	27.30	34.68	7.38	12658.23	102.98	122.3	6.0	6	6	410
Wildcat	35.87	53.75	17.88	20441.93	113.45	97.9	21.2	25	15	6267
Wolf	31.31	51.21	19.90	197115.71	103.06	97.9	9.0	9	9	0

Table 18. (Cont'd.)

Sale Name NAME	Avg. Spec SPEC	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOLUME	Avg. Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	OR Volume OR	Shelt Volume SHELT	Select Volume SELECT
	$/Mbf	$	$/Mbf	Miles	Mbf	Mbf/Acre	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Admin	0.00	533	1.34	0.5	397	3.28	0	397	0	0	0	0
Adrian Creek	3.05	0	0.00	0.0	1321	2.71	229	941	0	65	137	343
Aldridge Creek	12.42	1580	1.77	1.5	893	3.00	217	255	0	0	0	0
Augustine	17.35	795	1.44	0.9	554	2.26	10	544	0	0	0	0
Basswood Ridge	0.55	200	0.11	0.0	1806	3.89	0	1806	0	0	0	1635
Big King	0.00	2076	2.12	2.1	980	3.40	0	875	0	0	0	275
Birch	0.00	1623	2.65	1.3	612	4.25	612	0	244	0	367	0
Bonifas Creek	15.15	1497	1.53	0.8	978	2.41	317	661	0	0	291	0
Broken Bridge	3.33	420	0.29	0.0	1440	2.24	6	1434	0	0	0	1258
Buck	0.00	1000	1.39	1.0	720	3.11	480	241	70	410	0	0
Bullseye	0.00	506	0.88	1.3	577	2.07	85	492	0	0	85	299
Bullwinkle	0.00	0	0.00	0.0	773	3.85	0	773	0	0	0	774
Canyon Falls	14.70	1160	2.07	0.7	560	2.30	77	483	59	0	0	0
China Road	0.00	560	0.62	0.6	907	4.01	334	513	334	0	0	239
Chipmunk	0.00	185	1.44	0.3	128	2.25	0	128	0	0	0	0
Clear Lake	0.00	620	0.62	0.3	994	3.24	119	875	119	0	0	336
Compartment 85	0.00	135	0.95	0.3	142	2.22	0	142	0	0	0	0
Cookout	2.23	1990	1.69	1.1	1180	4.82	0	1180	0	0	0	0
Coontail Camp	3.16	470	0.55	0.2	850	3.11	171	679	156	0	0	650
Copps Tower	7.99	1903	1.12	1.3	1704	3.03	298	1406	213	0	0	0
County 527	0.00	230	0.63	0.0	363	3.10	137	226	137	0	0	0
Coupe	0.00	325	0.55	0.8	593	2.74	0	593	0	0	0	592
Curry Lake	14.55	333	0.64	0.0	523	1.86	10	513	0	0	0	0
Deer Fly	0.78	1515	1.06	0.6	1430	3.72	1346	84	445	78	826	68
Defiance Creek	0.76	420	0.43	0.0	978	2.52	57	921	57	0	0	724
Divide	0.00	5340	1.98	2.9	2700	3.69	1059	1641	1062	0	0	339
Eagle Lake	0.00	200	0.15	0.0	1296	2.89	0	1296	0	0	0	0
East Dolph	2.37	378	0.35	0.2	1088	5.95	794	294	690	106	0	0
East End	8.49	3095	1.47	2.8	2098	2.75	94	2005	31	0	0	0
East Irish	4.68	2350	0.67	4.5	3502	3.93	13	2391	0	0	0	1383
East King - S	0.00	85	1.25	0.2	68	1.79	0	68	0	0	0	0
East Perch	0.00	0	0.00	0.0	910	3.45	0	910	0	0	0	911
East Prickett	6.54	2096	1.26	0.6	1670	3.65	619	1051	242	185	169	536
Eastern Divide	2.00	0	0.00	0.0	681	3.10	0	681	0	0	0	0
Edna Creek II	0.00	1064	3.33	0.9	319	2.23	29	290	29	0	0	0
Elbow	14.53	0	0.00	0.0	686	2.51	59	627	0	19	0	178
Elmwood North	0.00	300	0.15	0.0	1979	3.46	0	1979	0	0	0	1983
Farce Creek	8.84	968	0.77	0.6	1265	3.22	0	1265	0	0	0	0
Finnegan	5.02	1425	0.45	0.0	3187	4.11	442	2745	389	0	0	0
Fisher Hardwood	0.00	0	0.00	0.0	105	2.45	0	105	0	0	0	105
Fisher Lake	4.25	100	0.07	0.0	1401	3.86	0	1401	0	0	0	1403
Fourth Lake	0.00	200	0.22	0.0	921	3.88	0	921	0	0	0	724
Gillis	1.54	280	0.13	0.0	2216	3.59	335	1881	312	0	0	367
Green Beanie	9.64	822	0.29	0.4	2812	2.78	52	2760	0	0	0	1747
Grizzly Bear	3.93	2080	0.73	3.3	2831	2.68	1413	1417	400	948	27	347

Table 18. (Cont'd.)

Sale Name NAME	Avg. Spec SPEC	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOLUME	Avg. Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	OR Volume OR	Shelt Volume SHELT	Select Volume SELECT
	$/Mbf	$	$/Mbf	Miles	Mbf	Mbf/Acre	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Hartley Landing	13.97	265	0.44	0.2	598	2.07	30	568	30	0	0	78
Hartley Landing Resale	0.00	291	0.80	0.1	365	2.24	0	365	0	0	0	77
Hayfield	7.84	503	1.18	0.1	426	1.58	48	268	48	0	0	267
Haystack	0.00	550	1.35	0.5	408	3.40	408	0	0	0	0	0
Hemlock Lake	5.35	1000	0.86	0.6	1162	3.60	17	1145	0	0	0	0
Hideout II	3.01	1137	1.25	1.0	908	2.07	165	743	159	0	0	432
Hilltop 1982	0.00	180	0.44	0.3	412	2.29	223	188	0	0	223	45
Hilltop (Clisch)	0.00	417	1.11	0.2	377	4.24	0	377	0	0	0	0
Hilltop (Corey)	0.00	417	1.11	0.2	377	4.24	0	377	0	0	0	0
Honeysuckle	0.00	1308	4.95	0.9	264	1.96	0	264	0	0	0	0
Jacknife	0.00	476	0.26	0.3	1849	3.63	735	904	736	0	0	228
Jackson	10.20	1218	0.61	0.9	2007	2.91	173	1834	152	0	0	0
James Lake	4.32	1211	1.47	1.2	823	1.59	24	798	24	0	0	0
Jumbo East	10.92	3430	1.43	1.8	2406	4.79	914	1493	838	0	0	0
Kallio	4.45	840	0.39	0.7	2133	7.16	1393	740	1358	0	0	0
Kenton Heights	0.00	1468	1.70	0.8	862	4.18	297	331	224	0	74	0
Ketchum Lake	0.78	0	0.00	0.0	1469	2.72	38	1431	38	0	0	1433
Kits Creek	11.75	380	0.41	0.4	936	2.45	341	595	208	0	59	123
Knucklehead Salvage - S	0.00	560	1.78	0.7	315	2.41	0	315	0	0	0	0
Lambert Creek	4.53	4069	6.24	4.5	652	1.58	3	649	0	0	0	649
Little Giant	1.42	0	0.00	0.0	2186	3.72	399	1787	399	0	0	341
Little Giant Hardwoods	0.00	1790	4.64	1.5	386	2.04	0	162	0	0	0	0
Lone Wolf	1.50	0	0.00	0.0	1134	2.51	0	1134	0	0	0	0
Lower Dam	10.13	1820	1.51	2.1	1207	2.81	177	845	155	0	0	11
Lucky Shot	0.00	530	0.65	0.0	811	2.87	158	74	0	0	158	0
L.A.R.	6.49	550	0.78	0.5	703	2.35	0	703	0	0	0	77
Madelyn Lake	0.00	2160	3.68	3.6	587	1.57	0	587	0	0	0	588
Marsh Creek South	0.00	2030	1.91	2.1	1063	2.09	46	1017	46	0	0	1018
McRae Creek	5.89	1200	2.00	3.9	599	1.50	47	552	44	0	0	0
Merry Pete	5.58	602	0.52	0.6	1164	4.00	22	854	0	0	0	239
Mink Lake	10.18	1480	1.31	1.4	1126	2.87	377	749	368	0	0	0
Mitigwaki Creek	0.93	105	0.09	0.0	1149	4.91	347	802	347	0	0	804
Montombo	16.21	1200	0.42	2.0	2882	3.57	33	2520	0	0	0	637
North Grade	5.26	1361	1.95	2.5	698	2.84	61	637	61	0	0	0
North McAllister	0.00	816	0.61	1.9	1349	2.63	0	1349	0	0	0	1349
Old Farm	0.00	905	0.72	0.6	1253	3.72	206	1047	206	0	0	0
Osprey	4.32	950	0.41	0.0	2313	3.23	10	2303	0	0	0	0
Otter Lake	0.60	455	0.18	0.0	2524	3.58	15	2509	0	0	0	2514
Paint Springs	7.08	1738	1.20	1.3	1447	2.92	544	752	518	0	0	337
Paw Lake	11.07	2076	0.77	10.6	2704	4.64	1618	925	676	81	782	0
Peckerwood	2.21	0	0.00	0.0	3659	3.97	691	2305	283	39	313	0
Pelton	0.45	1720	1.32	0.9	1300	2.63	52	1247	0	0	52	0
Pelton West	4.67	487	1.20	0.3	405	2.33	1	403	0	0	0	293
Pendleton Creek	7.21	105	0.11	0.0	932	3.45	22	910	0	0	0	911
Perch Corner	2.16	794	0.60	0.3	1324	3.14	9	1316	0	0	0	0

Table 18. (Cont'd.)

Sale Name NAME	Avg. Spec SPEC	Temp Road TEMP$	Avg. Temp TEMP	Temp Miles TEMPM	Total Volume VOLUME	Avg. Volume AVGVOL	Even Volume EVOL	Uneven Volume UNVOL	Clear Volume CC	OR Volume OR	Shelt Volume SHELT	Select Volume SELECT
	$/Mbf	$	$/Mbf	Miles	Mbf	Mbf/Acre	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Perch Lake	14.23	0	0.00	0.0	2155	2.78	48	2108	0	0	0	191
Perch Tower	33.16	2588	5.50	2.8	470	0.95	0	470	0	0	0	0
Pickle Pond	3.10	1424	1.40	0.9	1015	6.50	710	305	711	0	0	0
Picnic Table	0.00	480	4.78	0.3	100	1.86	0	100	0	0	0	0
Pine Creek	0.00	2410	2.24	1.3	1076	2.78	45	1031	45	0	0	0
Poncho	3.26	3689	1.08	2.1	3424	4.00	1398	2027	1345	0	0	0
Ponozzo Lake - S	0.00	0	0.00	0.0	118	2.68	0	118	0	0	0	0
Pothole	1.71	634	0.37	0.3	1724	4.43	475	1250	463	0	0	0
River Bend	0.00	160	0.60	0.2	264	3.23	0	264	0	0	0	0
Rookery	3.02	0	0.00	0.0	1526	5.05	1236	0	0	0	1236	0
R.J.	1.00	1800	1.31	2.8	1378	2.91	569	809	569	0	0	356
R.J. #2	0.00	445	0.67	0.3	668	2.62	430	238	430	0	0	105
Santa Fe	5.73	2746	1.45	2.3	1890	3.42	722	855	586	49	73	40
Section 18	0.00	4159	3.10	3.8	1340	3.10	0	1340	0	0	0	1341
Section 28	5.86	472	0.61	0.9	777	1.68	0	745	0	0	0	746
Section 28 - II	0.00	233	2.12	0.2	110	1.03	0	110	0	0	0	110
Sidnaw Branch	0.00	0	0.00	0.0	1887	3.39	540	850	0	0	541	381
Silver Bullet	4.58	3141	1.02	1.8	3080	3.94	1704	1376	1690	0	0	0
Silver Creek	1.26	300	0.22	0.0	1372	5.26	1122	251	480	618	0	162
Silver Lake	9.46	720	2.39	0.9	301	1.86	0	301	0	0	0	0
Ski Pole	3.48	760	0.95	0.7	803	4.18	434	369	425	0	0	148
Skoglund Creek	0.00	0	0.00	0.0	1546	3.81	1055	0	185	0	871	0
Slapjack	0.00	360	0.32	0.2	1122	10.49	1122	0	1123	0	0	0
South Dinky	0.00	0	0.00	0.0	681	2.75	90	591	0	0	90	0
Sparkle III	17.63	616	0.38	0.6	1633	3.95	346	1287	289	0	0	0
Sparkle IV	0.00	423	0.42	0.0	1011	3.02	78	933	0	0	78	121
Stambaugh Pit	0.00	0	0.00	0.0	149	2.13	0	149	0	0	0	0
Storm	0.00	200	0.18	0.0	1117	3.61	197	920	197	0	0	715
Sudden Lake	14.61	934	0.95	2.2	985	3.07	477	507	462	0	0	13
Sullivan Creek	2.18	0	0.00	0.0	3067	3.63	0	3067	0	0	0	54
Tenderfoot East	0.00	35	0.08	0.0	442	4.33	194	248	195	0	0	0
Tenderfoot West	5.34	1170	2.41	0.0	486	3.55	9	478	0	0	0	0
Tote Creek	0.00	250	0.24	0.0	1030	3.53	0	1030	0	0	0	746
Tradition Creek	6.24	375	0.23	0.0	1662	4.00	1277	385	246	920	102	0
U.S. 2	1.14	900	1.05	1.5	858	2.15	8	850	8	0	0	850
Webstur	14.16	0	0.00	0.0	2061	2.96	87	1975	0	0	0	45
Wellington	9.70	500	0.39	0.5	1267	3.05	280	987	241	0	0	0
Whitetail	1.12	300	0.82	0.2	365	2.70	0	365	0	0	0	212
Wildcat	16.48	425	1.12	0.5	380	1.94	12	369	0	0	0	0
Wolf	0.00	2345	0.61	2.3	3849	4.38	3612	237	1414	0	2198	0

Table 18. (Cont'd.)

Sale Name NAME	Imp Volume IMP	Thin Volume THIN	Road Volume ROAD	Salv Volume SALV	Mixed Volume MIX	Unmix Volume UNMIX	Emix Volume EMIX	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	OR % Vol %OR
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf				
Admin	0	398	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Adrian Creek	0	0	28	0	151	0	0	17.3%	71.3%	0.0%	4.9%
Aldridge Creek	0	76	15	0	420	179	203	24.3%	28.6%	0.0%	0.0%
Augustine	162	342	10	0	0	0	0	1.8%	98.2%	0.0%	0.0%
Basswood Ridge	0	173	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Big King	0	0	0	0	106	600	0	0.0%	89.2%	0.0%	0.0%
Birch	0	0	0	0	0	0	0	100.0%	0.0%	39.8%	0.0%
Bonifas Creek	0	661	25	0	0	0	0	32.4%	67.6%	0.0%	0.0%
Broken Bridge	0	179	6	0	0	0	0	0.4%	99.6%	0.0%	0.0%
Buck	0	241	0	0	0	0	0	66.6%	33.4%	9.7%	56.9%
Bullseye	0	194	0	0	0	0	0	14.7%	85.3%	0.0%	0.0%
Bullwinkle	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Canyon Falls	0	483	18	0	0	0	0	13.8%	86.2%	10.5%	0.0%
China Road	0	274	0	0	0	0	0	43.5%	56.5%	43.4%	0.0%
Chipmunk	128	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Clear Lake	0	333	0	0	0	207	0	12.0%	88.0%	12.0%	0.0%
Compartment 85	0	142	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Cookout	948	0	0	0	0	235	0	0.0%	100.0%	0.0%	0.0%
Coontail Camp	0	0	15	0	0	0	0	20.1%	79.9%	18.4%	0.0%
Copps Tower	0	1127	85	0	0	278	0	17.5%	82.5%	12.5%	0.0%
County 527	227	0	0	0	0	0	0	37.7%	62.3%	37.7%	0.0%
Coupe	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Curry Lake	0	513	11	0	0	0	0	2.0%	98.0%	0.0%	0.0%
Deer Fly	0	17	0	0	0	0	0	94.1%	5.9%	31.1%	5.5%
Defiance Creek	0	199	0	0	0	0	0	5.8%	94.2%	5.8%	0.0%
Divide	0	1244	0	0	0	0	0	39.2%	60.8%	39.3%	0.0%
Eagle Lake	0	1296	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
East Dolph	294	0	0	0	0	0	0	73.0%	27.0%	63.4%	9.7%
East End	0	1908	63	0	0	98	0	4.5%	95.5%	1.5%	0.0%
East Irish	0	183	13	0	1097	825	0	0.4%	68.3%	0.0%	0.0%
East King - S	0	0	0	0	68	0	0	0.0%	100.0%	0.0%	0.0%
East Perch	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
East Prickett	518	0	24	0	0	0	0	37.0%	63.0%	14.5%	11.1%
Eastern Divide	0	681	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Edna Creek II	0	290	0	0	0	0	0	9.1%	90.9%	9.1%	0.0%
Elbow	335	0	40	0	0	114	0	8.6%	91.4%	0.0%	2.8%
Elmwood North	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Farce Creek	1075	193	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Finnegan	308	745	53	0	0	1696	0	13.9%	86.1%	12.2%	0.0%
Fisher Hardwood	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Fisher Lake	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Fourth Lake	0	0	0	0	0	198	0	0.0%	100.0%	0.0%	0.0%
Gillis	1404	0	24	0	0	115	0	15.1%	84.9%	14.1%	0.0%
Green Beanie	0	308	52	0	0	707	0	1.8%	98.2%	0.0%	0.0%
Grizzly Bear	361	708	38	0	0	0	0	49.9%	50.1%	14.1%	33.5%

Table 18. (Cont'd.)

Sale Name NAME	Imp Volume IMP	Thin Volume THIN	Road Volume ROAD	Salv Volume SALV	Mixed Volume MIX	Unmix Volume UNMIX	Emix Volume EMIX	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	CR % Vol %CR
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf				
Hartley Landing	0	192	0	0	0	298	0	5.0%	95.0%	5.0%	0.0%
Hartley Landing Resale	0	158	0	0	0	132	0	0.0%	100.0%	0.0%	0.0%
Hayfield	0	0	0	0	110	0	0	11.2%	62.9%	11.3%	0.0%
Haystack	0	0	0	0	155	0	254	100.0%	0.0%	0.0%	0.0%
Hemlock Lake	350	457	17	0	0	340	0	1.4%	98.6%	0.0%	0.0%
Hideout II	0	261	6	0	0	0	0	18.2%	81.8%	17.5%	0.0%
Hilltop 1982	0	143	0	0	0	0	0	54.2%	45.8%	0.0%	0.0%
Hilltop (Clisch)	0	378	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Hilltop (Corey)	0	378	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Honeysuckle	0	265	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Jacknife	352	0	0	0	211	325	0	39.7%	48.9%	39.8%	0.0%
Jackson	0	1103	21	0	252	478	0	8.6%	91.4%	7.6%	0.0%
James Lake	0	799	0	0	0	0	0	3.0%	97.0%	2.9%	0.0%
Jumbo East	0	1492	77	0	0	0	0	38.0%	62.0%	34.8%	0.0%
Kallio	522	0	37	0	0	218	0	65.3%	34.7%	63.7%	0.0%
Kenton Heights	0	331	0	0	234	0	0	34.5%	38.4%	26.0%	0.0%
Ketchum Lake	0	0	0	0	0	0	0	2.6%	97.4%	2.6%	0.0%
Kits Creek	390	81	73	0	0	0	0	36.4%	63.6%	22.2%	0.0%
Knucklehead Salvage - S	0	315	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Lambert Creek	0	0	3	0	0	0	0	0.5%	99.5%	0.0%	0.0%
Little Giant	1106	343	0	0	0	0	0	18.2%	81.8%	18.3%	0.0%
Little Giant Hardwoods	0	162	0	0	224	0	0	0.0%	41.8%	0.0%	0.0%
Lone Wolf	1135	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Lower Dam	0	680	23	52	286	0	0	14.7%	70.1%	12.8%	0.0%
Lucky Shot	0	74	0	0	580	0	0	19.4%	9.1%	0.0%	0.0%
L.A.R.	0	522	0	0	0	104	0	0.0%	100.0%	0.0%	0.0%
Madelyn Lake	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Marsh Creek South	0	0	0	0	0	0	0	4.4%	95.6%	4.3%	0.0%
McRae Creek	0	552	3	0	0	0	0	7.8%	92.2%	7.3%	0.0%
Merry Pete	616	0	22	0	288	0	0	1.9%	73.4%	0.0%	0.0%
Mink Lake	0	532	9	0	0	217	0	33.5%	66.5%	32.7%	0.0%
Mitigwaki Creek	0	0	0	0	0	0	0	30.2%	69.8%	30.2%	0.0%
Montombo	0	1429	33	0	328	455	0	1.2%	87.5%	0.0%	0.0%
North Grade	0	638	0	0	0	0	0	8.7%	91.3%	8.7%	0.0%
North McAllister	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Old Farm	0	1047	0	0	0	0	0	16.4%	83.6%	16.4%	0.0%
Osprey	2089	0	10	0	0	216	0	0.4%	99.6%	0.0%	0.0%
Otter Lake	0	0	15	0	0	0	0	0.6%	99.4%	0.0%	0.0%
Paint Springs	0	202	27	0	152	213	0	37.6%	52.0%	35.8%	0.0%
Paw Lake	0	924	78	0	161	0	0	59.8%	34.2%	25.0%	3.0%
Peckerwood	2307	0	53	0	664	0	0	18.9%	63.0%	7.7%	1.1%
Pelton	32	1215	0	0	0	0	0	4.0%	96.0%	0.0%	0.0%
Pelton West	73	37	1	0	0	0	0	0.3%	99.7%	0.0%	0.0%
Pendleton Creek	0	0	22	0	0	0	0	2.4%	97.6%	0.0%	0.0%
Perch Corner	0	754	9	0	0	563	0	0.6%	99.4%	0.0%	0.0%

Table 18. (Cont'd.)

Sale Name NAME	Imp Volume IMP	Thin Volume THIN	Road Volume ROAD	Salv Volume SALV	Mixed Volume MIX	Unmix Volume UNMIX	Emix Volume EMIX	Even % Vol %EVOL	Uneven % Vol %UNVOL	Clear % Vol %CC	OR % Vol %OR
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf				
Perch Lake	0	1237	48	0	0	679	0	2.2%	97.8%	0.0%	0.0%
Perch Tower	0	471	0	0	0	0	0	0.0%	99.9%	0.0%	0.0%
Pickle Pond	143	162	0	0	0	0	0	70.0%	30.0%	70.1%	0.0%
Picnic Table	0	0	0	0	0	100	0	0.0%	100.0%	0.0%	0.0%
Pine Creek	95	937	0	0	0	0	0	4.2%	95.8%	4.2%	0.0%
Poncho	0	2030	54	0	0	0	0	40.8%	59.2%	39.3%	0.0%
Ponozzo Lake - S	0	118	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Pothole	0	706	13	0	0	545	0	27.5%	72.5%	26.9%	0.0%
River Bend	0	264	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Rookery	0	0	0	0	290	0	0	81.0%	0.0%	0.0%	0.0%
R.J.	128	326	0	0	0	0	0	41.3%	58.7%	41.3%	0.0%
R.J. #2	102	32	0	0	0	0	0	64.4%	35.6%	64.4%	0.0%
Santa Fe	0	815	13	0	314	0	0	38.2%	45.2%	31.0%	2.6%
Section 18	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Section 28	0	0	0	0	32	0	0	0.0%	95.9%	0.0%	0.0%
Section 28 - II	0	0	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Sidnaw Branch	0	0	0	0	498	470	0	28.6%	45.0%	0.0%	0.0%
Silver Bullet	0	1117	17	0	0	260	0	55.3%	44.7%	54.9%	0.0%
Silver Creek	0	0	26	89	0	0	0	81.7%	18.3%	35.0%	45.0%
Silver Lake	0	0	0	12	290	0	0	0.0%	100.0%	0.0%	0.0%
Ski Pole	0	221	9	0	0	0	0	54.0%	46.0%	52.9%	0.0%
Skoglund Creek	0	0	0	0	491	0	165	68.2%	0.0%	12.0%	0.0%
Slapjack	0	0	0	0	0	0	0	100.0%	0.0%	100.0%	0.0%
South Dinky	240	352	0	0	0	0	0	13.2%	86.8%	0.0%	0.0%
Sparkle III	0	1286	58	0	0	0	0	21.2%	78.8%	17.7%	0.0%
Sparkle IV	110	142	0	0	0	562	0	7.7%	92.3%	0.0%	0.0%
Stambaugh Pit	0	149	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Storm	145	61	0	0	0	0	0	17.6%	82.4%	17.6%	0.0%
Sudden Lake	110	384	14	0	0	0	0	48.5%	51.5%	46.9%	0.0%
Sullivan Creek	2525	490	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Tenderfoot East	0	248	0	0	0	0	0	43.9%	56.1%	44.2%	0.0%
Tenderfoot West	0	478	9	0	0	0	0	1.7%	98.3%	0.0%	0.0%
Tote Creek	0	0	0	0	0	284	0	0.0%	100.0%	0.0%	0.0%
Tradition Creek	0	385	0	0	0	0	0	76.9%	23.1%	14.8%	56.0%
U.S. 2	0	0	0	0	0	0	0	1.0%	99.0%	0.9%	0.0%
Webstur	1933	0	88	0	0	0	0	4.2%	95.8%	0.0%	0.0%
Wellington	0	988	39	0	0	0	0	22.1%	77.9%	19.0%	0.0%
Whitetail	0	153	0	0	0	0	0	0.0%	100.0%	0.0%	0.0%
Wildcat	0	368	12	0	0	0	0	3.1%	96.9%	0.0%	0.0%
Wolf	0	237	0	0	0	0	0	93.8%	6.2%	36.7%	0.0%

Table 18. (Cont'd.)

Sale Name NAME	Shelt % Vol %SHELT	Select % Vol %SELECT	Imp % Vol %IMP	Thin % Vol %THIN	Road % Vol %ROAD	Salv % Vol %SALV	Mixed % Vol %MIX	Unmix % Vol %UNMIX	Emix % Vol %EMIX	# of Clear #CC	# of OR #OR
Admin	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Adrian Creek	10.4%	71.4%	0.0%	0.0%	2.1%	0.0%	11.4%	0.0%	0.0%	0	1
Aldridge Creek	0.0%	0.0%	0.0%	8.5%	1.7%	0.0%	47.0%	20.0%	22.7%	0	0
Augustine	0.0%	0.0%	29.3%	69.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0	0
Basswood Ridge	0.0%	90.5%	0.0%	9.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Big King	0.0%	28.1%	0.0%	0.0%	0.0%	0.0%	10.8%	61.2%	0.0%	0	0
Birch	59.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Bonifas Creek	29.8%	0.0%	0.0%	67.6%	2.6%	0.0%	0.0%	0.0%	0.0%	0	0
Broken Bridge	0.0%	87.4%	0.0%	12.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0	0
Buck	0.0%	0.0%	0.0%	33.5%	0.0%	0.0%	0.0%	0.0%	0.0%	1	3
Bullseye	14.7%	51.8%	0.0%	33.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Bullwinkle	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Canyon Falls	0.0%	0.0%	0.0%	86.3%	3.2%	0.0%	0.0%	0.0%	0.0%	1	0
China Road	0.0%	26.3%	0.0%	30.2%	0.0%	0.0%	0.0%	0.0%	0.0%	3	0
Chipmunk	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Clear Lake	0.0%	33.8%	0.0%	33.5%	0.0%	0.0%	0.0%	20.8%	0.0%	1	0
Compartment 85	0.0%	0.0%	0.0%	99.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Cookout	0.0%	0.0%	80.3%	0.0%	0.0%	0.0%	0.0%	19.9%	0.0%	0	0
Coontail Camp	0.0%	80.0%	0.0%	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	1	0
Copps Tower	0.0%	0.0%	0.0%	66.1%	5.0%	0.0%	0.0%	16.3%	0.0%	2	0
County 527	0.0%	0.0%	62.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Coupe	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Curry Lake	0.0%	0.0%	0.0%	98.1%	2.1%	0.0%	0.0%	0.0%	0.0%	0	0
Deer Fly	57.8%	4.8%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	5	1
Defiance Creek	0.0%	74.0%	0.0%	20.3%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Divide	0.0%	14.8%	0.0%	46.1%	0.0%	0.0%	0.0%	0.0%	0.0%	7	0
Eagle Lake	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
East Dolph	0.0%	0.0%	27.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3	1
East End	0.0%	0.0%	0.0%	90.9%	3.0%	0.0%	0.0%	4.7%	0.0%	1	0
East Irish	0.0%	39.5%	0.0%	5.2%	0.4%	0.0%	31.3%	23.6%	0.0%	0	0
East King - S	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.9%	0.0%	0.0%	0	0
East Perch	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
East Prickett	10.1%	32.1%	31.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	1	1
Eastern Divide	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Edna Creek II	0.0%	0.0%	0.0%	90.9%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Elbow	0.0%	26.0%	48.9%	0.0%	5.8%	0.0%	0.0%	16.6%	0.0%	0	1
Elmwood North	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Farce Creek	0.0%	0.0%	85.0%	15.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Finnegan	0.0%	0.0%	9.7%	23.4%	1.7%	0.0%	0.0%	53.2%	0.0%	1	0
Fisher Hardwood	0.0%	99.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Fisher Lake	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Fourth Lake	0.0%	78.7%	0.0%	0.0%	0.0%	0.0%	0.0%	21.5%	0.0%	0	0
Gillis	0.0%	16.6%	63.4%	0.0%	1.1%	0.0%	0.0%	5.2%	0.0%	2	0
Green Beanie	0.0%	62.1%	0.0%	11.0%	1.8%	0.0%	0.0%	25.1%	0.0%	0	0
Grizzly Bear	1.0%	12.3%	12.8%	25.0%	1.3%	0.0%	0.0%	0.0%	0.0%	4	4

Table 18. (Cont'd.)

Sale Name NAME	Shelt % Vol %SHELT	Select % Vol %SELECT	Imp % Vol %IMP	Thin % Vol %THIN	Road % Vol %ROAD	Salv % Vol %SALV	Mixed % Vol %MIX	Unmix % Vol %UNMIX	Emix % Vol %EMIX	# of Clear #CC	# of OR #OR
Hartley Landing	0.0%	13.1%	0.0%	32.1%	0.0%	0.0%	0.0%	49.9%	0.0%	1	0
Hartley Landing Resale	0.0%	21.1%	0.0%	43.3%	0.0%	0.0%	0.0%	36.2%	0.0%	0	0
Hayfield	0.0%	62.7%	0.0%	0.0%	0.0%	0.0%	25.8%	0.0%	0.0%	1	0
Haystack	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.0%	0.0%	62.2%	0	0
Hemlock Lake	0.0%	0.0%	30.1%	39.3%	1.5%	0.0%	0.0%	29.3%	0.0%	0	0
Hideout II	0.0%	53.1%	0.0%	28.7%	0.7%	0.0%	0.0%	0.0%	0.0%	2	0
Hilltop 1982	54.2%	10.9%	0.0%	34.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Hilltop (Clisch)	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Hilltop (Corey)	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Honeysuckle	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Jacknife	0.0%	12.3%	19.0%	0.0%	0.0%	0.0%	11.4%	17.6%	0.0%	4	0
Jackson	0.0%	0.0%	0.0%	55.0%	1.0%	0.0%	12.6%	23.8%	0.0%	3	0
James Lake	0.0%	0.0%	0.0%	97.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Jumbo East	0.0%	0.0%	0.0%	62.0%	3.2%	0.0%	0.0%	0.0%	0.0%	4	0
Kallio	0.0%	0.0%	24.5%	0.0%	1.7%	0.0%	0.0%	10.2%	0.0%	5	0
Kenton Heights	8.6%	0.0%	0.0%	38.4%	0.0%	0.0%	27.1%	0.0%	0.0%	1	0
Ketchum Lake	0.0%	97.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Kits Creek	6.3%	13.1%	41.7%	8.7%	7.8%	0.0%	0.0%	0.0%	0.0%	2	0
Knucklehead Salvage - S	0.0%	0.0%	0.0%	99.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Lambert Creek	0.0%	99.5%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0	0
Little Giant	0.0%	15.6%	50.6%	15.7%	0.0%	0.0%	0.0%	0.0%	0.0%	2	0
Little Giant Hardwoods	0.0%	0.0%	0.0%	42.0%	0.0%	0.0%	58.0%	0.0%	0.0%	0	0
Lone Wolf	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Lower Dam	0.0%	0.9%	0.0%	56.4%	1.9%	4.3%	23.7%	0.0%	0.0%	1	0
Lucky Shot	19.5%	0.0%	0.0%	9.1%	0.0%	0.0%	71.6%	0.0%	0.0%	0	0
L.A.R.	0.0%	10.9%	0.0%	74.2%	0.0%	0.0%	0.0%	14.8%	0.0%	0	0
Madelyn Lake	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Marsh Creek South	0.0%	95.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
McRae Creek	0.0%	0.0%	0.0%	92.1%	0.5%	0.0%	0.0%	0.0%	0.0%	1	0
Merry Pete	0.0%	20.5%	52.9%	0.0%	1.9%	0.0%	24.8%	0.0%	0.0%	0	0
Mink Lake	0.0%	0.0%	0.0%	47.2%	0.8%	0.0%	0.0%	19.3%	0.0%	4	0
Mitigwaki Creek	0.0%	70.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2	0
Montombo	0.0%	22.1%	0.0%	49.6%	1.1%	0.0%	11.4%	15.8%	0.0%	0	0
North Grade	0.0%	0.0%	0.0%	91.4%	0.0%	0.0%	0.0%	0.0%	0.0%	2	0
North McAllister	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Old Farm	0.0%	0.0%	0.0%	83.6%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Osprey	0.0%	0.0%	90.3%	0.0%	0.4%	0.0%	0.0%	9.3%	0.0%	0	0
Otter Lake	0.0%	99.6%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0	0
Paint Springs	0.0%	23.3%	0.0%	14.0%	1.9%	0.0%	10.5%	14.7%	0.0%	4	0
Paw Lake	28.9%	0.0%	0.0%	34.2%	2.9%	0.0%	6.0%	0.0%	0.0%	3	1
Peckerwood	8.6%	0.0%	63.1%	0.0%	1.4%	0.0%	18.1%	0.0%	0.0%	2	1
Pelton	4.0%	0.0%	2.5%	93.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Pelton West	0.0%	72.4%	18.0%	9.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0	0
Pendleton Creek	0.0%	97.8%	0.0%	0.0%	2.4%	0.0%	0.0%	0.0%	0.0%	0	0
Perch Corner	0.0%	0.0%	0.0%	56.9%	0.7%	0.0%	0.0%	42.5%	0.0%	0	0

Table 18. (Cont'd.)

Sale Name NAME	Shelt % Vol %SHELT	Select % Vol %SELECT	Imp % Vol %IMP	Thin % Vol %THIN	Road % Vol %ROAD	Salv % Vol %SALV	Mixed % Vol %MIX	Unmix % Vol %UNMIX	Emix % Vol %EMIX	# of Clear #CC	# of OR #OR
Perch Lake	0.0%	8.9%	0.0%	57.4%	2.2%	0.0%	0.0%	31.5%	0.0%	0	0
Perch Tower	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Pickle Pond	0.0%	0.0%	14.1%	16.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3	0
Picnic Table	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	99.6%	0.0%	0	0
Pine Creek	0.0%	0.0%	8.8%	87.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Poncho	0.0%	0.0%	0.0%	59.3%	1.6%	0.0%	0.0%	0.0%	0.0%	6	0
Ponozzo Lake - S	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Pothole	0.0%	0.0%	0.0%	41.0%	0.8%	0.0%	0.0%	31.6%	0.0%	2	0
River Bend	0.0%	0.0%	0.0%	99.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Rookery	81.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.0%	0.0%	0.0%	0	0
R.J.	0.0%	25.8%	9.3%	23.7%	0.0%	0.0%	0.0%	0.0%	0.0%	4	0
R.J. #2	0.0%	15.7%	15.3%	4.8%	0.0%	0.0%	0.0%	0.0%	0.0%	2	0
Santa Fe	3.9%	2.1%	0.0%	43.1%	0.7%	0.0%	16.6%	0.0%	0.0%	4	1
Section 18	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Section 28	0.0%	96.0%	0.0%	0.0%	0.0%	0.0%	4.1%	0.0%	0.0%	0	0
Section 28 - II	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Sidnaw Branch	28.7%	20.2%	0.0%	0.0%	0.0%	0.0%	26.4%	24.9%	0.0%	0	0
Silver Bullet	0.0%	0.0%	0.0%	36.3%	0.6%	0.0%	0.0%	8.4%	0.0%	13	0
Silver Creek	0.0%	11.8%	0.0%	0.0%	1.9%	6.5%	0.0%	0.0%	0.0%	2	3
Silver Lake	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	96.2%	0.0%	0.0%	0	0
Ski Pole	0.0%	18.4%	0.0%	27.5%	1.1%	0.0%	0.0%	0.0%	0.0%	2	0
Skoglund Creek	56.4%	0.0%	0.0%	0.0%	0.0%	0.0%	31.8%	0.0%	10.7%	1	0
Slapjack	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6	0
South Dinky	13.2%	0.0%	35.2%	51.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Sparkle III	0.0%	0.0%	0.0%	78.8%	3.6%	0.0%	0.0%	0.0%	0.0%	1	0
Sparkle IV	7.7%	12.0%	10.9%	14.0%	0.0%	0.0%	0.0%	55.6%	0.0%	0	0
Stambaugh Pit	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Storm	0.0%	64.0%	13.0%	5.5%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Sudden Lake	0.0%	1.3%	11.2%	39.0%	1.4%	0.0%	0.0%	0.0%	0.0%	7	0
Sullivan Creek	0.0%	1.8%	82.3%	16.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Tenderfoot East	0.0%	0.0%	0.0%	56.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2	0
Tenderfoot West	0.0%	0.0%	0.0%	98.4%	1.9%	0.0%	0.0%	0.0%	0.0%	0	0
Tote Creek	0.0%	72.5%	0.0%	0.0%	0.0%	0.0%	0.0%	27.6%	0.0%	0	0
Tradition Creek	6.1%	0.0%	0.0%	23.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2	5
U.S. 2	0.0%	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1	0
Webstur	0.0%	2.2%	93.8%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	0	0
Wellington	0.0%	0.0%	0.0%	78.0%	3.1%	0.0%	0.0%	0.0%	0.0%	1	0
Whitetail	0.0%	58.1%	0.0%	41.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0	0
Wildcat	0.0%	0.0%	0.0%	96.8%	3.2%	0.0%	0.0%	0.0%	0.0%	0	0
Wolf	57.1%	0.0%	0.0%	6.2%	0.0%	0.0%	0.0%	0.0%	0.0%	5	0

Table 18. (Cont'd.)

Sale Name NAME	# of Shelt #SHELT	# of Select #SELECT	# of Imp #IMP	# of Thin #THIN	# of Road #ROAD	# of Salv #SALV	# of Mix #MIX	# of Unmix #UNMIX	# of Emix #EMIX	Mixed Hdws MHS	Red Maple RMS	Sugar Maple SMS
										Mbf	Mbf	Mbf
Admin	0	0	0	4	0	0	0	0	0	0	0	52
Adrian Creek	1	8	0	0	1	0	1	0	0	0	40	186
Aldridge Creek	0	0	0	1	3	0	3	1	1	0	79	109
Augustine	0	0	2	4	1	0	0	0	0	0	0	74
Basswood Ridge	0	10	0	1	0	0	0	0	0	51	0	74
Big King	0	3	0	0	0	0	1	5	0	0	33	129
Birch	3	0	0	0	0	0	0	0	0	6	0	0
Bonifas Creek	2	0	0	3	1	0	0	0	0	0	0	157
Broken Bridge	0	16	0	3	1	0	0	0	0	19	27	174
Buck	0	0	0	2	0	0	0	0	0	0	63	214
Bullseye	1	4	0	4	0	0	0	0	0	0	15	79
Bullwinkle	0	4	0	0	0	0	0	0	0	0	14	62
Canyon Falls	0	0	0	4	1	0	0	0	0	0	0	89
China Road	0	2	0	3	0	0	0	0	0	0	17	129
Chipmunk	0	0	2	0	0	0	0	0	0	0	20	14
Clear Lake	0	2	0	3	0	0	0	1	0	0	22	96
Compartment 85	0	0	0	2	0	0	0	0	0	0	0	43
Cookout	0	0	7	0	0	0	0	2	0	0	19	298
Coontail Camp	0	4	0	0	1	0	0	0	0	0	8	121
Copps Tower	0	0	0	9	4	0	0	2	0	0	0	94
County 527	0	0	3	0	0	0	0	0	0	6	0	45
Coupe	0	2	0	0	0	0	0	0	0	0	10	135
Curry Lake	0	0	0	9	2	0	0	0	0	0	0	167
Deer Fly	6	1	0	1	0	0	0	0	0	0	25	178
Defiance Creek	0	8	0	2	0	0	0	0	0	13	25	121
Divide	0	2	0	6	0	0	0	0	0	0	0	258
Eagle Lake	0	0	0	10	0	0	0	0	0	0	22	336
East Dolph	0	0	2	0	0	0	0	0	0	31	51	0
East End	0	0	0	14	3	0	0	1	0	0	45	254
East Irish	0	5	0	1	1	0	4	3	0	0	92	1167
East King - S	0	0	0	0	0	0	1	0	0	0	0	4
East Perch	0	5	0	0	0	0	0	0	0	0	0	410
East Prickett	1	3	5	0	2	0	0	0	0	0	57	310
Eastern Divide	0	0	0	3	0	0	0	0	0	35	0	26
Edna Creek II	0	0	0	6	0	0	0	0	0	0	0	41
Elbow	0	2	3	0	1	0	0	1	0	43	0	142
Elmwood North	0	9	0	0	0	0	0	0	0	79	0	162
Farce Creek	0	0	9	2	0	0	0	0	0	0	175	174
Finnegan	0	0	3	6	2	0	0	8	0	0	18	548
Fisher Hardwood	0	1	0	0	0	0	0	0	0	0	0	15
Fisher Lake	0	12	0	0	0	0	0	0	0	18	0	102
Fourth Lake	0	5	0	0	0	0	0	1	0	56	12	131
Gillis	0	3	14	0	2	0	0	1	0	59	0	193
Green Beanie	0	7	0	2	1	0	0	3	0	10	0	537
Grizzly Bear	1	1	2	7	1	0	0	0	0	0	62	651

Table 18. (Cont'd.)

Sale Name NAME	# of Shelt #SHELT	# of Select #SELECT	# of Imp #IMP	# of Thin #THIN	# of Road #ROAD	# of Salv #SALV	# of Mix #MIX	# of Unmix #UNMIX	# of Emix #EMIX	Mixed Hdws MHS	Red Maple RMS	Sugar Maple SMS
										Mbf	Mbf	Mbf
Hartley Landing	0	2	0	2	0	0	0	3	0	0	11	58
Hartley Landing Resale	0	2	0	2	0	0	0	1	0	11	0	34
Hayfield	0	5	0	0	0	0	3	0	0	0	12	90
Haystack	0	0	0	0	0	0	0	0	2	0	19	31
Hemlock Lake	0	0	2	2	1	0	0	2	0	0	0	160
Hideout II	0	5	0	2	1	0	0	0	0	0	29	140
Hilltop 1982	2	1	0	1	0	0	0	0	0	0	10	133
Hilltop (Clisch)	0	0	0	3	0	0	0	0	0	0	13	47
Hilltop (Corey)	0	0	0	3	0	0	0	0	0	0	13	47
Honeysuckle	0	0	0	3	0	0	0	0	0	0	0	53
Jacknife	0	1	1	0	0	0	1	2	0	0	0	216
Jackson	0	0	0	5	1	0	1	2	0	0	27	274
James Lake	0	0	0	10	0	0	0	0	0	0	0	268
Jumbo East	0	0	0	10	6	0	0	0	0	0	13	292
Kallio	0	0	3	0	1	0	0	1	0	115	0	157
Kenton Heights	1	0	0	3	0	0	1	0	0	0	13	72
Ketchum Lake	0	8	0	0	0	0	0	0	0	35	0	135
Kits Creek	1	2	6	1	2	0	0	0	0	0	63	201
Knucklehead Salvage - S	0	0	0	4	0	0	0	0	0	0	0	27
Lambert Creek	0	6	0	0	1	0	0	0	0	0	86	0
Little Giant	0	2	7	2	0	0	0	0	0	38	0	138
Little Giant Hardwoods	0	0	0	1	0	0	1	0	0	0	6	48
Lone Wolf	0	0	8	0	0	0	0	0	0	38	0	438
Lower Dam	0	1	0	5	4	0	2	0	0	0	25	316
Lucky Shot	1	0	0	1	0	0	4	0	0	11	0	242
L.A.R.	0	1	0	5	0	0	0	1	0	0	0	66
Madelyn Lake	0	7	0	0	0	0	0	0	0	0	9	100
Marsh Creek South	0	7	0	0	0	0	0	0	0	0	6	77
McRae Creek	0	0	0	8	1	0	0	0	0	0	0	102
Merry Pete	0	2	4	0	1	0	1	0	0	22	0	242
Mink Lake	0	0	0	6	1	0	0	2	0	0	10	82
Mitigwaki Creek	0	7	0	0	0	0	0	0	0	27	30	74
Montombo	0	2	0	6	2	0	1	1	0	0	36	384
North Grade	0	0	0	7	0	0	0	0	0	0	45	193
North McAllister	0	5	0	0	0	0	0	0	0	0	52	363
Old Farm	0	0	0	6	0	0	0	0	0	34	0	90
Osprey	0	0	11	0	1	0	0	1	0	28	0	219
Otter Lake	0	16	0	0	2	0	0	0	0	30	38	304
Paint Springs	0	2	0	3	1	0	1	1	0	9	0	93
Paw Lake	5	0	0	7	4	0	1	0	0	0	35	208
Peckerwood	2	0	9	0	2	0	3	0	0	54	0	872
Pelton	1	0	1	13	0	0	0	0	0	0	0	117
Pelton West	0	2	1	1	1	0	0	0	0	0	0	55
Pendleton Creek	0	6	0	0	1	0	0	0	0	38	0	102
Perch Corner	0	0	0	5	1	0	0	3	0	0	50	233

Table 18. (Cont'd.)

Sale Name NAME	# of Shelt #SHELT	# of Select #SELECT	# of Imp #IMP	# of Thin #THIN	# of Road #ROAD	# of Salv #SALV	# of Mix #MIX	# of Unmix #UNMIX	# of Bmix #BMIX	Mixed Hdwe MHS	Red Maple RMS	Sugar Maple SMS
										Mbf	Mbf	Mbf
Perch Lake	0	2	0	6	1	0	0	4	0	0	15	575
Perch Tower	0	0	0	13	0	0	0	0	0	0	11	239
Pickle Pond	0	0	1	1	0	0	0	0	0	0	0	49
Picnic Table	0	0	0	0	0	0	0	1	0	0	0	19
Pine Creek	0	0	1	7	0	0	0	0	0	0	87	183
Poncho	0	0	0	15	3	0	0	0	0	0	50	284
Ponozzo Lake - S	0	0	0	1	0	0	0	0	0	0	0	0
Pothole	0	0	0	4	1	0	0	2	0	38	0	187
River Bend	0	0	0	2	0	0	0	0	0	0	0	44
Rookery	3	0	0	0	0	0	1	0	1	43	43	111
R.J.	0	3	1	4	0	0	0	0	0	0	70	269
R.J. #2	0	2	1	1	0	0	0	0	0	10	95	24
Santa Fe	1	1	0	7	1	0	1	0	0	0	18	205
Section 18	0	11	0	0	0	0	0	0	0	0	29	426
Section 28	0	9	0	0	0	0	1	0	0	0	11	249
Section 28 - II	0	2	0	0	0	0	0	0	0	0	0	39
Sidnaw Branch	3	2	0	0	0	0	2	2	0	0	59	472
Silver Bullet	0	0	0	11	1	0	0	1	0	0	0	163
Silver Creek	0	1	0	0	1	0	0	0	0	0	30	173
Silver Lake	0	0	0	0	0	1	3	0	0	0	0	98
Ski Pole	0	1	0	1	1	0	0	0	0	0	9	67
Skoglund Creek	6	0	0	0	0	0	3	0	1	0	69	85
Slapjack	0	0	0	0	0	0	0	0	0	15	0	94
South Dinky	1	0	1	2	0	0	0	0	0	30	0	47
Sparkle III	0	0	0	8	1	0	0	0	0	0	12	248
Sparkle IV	1	1	1	1	0	0	0	4	0	25	0	129
Stambaugh Pit	0	0	0	1	0	0	0	0	0	0	0	10
Storm	0	6	1	1	0	0	0	0	0	0	14	310
Sudden Lake	0	1	1	5	1	0	0	0	0	0	20	147
Sullivan Creek	0	1	12	2	0	0	0	0	0	29	0	955
Tenderfoot East	0	0	0	3	0	0	0	0	0	14	0	29
Tenderfoot West	0	0	0	5	1	0	0	0	0	28	0	70
Tote Creek	0	5	0	0	0	0	0	2	0	0	15	478
Tradition Creek	1	0	0	2	0	0	0	0	0	79	0	371
U.S. 2	0	9	0	0	0	0	0	0	0	0	15	200
Webstur	0	1	16	0	3	0	0	0	0	96	0	448
Wellington	0	0	0	8	2	0	0	0	0	9	0	125
Whitetail	0	1	0	1	0	0	0	0	0	0	0	64
Wildcat	0	0	0	5	1	0	0	0	0	0	11	119
Wolf	9	0	0	1	0	0	0	0	0	0	100	1000

Table 18. (Cont'd.)

Sale Name NAME	Yellow Birch YBS	Bass-Wood BAS	Elm ES	Aspen AS	Red Oak RO	White Ash ASH	Black Cherry BC	Paper Birch PBS	Mixed Con. MCS	Balsam Fir BFS	Hem-lock HS	Spruce SS	Red & White RWS
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Admin	0	0	0	1	0	0	0	0	0	0	0	7	0
Adrian Creek	114	0	0	0	0	0	0	15	0	0	11	109	10
Aldridge Creek	46	0	32	0	0	13	0	0	0	0	0	14	0
Augustine	13	0	105	0	0	0	0	0	0	0	0	11	0
Basswood Ridge	28	0	0	0	0	0	0	0	13	0	0	0	0
Big King	28	0	6	28	0	0	23	0	0	0	0	2	0
Birch	0	0	0	14	0	0	0	0	10	0	0	0	0
Bonifas Creek	19	0	98	34	0	0	0	0	0	0	0	22	0
Broken Bridge	39	14	0	49	0	0	0	0	0	0	0	0	0
Buck	52	37	0	35	0	51	0	0	0	0	0	0	0
Bullseye	32	0	0	19	0	0	0	0	0	0	0	9	0
Bullwinkle	22	0	0	9	0	0	26	0	0	0	0	45	0
Canyon Falls	22	15	84	19	0	0	0	0	0	0	0	4	0
China Road	10	0	24	139	0	0	0	0	0	0	0	7	0
Chipmunk	20	0	0	0	0	0	0	0	0	0	0	0	0
Clear Lake	40	0	0	83	0	0	0	44	0	0	0	14	0
Compartment 85	8	0	0	0	0	0	0	0	0	0	0	4	0
Cookout	23	17	0	22	0	0	0	0	0	0	0	0	0
Coontail Camp	20	0	0	0	0	0	0	0	0	0	0	17	29
Copps Tower	37	43	0	19	0	19	0	0	0	0	0	31	0
County 527	0	0	0	0	0	0	0	0	0	0	0	0	0
Coupe	38	0	99	6	0	0	39	0	0	0	0	22	0
Curry Lake	31	0	0	10	0	0	0	0	0	0	0	11	0
Deer Fly	130	0	0	50	0	0	0	0	12	0	0	74	0
Defiance Creek	22	48	0	48	0	0	0	0	0	0	0	15	0
Divide	22	37	0	179	0	0	0	0	0	0	0	163	199
Eagle Lake	45	0	0	16	0	0	0	0	0	0	0	25	0
East Dolph	0	0	0	0	0	0	0	0	5	0	0	0	0
East End	55	15	37	85	0	17	0	0	0	0	0	25	0
East Irish	472	154	48	67	0	0	0	0	0	0	86	0	24
East King - S	0	0	37	0	0	0	0	0	0	0	0	3	0
East Perch	70	0	0	0	0	0	0	0	0	0	0	5	0
East Prickett	82	71	0	67	0	0	0	0	0	0	0	13	7
Eastern Divide	13	0	0	0	0	0	0	0	22	0	0	0	0
Edna Creek II	12	0	25	0	0	0	0	0	0	0	0	0	0
Elbow	39	0	0	0	0	0	0	0	9	0	0	0	0
Elmwood North	33	0	0	0	0	0	0	0	22	0	0	0	0
Farce Creek	126	38	0	0	0	0	0	0	0	0	0	79	0
Finnegan	109	96	0	238	0	32	0	0	0	0	0	0	0
Fisher Hardwood	0	0	22	11	0	0	0	0	0	0	0	0	0
Fisher Lake	10	0	0	0	0	0	0	0	0	0	0	0	0
Fourth Lake	50	0	0	17	0	0	0	0	0	0	0	42	0
Gillis	88	0	0	0	0	0	0	0	0	0	0	0	0
Green Beanie	86	0	0	0	0	0	0	0	36	0	0	0	0
Grizzly Bear	195	73	36	177	0	0	0	0	0	0	21	0	0

Table 18. (Cont'd.)

Sale Name NAME	Yellow Birch YBS	Bass-Wood BAS	Elm ES	Aspen AS	Red Oak RO	White Ash ASH	Black Cherry BC	Paper Birch PBS	Mixed Con. MCS	Balsam Fir BFS	Hem-lock HS	Spruce SS	Red & White RWS
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Hartley Landing	31	0	41	43	0	0	0	0	0	0	0	4	0
Hartley Landing Resale	16	0	0	0	0	0	0	0	3	0	0	0	0
Hayfield	17	0	94	12	0	0	0	0	0	0	0	0	0
Haystack	13	18	19	8	0	0	0	13	0	0	0	38	0
Hemlock Lake	11	0	0	0	0	0	0	0	0	0	0	0	0
Hideout II	27	21	0	58	0	0	0	0	22	0	0	0	0
Hilltop 1982	92	16	21	0	0	0	0	0	0	8	0	5	0
Hilltop (Clisch)	0	0	0	11	0	0	0	0	0	0	0	0	2
Hilltop (Corey)	0	0	0	11	0	0	0	0	0	0	0	0	2
Honeysuckle	17	0	21	0	0	0	0	0	0	0	0	0	0
Jacknife	20	17	0	254	0	0	0	0	0	8	0	15	0
Jackson	113	16	55	32	0	19	15	0	0	0	0	41	0
James Lake	23	18	100	5	0	0	0	0	0	0	0	0	0
Jumbo East	43	0	0	130	0	0	0	11	0	16	0	45	10
Kallio	0	0	0	0	0	0	0	0	130	0	0	0	0
Kenton Heights	0	0	0	40	0	0	0	21	0	0	0	30	31
Ketchum Lake	25	0	0	0	0	0	0	0	7	0	0	0	0
Kits Creek	110	0	0	16	0	0	0	0	0	0	0	33	0
Knucklehead Salvage - S	10	14	122	7	0	0	0	0	0	0	0	8	0
Lambert Creek	0	0	105	14	0	0	26	9	0	0	0	0	0
Little Giant	37	0	0	0	0	0	0	0	0	0	0	0	0
Little Giant Hardwoods	13	0	0	25	0	0	0	0	0	0	0	23	0
Lone Wolf	45	0	0	0	0	0	0	0	0	0	0	0	0
Lower Dam	75	56	41	28	0	0	0	0	0	0	0	14	0
Lucky Shot	12	0	0	0	0	0	0	0	9	0	0	0	0
L.A.R.	16	0	90	90	0	0	0	0	0	0	0	0	0
Madelyn Lake	20	0	0	0	0	0	0	0	0	0	0	52	0
Marsh Creek South	25	0	48	115	0	0	0	0	0	12	0	31	0
McRae Creek	0	0	202	7	0	0	17	0	0	0	0	11	0
Merry Pete	33	0	0	0	0	0	0	0	10	0	0	0	0
Mink Lake	37	0	101	92	0	0	0	0	0	0	0	7	0
Mitigwaki Creek	48	0	0	59	0	0	0	0	0	0	0	37	14
Montombo	59	360	126	178	0	103	0	0	0	0	0	16	0
North Grade	63	0	0	31	0	6	0	0	0	0	0	3	0
North McAllister	66	0	346	0	0	0	22	0	0	0	0	16	0
Old Farm	17	0	0	0	0	0	0	0	0	0	0	9	0
Osprey	65	0	0	0	0	0	0	0	0	0	0	0	0
Otter Lake	56	74	0	48	0	0	0	0	0	0	0	19	0
Paint Springs	0	0	0	0	0	0	0	0	16	0	0	0	11
Paw Lake	65	0	0	63	0	0	0	15	0	106	0	143	137
Peckerwood	247	0	0	0	0	0	0	0	97	0	0	0	0
Pelton	58	17	0	11	0	0	0	0	0	0	0	39	0
Pelton West	25	0	10	28	0	0	0	0	0	0	0	0	0
Pendleton Creek	10	0	0	0	0	0	0	0	19	0	0	0	0
Perch Corner	48	0	0	0	0	0	0	0	0	0	0	26	0

Table 18. (Cont'd.)

Sale Name NAME	Yellow Birch YBS	Bass-Wood BAS	Elm ES	Aspen AS	Red Oak RO	White Ash ASH	Black Cherry BC	Paper Birch PBS	Mixed Con. MCS	Balsam Fir BFS	Hem-lock HS	Spruce SS	Red & White RWS
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Perch Lake	74	18	210	67	0	0	0	0	0	12	0	27	0
Perch Tower	68	0	12	0	0	0	0	0	0	0	0	0	0
Pickle Pond	8	0	0	0	0	0	0	0	10	0	0	0	0
Picnic Table	0	0	7	0	0	13	0	0	0	0	0	0	0
Pine Creek	79	15	0	49	0	28	0	0	0	0	0	0	0
Poncho	113.1	0	0	357	0	15	0	0	0	0	0	47	0
Ponozzo Lake - S	0	0	75	0	0	0	0	0	0	0	0	0	0
Pothole	27	0	0	0	0	0	0	0	0	0	0	0	15
River Bend	0	0	12	0	0	0	0	0	0	0	0	0	11
Rookery	127	0	0	30	0	0	0	0	0	8	0	28	0
R.J.	77	51	50	87	0	14	0	0	0	30	0	23	0
R.J. #2	31	0	34	0	0	11	0	0	0	0	0	0	0
Santa Fe	28	17	28	132	0	16	0	0	0	0	0	15	0
Section 18	41	79	0	0	3	23	0	0	0	0	17	0	0
Section 28	19	12	142	16	0	0	21	0	0	0	0	0	0
Section 28 - II	0	0	0	0	0	0	8	0	0	0	0	0	0
Sidnaw Branch	230	28	0	14	0	0	0	0	10	0	0	125	31
Silver Bullet	10	28	0	278	0	0	0	0	0	0	0	36	42
Silver Creek	74	39	0	144	0	10	0	0	17	0	0	80	19
Silver Lake	9	8	68	0	0	0	0	0	0	0	0	0	0
Ski Pole	18	0	0	9	0	0	0	10	0	0	0	46	24
Skoglund Creek	111	0	0	39	0	0	0	27	0	0	0	42	158
Slapjack	11	0	0	0	0	0	0	0	15	0	0	0	0
South Dinky	21	10	0	17	0	0	0	0	0	0	0	0	0
Sparkle III	77	29	89	108	0	21	0	13	0	0	0	6	0
Sparkle IV	12	0	0	0	0	0	0	0	0	0	0	0	0
Stambaugh Pit	0	0	68	0	0	0	0	0	0	0	0	0	0
Storm	52	10	0	43	0	0	0	0	0	0	29	10	0
Sudden Lake	16	11	5	118	0	0	0	0	0	0	0	7	0
Sullivan Creek	233	0	0	0	0	0	0	0	0	0	0	0	0
Tenderfoot East	10	0	0	0	0	0	0	0	0	0	0	0	0
Tenderfoot West	0	0	0	0	0	0	0	0	0	0	0	0	0
Tote Creek	70	0	0	0	0	0	0	0	0	0	0	5	0
Tradition Creek	115	0	0	0	0	0	0	0	19	0	0	0	0
U.S. 2	59	0	173	19	0	0	32	0	0	0	0	16	0
Webstur	146	0	0	0	0	0	0	0	17	0	0	0	0
Wellington	32	62	0	82	0	0	0	0	0	0	0	0	0
Whitetail	0	0	0	0	0	0	0	0	0	0	0	0	0
Wildcat	32	47	22	5	0	0	0	0	0	0	0	0	0
Wolf	153	0	17	218	0	0	0	0	0	35	0	131	108

Table 18. (Cont'd.)

Sale Name NAME	Jack Pine JPS	White Pine WPS	N. wh. Cedar CS	Mixed Hdws MHP	Aspen AP	Balsam Fir BFP	Pine PP	Mixed Con. MCP	N. wh. Cedar CP	Spruce SP	Hem-lock HP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Admin	0	0	0	323	4	5	0	0	0	4	0
Adrian Creek	0	0	0	697	0	0	14	0	12	52	62
Aldridge Creek	0	8	0	550	3	0	1	0	0	5	33
Augustine	0	0	0	318	0	20	0	0	0	13	0
Basswood Ridge	0	0	0	1443	194	0	0	4	0	0	0
Big King	0	0	0	691	40	0	0	0	0	1	0
Birch	0	0	0	370	152	39	22	0	0	0	0
Bonifas Creek	0	0	0	564	67	10	0	0	0	6	0
Broken Bridge	0	0	0	980	120	0	0	0	0	18	0
Buck	0	0	0	232	37	0	0	0	0	0	0
Bullseye	0	0	0	322	46	6	0	0	0	0	49
Bullwinkle	0	0	0	565	13	8	0	0	0	10	0
Canyon Falls	0	0	0	267	42	12	0	0	0	6	0
China Road	0	0	0	335	220	15	0	0	0	11	0
Chipmunk	0	0	0	68	0	6	0	0	0	0	0
Clear Lake	0	0	0	628	54	0	0	0	0	14	0
Compartment 85	0	0	0	72	13	0	0	0	0	3	0
Cookout	0	0	0	764	34	0	0	4	0	0	0
Coontail Camp	0	0	0	434	154	0	9	0	0	9	0
Copps Tower	0	0	0	1198	246	0	0	0	0	16	0
County 527	0	0	0	239	73	0	0	0	0	0	0
Coupe	0	0	0	216	15	0	0	0	0	12	0
Curry Lake	0	0	0	280	10	13	0	0	0	0	0
Deer Fly	0	0	0	657	54	164	0	45	0	41	0
Defiance Creek	0	0	0	605	80	0	0	0	0	2	0
Divide	0	0	0	1244	333	0	102	0	0	164	0
Eagle Lake	0	0	0	692	84	52	0	0	0	0	25
East Dolph	0	0	0	470	483	0	0	43	0	0	0
East End	0	0	0	1256	293	0	0	0	0	16	0
East Irish	0	0	25	736	229	117	0	0	109	0	175
East King - S	0	0	0	23	0	0	0	0	0	1	0
East Perch	0	0	0	408	0	0	0	17	0	0	0
East Prickett	0	0	0	685	349	0	19	11	0	0	0
Eastern Divide	0	0	0	530	52	0	0	4	0	0	0
Edna Creek II	0	0	0	173	68	0	0	0	0	0	0
Elbow	0	0	0	401	41	0	0	11	0	0	0
Elmwood North	0	0	0	1662	17	0	0	6	0	0	0
Farce Creek	0	0	0	627	0	0	0	0	0	47	0
Finnegan	0	0	0	1441	705	0	0	0	0	0	0
Fisher Hardwood	0	0	0	31	17	0	0	0	0	0	0
Fisher Lake	0	0	0	1125	147	0	0	0	0	0	0
Fourth Lake	0	0	0	524	78	0	0	0	0	11	0
Gillis	0	0	0	1471	405	0	0	0	0	0	0
Green Beanie	0	0	0	2011	117	0	0	15	0	0	0
Grizzly Bear	0	0	0	1012	527	56	0	0	0	0	22

Table 18. (Cont'd.)

Sale Name NAME	Jack Pine JPS	White Pine WPS	N. wh. Cedar CS	Mixed Hdws MHP	Aspen AP	Balsam Fir BFP	Pine PP	Mixed Con. MCP	N. wh. Cedar CP	Spruce SP	Hem-lock HP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Hartley Landing	0	0	0	283	113	0	0	0	0	13	0
Hartley Landing Resale	0	0	0	169	122	0	0	10	0	0	0
Hayfield	0	0	0	149	51	0	0	0	0	0	0
Haystack	0	0	0	156	13	53	0	0	0	28	0
Hemlock Lake	0	0	0	858	125	0	0	8	0	0	0
Hideout II	0	0	0	473	115	13	0	0	0	9	0
Hilltop 1982	0	0	0	101	4	21	0	0	0	0	0
Hilltop (Clisch)	0	0	0	225	42	0	19	0	0	0	19
Hilltop (Corey)	0	0	0	225	42	0	19	0	0	0	19
Honeysuckle	0	0	0	146	0	0	0	0	0	0	28
Jacknife	0	0	0	853	390	53	0	0	0	24	0
Jackson	0	0	0	1286	103	0	0	0	0	25	0
James Lake	0	0	0	373	28	8	0	0	0	0	0
Jumbo East	0	0	0	898	517	196	163	0	0	73	0
Kallio	0	0	0	955	481	0	0	296	0	0	0
Kenton Heights	0	0	0	436	111	0	27	0	12	23	30
Ketchum Lake	0	0	0	1064	197	0	0	0	0	0	0
Kits Creek	0	0	0	433	34	33	0	0	0	13	0
Knucklehead Salvage - S	0	0	0	109	14	4	0	0	0	0	0
Lambert Creek	0	0	0	347	65	0	0	0	0	0	0
Little Giant	0	0	0	1149	825	0	0	0	0	0	0
Little Giant Hardwoods	0	0	0	175	59	0	0	0	0	37	0
Lone Wolf	0	0	0	583	31	0	0	0	0	0	0
Lower Dam	0	0	13	461	67	70	0	0	27	13	0
Lucky Shot	0	0	0	476	34	0	0	27	0	0	0
L.A.R.	0	0	0	277	153	0	0	11	0	0	0
Madelyn Lake	0	0	0	374	0	18	0	0	0	15	0
Marsh Creek South	0	0	0	539	141	58	0	0	0	13	0
McRae Creek	0	0	0	172	72	0	0	0	0	16	0
Merry Pete	0	0	0	833	20	0	0	5	0	0	0
Mink Lake	0	0	0	380	317	92	0	0	0	8	0
Mitigwaki Creek	0	0	0	712	106	18	11	0	0	13	0
Montombo	0	0	0	1105	389	53	0	0	0	17	56
North Grade	0	0	0	294	61	0	0	0	0	3	0
North McAllister	0	0	0	422	59	0	0	0	0	3	0
Old Farm	0	0	0	715	384	0	0	0	0	4	0
Osprey	0	0	0	1375	627	0	0	0	0	0	0
Otter Lake	0	0	0	1845	102	0	0	0	0	8	0
Paint Springs	0	0	0	873	387	0	0	58	0	0	0
Paw Lake	0	0	0	1015	172	503	73	0	55	114	0
Peckerwood	0	0	0	2076	163	0	0	151	0	0	0
Pelton	0	0	0	1000	38	0	0	0	0	20	0
Pelton West	0	0	0	236	51	0	0	0	0	0	0
Pendleton Creek	0	0	0	597	162	0	0	4	0	9	0
Perch Corner	0	0	0	924	30	0	0	0	0	14	0

Table 18. (Cont'd.)

Sale Name NAME	Jack Pine JPS	White Pine WPS	N. wh. Cedar CS	Mixed Hdws MHP	Aspen AP	Balsam Fir BFP	Pine PP	Mixed Con. MCP	N. wh. Cedar CP	Spruce SP	Hem-lock HP
	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf	Mbf
Perch Lake	0	0	0	1050	61	46	0	0	0	0	0
Perch Tower	0	0	0	130	0	0	0	0	0	0	9
Pickle Pond	0	0	0	468	455	0	0	25	0	0	0
Picnic Table	0	0	0	61	0	0	0	0	0	0	0
Pine Creek	0	0	0	526	95	0	0	0	0	15	0
Poncho	0	0	0	1822	708	0	0	0	0	31	0
Ponozzo Lake - S	0	0	0	43	0	0	0	0	0	0	0
Pothole	0	0	0	962	476	0	0	20	0	0	0
River Bend	0	0	0	100	37	0	61	0	0	0	0
Rookery	0	240	0	583	49	216	31	0	0	17	0
R.J.	0	0	0	452	170	72	0	0	0	12	0
R.J. #2	0	0	0	265	192	7	0	0	0	0	0
Santa Fe	0	0	0	750	622	0	0	0	0	18	0
Section 18	0	0	0	670	0	0	0	0	0	0	51
Section 28	0	0	0	269	38	0	0	0	0	0	0
Section 28 - II	0	0	0	45	18	0	0	0	0	0	0
Sidnaw Branch	0	0	0	738	57	0	14	0	20	51	39
Silver Bullet	104	0	0	1320	458	55	547	0	0	40	0
Silver Creek	0	0	0	399	320	0	0	35	0	33	0
Silver Lake	0	0	0	118	0	0	0	0	0	0	0
Ski Pole	0	0	0	494	10	64	7	0	16	14	17
Skoglund Creek	0	0	0	609	186	0	153	0	0	61	7
Slapjack	0	0	0	517	452	0	0	18	0	0	0
South Dinky	0	0	0	507	50	0	0	0	0	0	0
Sparkle III	0	0	0	519	411	84	0	0	0	16	0
Sparkle IV	0	0	0	648	138	0	0	0	0	0	0
Stambaugh Pit	0	0	0	71	0	0	0	0	0	0	0
Storm	0	0	0	417	146	0	0	0	0	8	78
Sudden Lake	0	0	0	396	244	13	0	0	0	8	0
Sullivan Creek	0	0	0	1603	248	0	0	0	0	0	0
Tenderfoot East	0	0	0	212	177	0	0	0	0	0	0
Tenderfoot West	0	0	0	247	141	0	0	0	0	0	0
Tote Creek	0	0	0	434	0	12	0	0	0	6	10
Tradition Creek	0	0	0	678	392	0	0	9	0	0	0
U.S. 2	0	0	0	302	28	8	0	0	0	6	0
Webster	0	0	0	1283	54	0	0	22	0	9	0
Wellington	0	0	0	771	187	0	0	0	0	0	0
Whitetail	0	0	0	267	35	0	0	0	0	0	0
Wildcat	0	0	0	137	8	0	0	0	0	0	0
Wolf	0	0	0	823	655	335	46	0	40	189	0

Table 19. Ottawa National Forest variable means and standard deviations.

Variable	Mean	Standard Deviation
MONTHS	48.0	15.6
ACRE	378.2	232.7
PU	9.2	5.3
BIDS	2.7	1.9
ADVER	$21.73	$14.50
STUMPAGE	$29.93	$20.31
OVERBID	$8.19	$8.58
VALUE	$33,307	$47,019
FOBVAL	$101.48	$9.47
HAUL	12.6	7.1
SAWh	15.7	7.3
PULPH	12.6	8.3
SPBC$	$5,500	$8,204
SPEC	$4.12	$5.57
TEMP$	$945	$1,015
TEMP	$1.02	$1.14
TEMPM	0.9	1.3
VOLUME	1205.8	845.4
AVGVOL	3.2	1.2
EVOL	288.7	494.9
UNVOL	854.2	675.0
CC	179.5	322.7
OR	26.9	132.6
SHELT	66.8	257.3
SELECT	280.5	474.8
IMP	154.7	440.3
THIN	333.9	434.6
ROAD	11.1	20.2
SALV	1.2	9.0
MIX	59.5	157.1
UNMIX	89.4	221.6
EMIX	4.7	31.6
%EVOL	19.8%	26.7%
%UNVOL	76.4%	29.2%
%CC	12.0%	18.8%
%OR	1.8%	8.5%
%SHELT	4.3%	13.7%
%SELECT	24.8%	36.5%
%IMP	10.2%	23.6%
%THIN	33.2%	36.6%
%ROAD	0.7%	1.3%
%SALV	0.1%	0.8%
%MIX	5.7%	16.3%
%UNMIX	6.5%	15.1%
%EMIX	0.7%	5.8%

Variable	Mean	Standard Deviation
$CC	1.19	1.95
$OR	0.18	0.70
$SHELT	0.40	1.26
$SELECT	2.05	3.28
$IMP	1.05	2.82
$THIN	2.79	3.44
$ROAD	0.62	1.03
$SALV	0.01	0.09
$MIX	0.33	0.83
$UNMIX	0.50	1.16
$EMIX	0.04	0.23
MHS	10.2	20.7
RMS	18.3	27.8
SMS	190.2	196.7
YBS	47.5	61.1
BAS	13.4	38.2
ES	24.5	51.1
AS	36.9	63.5
RO	0.0	0.3
ASH	3.3	11.6
BC	1.7	6.5
PBS	1.4	5.5
MCS	4.3	15.3
BFS	1.9	10.3
HS	1.3	8.3
SS	16.2	29.4
RWS	6.7	27.2
JPS	0.8	9.1
WPS	1.9	21.0
CS	0.3	2.5
MHP	613.9	448.7
AP	154.3	152.5
BFP	20.6	61.9
PP	10.2	52.7
MCP	6.7	30.0
CP	2.2	11.6
SP	11.5	26.3
HP	5.5	19.9

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