# Effect of the Federal Estate Tax on Nonindustrial Private Forest Holdings

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Data for this study were collected using a questionnaire mailed to randomly selected members of two forest owner organizations. Among the key findings is that 38% of forest estates owed federal estate tax, a rate many times higher than US estates in general. In 28% of the cases where estate tax was due, timber or land was sold because other assets were not adequate. In 29% of the cases where land was sold, it was converted to a more developed use. Questionnaires also were mailed to randomly selected individuals from a national database of rural landowners for comparison with forest owners. For most of the characteristics surveyed, there was no statistical difference between responses from the two groups.

Keywords: nonindustrial private forests, estate tax, forest conversion, Dillman Total Design Method

uring the past 10 years, demographic, social, and market trends converged to increase the effect of the federal estate tax on the estates of nonindustrial private forest owners and other rural landowners (see Figure 1 for a description of the tax). The number and percentage of estates in general that owe federal estate tax increased sharply (Herman 2001). Urban expansion (Cordell and Macie 2002) and gentrification of the areas surrounding cities (Moffat and Greene 2002) drove up rural land values. Increased stumpage prices (Morrow and Fritschi 1997) also drove up the timber component of forestland value.

At the same time, many forest owners, unaware of the full value of their holdings, failed to take advantage of estate planning opportunities available to them (Peters et al. 1998); and the stringent requirements for "special use" valuation—which permits assets used for farming or in a trade or business, including timber production, to be appraised for estate tax purposes according to their value in use rather than their highest and best use—made it difficult for managed forests to qualify for or remain under the provision (Haney and Siegel 1993).

Little information is available on the magnitude of the effect. A handful of case studies have used hypothetical forest holdings to investigate aspects of the transfer of forestland from one generation to another: the size of a forest that can be transferred without incurring the estate tax (Sutherland 1978), the effect of the estate tax on returns to forest management (Sutherland and Tedder 1979), the effect of using "special use" valuation on the net value of a forest estate (Gardner et al. 1984), the effect of form of forest ownership and assets used to pay the estate tax on returns from the forest (Howard 1985), and the interaction between federal and state death taxes (Walden et al. 1987, Peters et al. 1998).

Additionally, there have been two em-

pirical studies of large forest estates, one in the South, to determine whether estates over 3,500 ac needed to liquidate forest assets to pay the federal estate tax (Lucas 1963), and one in the Northeast, to determine whether the estate tax figured in landowners' decisions to sell parcels over 500 ac (Northern Forest Lands Council 1994).

The Forest and Wildlife Research Center of Mississippi State University and the Forest Law and Economics Research Unit of the USDA Forest Service, Southern Research Station, cooperated in this study to gauge the effect of the federal estate tax on nonindustrial private forest holdings and compare it with that for other rural landholdings. The study represents the first effort of its kind to quantify the effect of the federal estate tax on forest holdings.

#### **Methods**

Data for the study were collected by means of a mailed questionnaire, using the Dillman (1978) Total Design Method. Questionnaire recipients received a first mailing with a cover letter from the cooperating organization endorsing the study and encouraging them to respond. Recipients who did not respond within 2 weeks of the initial mailing received a postcard reminder. Those who did not respond within 2 weeks of the reminder received another reminder with a second copy of the questionnaire.

The questionnaire itself consisted of 16 questions. Recipients were first asked whether they had been involved in the trans-

#### The Federal Estate Tax

During the years surveyed in this study, the federal estate and gift taxes were combined into a single, unified tax on transfers of wealth. Lifetime gifts up to \$10,000 per recipient per year – \$20,000 per recipient per year for "split gifts" given jointly by married couples – were excluded from the tax. Following death, deductions from a decedent's estate were permitted for transfers to a surviving spouse, charitable gifts, payment of debts, and funeral and administrative expenses. As well, a "unified credit" shielded large lifetime gifts and estates up to a total of \$600,000 in value from tax. Large gifts and estates over \$600,000 in value were taxed at rates that increased sharply, from 37 percent on amounts up to \$750,000 to 55 percent on amounts over \$3 million.

The Taxpayer Relief Act of 1997 scheduled a series of increases in the amount shielded by the unified credit, to \$1 million in 2006. The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA), however, short-circuited the schedule, separated the gift and estate taxes, and established a separate effective exemption amount for each. The effective exemption amount for gifts shields lifetime gifts up to a total of \$1 million, beginning in 2002. The effective exemption amount for estates will increase in steps from \$1 million beginning in 2002 to \$3.5 million beginning in 2009. The two are not entirely separate, however. The effective exemption amount for estates is reduced by any portion of the effective exemption amount for gifts that a decedent used during his or her lifetime. EGTRRA also effects a gradual decrease in the top rate for federal estate and gift taxes, from 55 percent to 45 percent by 2009. Beginning in 2010, it eliminates the estate tax entirely and sets the top tax rate for gifts equal to the top individual income tax rate. But EGTRRA itself is scheduled to sunset at the end of 2010, returning estate and gift taxes to prior law.

Figure 1. Summary of federal estate tax provisions, during the study period and now.

fer of an estate between 1987 and 1997, a period when the unified credit shielded a constant \$600,000 of estate value from the federal estate tax. Those who had were asked a series of multiple-response questions about the characteristics of the estate, whether "special use" valuation had been used, and the assets used to pay any federal estate tax due.

The questionnaire was pretested in July 1998, using a 100% survey of individual members of the Mississippi Forestry Association. After the pretest, random samples were surveyed from three national groups of landowners, beginning in February 1999:

• Members of the National Woodland Owners Association.

• Members of the American Tree Farm System.

• Rural landowners nationwide, from a database developed by J.D. Esseks, Northern Illinois University.

Usable responses were received from 755 of the 1,273 National Woodland Owner Association members surveyed, 461 of the 1,380 American Tree Farm System members, and 671 of the 3,077 other rural landowners, for an overall response rate of 33%.

Chi-square tests at the  $\alpha = 0.05$  level of significance were used to test for differences between the responses from members of the two forest owner organizations. No differences were found except for the responses regarding location of the land and value of the gross taxable estate. No meaningful way was found to stratify the responses on location of the land. Stratifying the responses on value of the gross taxable estate by region (North, South, and West) accounted for the difference between organizations. Accordingly, the responses for the two organizations were combined, with the results for location of the land omitted and those for value of the gross taxable estate cast by region.

For key questions, the number of nonindustrial private forest holdings affected was estimated by multiplying the percent of positive responses times Birch's (1996) estimate of the number of "individual" and "other" private forest ownership units in the United States. The number of acres affected was estimated by multiplying that figure times the mean acreage figure for the question. Finally, chi-square tests were used to test for differences between the responses from forest owners and other rural landowners.

Compared with nonindustrial private forest owners in general, members of forest organizations tend to be older and own more acres of forest, are less likely to be blue collar workers, and more likely hold their forestland primarily for timber production (Greene et al. 2004). To the extent that these differences affect the value of organization members' gross taxable estate, the results of this study may not be entirely representative of nonindustrial forest owners in general.

#### Results

*Characteristics of Forest Estates.* During the survey period, 9% of forest owner respondents had been involved in the transfer of an estate (Table 1a). Expanding this finding, an estimated 77,200 transfers of forest estates occur each year throughout the United States.

Among the respondents who had been involved in the transfer of an estate, 84% were family members of the decedent. The remaining 16% were friends, business associates, or professionals who had served the decedent (Table 1b). Some 49% of the estates were held in individual ownership by the decedent, with another 27% held jointly with other individuals. The remaining estates were held in partnerships, corporations, and other forms of business, such as a Family Limited Partnership or Limited Liability Corporation (Table 1c).

In all three regions, the value of the decedents' gross taxable estates ranged from below the \$600,000 unified credit amount to over \$3,000,000 (Table 1, d–f). Average estate value was substantially higher in the West, however, than in the North or South.

The total area of forest estates ranged from 10 to 20,000 ac with a mean of 1,225 ac and a median of 200 ac. Typically, most of the land in forest estates was in forest, with little or no cropland or grazing land (Table 1, g–j). The forest area of the estates ranged from 8 to 20,000 ac, with a mean of

#### Table 1. Characteristics of the estates of forest owners and other rural landowners.

| Number         Percent         Number         Percent           a. Involved in the transfer of an estate"         671         671           Number responding         1,216         91,3         578         86,1           Yes         1,216         91,3         578         86,1           Number responding         106         -         89         -           Friend or busines associate         9         85         84,2         84         94,4           Number responding         105         -         93         -         -           Number responding         105         -         93         -         -           Individual         51         48,6         54         58,1         1         1           Correor of wreiges translue estre—North <sup>6,4</sup> 7         6,7         8         86,8           Other (e.g., FLP, LLC) <sup>4'</sup> 7         6,7         8         86,2         1         2,11           Number responding         22         5,2,4         34         7,1,23         500,000         22         5,2,4         85         32,000,000         2,99,999         2         4,8         1,2,1         2,4         1,4         1,4         1,4 </th <th></th> <th colspan="2">Forest owners</th> <th colspan="2">Other rural owners</th>   |   | Forest owners |              | Other rural owners |         |
|---|---|---------------|--------------|--------------------|---------|
| a Involved in the transfer of an estate" Number responding 1,216 — 671 — 671 Verses 0. 1,110 91,3 578 86,1 193 b. Relationship to the decedent" Verses 0. 106 8.7 93 13.9 b. Relationship to the decedent of the transfer of a build or buil   |   | Number        | Percent      | Number             | Percent |
| Number responding       1.216       —       671       —         No       1.10       9.1, 3       578       86.1         Number responding       101       —       89       4         Family member       85       84.2       84       94         Friend or business associate       9       8.9       4       4.5         Professional (decedent a client)       7       6.9       1       1.1         c. Form of ownership in which land was held*       0.5       93       4       4.5         Number responding       105       —       93       —       1.6         Oright of decedent*       7       6.7       28.0       0.6       1.1       1.0  | a Involved in the transfer of an estate <sup><math>a</math></sup>     |               |              |                    |         |
| No         1.110         91.3         578         86.1           Yes         106         8.7         93         13.9           b. Relationship to the decedent <sup>*</sup> 0         -         9         -           Number responding         101         -         89         44         453           Professional (decedent a client)         7         6.9         1         1.1           Corrent of winshes associate         9         89         44         453           Individual         13         48.6         54         28.0           Corrent of winshe associate         7         7.6         2         2.0           Partnership         11         10.5         1         1.1           Opportation FIP, LLCy <sup>d</sup> 7         7.7         4         8.6           Value of the grost stable estate—North <sup>A,e</sup> 7.2         3.6         7.4         8.5           Sto00,000 or more         4         9.5         1         2.1         3.2         5.0         1         2.1           Sto00,000-099,999         2         4.8         1         2.1         1         2.1           Sto00,000-099,999         3         1.4.3 <t< td=""><td>Number responding</td><td>1,216</td><td></td><td>671</td><td>_</td></t<>  | Number responding   | 1,216         |              | 671                | _       |
| Yes         106         8.7         93         13.9           b. Relationship to the decedent <sup>4</sup>  | No  | 1,110         | 91.3         | 578                | 86.1    |
| b. Relationship to the decedent"<br>Number responding 10 — 89 — 44<br>Friend or busines associate 9 8.9 4 4.53<br>Professional (decedent a client) 7 6.9 1 1.1<br>. Crom of owneship in which land was held <sup>6</sup><br>— Number responding 105 — 48.6 34 58.1<br>professional (decedent a client) 7 6.9 1 1.1<br>. Comportation of the second s   | Yes   | 106           | 8.7          | 93                 | 13.9    |
| Number responding       101        89          Family member       83       84.2       84       94.4         Professional (decedent a client)       7       6.9       1       1.1         Corn of ownership in which land was held"       0   | b. Relationship to the decedent <sup><math>\nu</math></sup>           | 101           |              | 00                 |         |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | Number responding<br>Family member                                    | 101           | 84.2         | 89                 | 94.4    |
| $\begin{array}{cccc} \mbox{Professional (decedent a client)} & 7 & 6.9 & 1 & 1.1 \\ \mbox{Commership in which land was held*} & 105 & & 93 & \\ \mbox{Partnership} & 11 & 0.5 & 2 & 8.0 \\ \mbox{Partnership} & 11 & 0.5 & 2 & 8.0 \\ \mbox{Partnership} & 11 & 0.5 & 2 & 8.0 \\ \mbox{Partnership} & 11 & 0.5 & 2 & 8.0 \\ \mbox{Partnership} & 11 & 0.5 & 2 & 8.0 \\ \mbox{Partnership} & 11 & 0.5 & 2 & 8.0 \\ \mbox{Partnership} & 11 & 0.5 & 2 & 8.0 \\ \mbox{Partnership} & 11 & 0.5 & 2 & 8.0 \\ \mbox{Other} (z, FIP, LLC)^d & 7 & 6.7 & 8 & 8.6 \\ \mbox{Value of the grost trabele estate—North^{\delta_c}} & - & - & - \\ Less than $500,000 & 22 & 52.4 & 34 & 72.3 \\ \mbox{$500,000-2.999,999 & 2 & 4.8 & 1 & 2.1 \\ \mbox{$500,000-2.999,999 & 2 & 4.8 & 1 & 2.1 \\ \mbox{$500,000-2.999,999 & 2 & 4.8 & 1 & 2.1 \\ \mbox{$500,000-0.999,999 & 2 & 4.8 & 1 & 2.1 \\ \mbox{$500,000-0.999,999 & 5 & 14.3 & 0 & 0.0 \\ \mbox{$500,000-2.999,999 & 5 & 14.3 & 0 & 0.0 \\ \mbox{$500,000-2.999,999 & 5 & 14.3 & 0 & 0.0 \\ \mbox{$500,000-2.999,999 & 5 & 14.3 & 0 & 0.0 \\ \mbox{$500,000-2.999,999 & 5 & 14.3 & 0 & 0.0 \\ \mbox{$500,000-2.999,999 & 5 & 14.3 & 0 & 0.0 \\ \mbox{$500,000-2.999,999 & 5 & 12.2 & 0 & 0.0 \\ \mbox{$500,000-2.999,999 & 6 & 27.3 & 1 & 8.3 \\ \mbox{$500,000 or more & 2 & - & 12 & - \\ \mbox{Less than $500,000 or more & 2 & - & 12 & - \\ \mbox{Less than $500,000 or more & 3 & 13.6 & 2 & 16.7 \\ \mbox{$500,000-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & 22.7 & 3 & 25.0 \\ \mbox{$50,000,0-2.999,999 & 5 & $  | Friend or business associate  | 9             | 8.9          | 4                  | 4.5     |
| c. Form of ownership in which land was held?<br>Number responding 105 — 93 —<br>Individual 51 48.6 54 58.1<br>Joint 28 26.7 26 28.0<br>Partnership 111 10.5 1 1.1<br>Corporation 8 7.6 4 4.3<br>Other (e.g., FLP, LLC)" 7 6.7 8 8.6<br>(, Value of the gross taxable estate—North <sup>6,c</sup><br>Number responding 42 — 47 —<br>Less than 5600,000 22 52.4 34 72.3<br>\$5000,000-2999,999 10 23.8 7 14.9<br>\$1,000,000-1,999,999 4 9.5 4 8.5<br>\$2,000,000-2,999,999 4 9.5 1 2.1<br>Number responding 35 — 23 —<br>Less than 5600,000 21 60.0 17 73.9<br>\$5000,000-2,999,999 4 11.4 4 77.4<br>\$1,000,000-1,999,999 5 14.3 0 0.0<br>\$2,000,000-2,999,999 1 2.9 0.0<br>\$3,000,000 or more 4 11.4 2 8.7<br>[Number responding 22 — 12 —<br>Less than \$600,000 4 11.4 6 17.4<br>\$1,000,000-1,999,999 5 2.4.3 0 0.0<br>\$3,000,000 or more 4 18.2 6 50.0<br>\$3,000,000 or more 3 13.6 2 16.7<br>[Number responding 22 — 12 —<br>Less than \$600,000 4 18.2 6 50.0<br>\$3,000,000 or more 3 13.6 2 16.7<br>[Number responding 103 — 81 —<br>0.0<br>\$3,000,000 or more 3 13.6 2 16.7<br>[S Total area <sup>6</sup><br>Number responding 103 — 81 —<br>0.0<br>\$3,000,000 or more 38 36.9 16 19.8<br>\$1,000,000-1,999,999 5 2.2.7 3 25.0<br>0.0<br>\$3,000,000 or more 3 13.0 1 23 28.4<br>100-499 ac 24 23.3 23 28.4<br>100-499 ac 24 23.3 23 28.4<br>100-499 ac 38 36.9 16 19.8<br>\$100 4.00 1.2 3.28.4<br>100 -499 ac 38 36.9 16 19.8<br>\$100 4.00 58 77.16 19.8<br>\$100 4.00 4.8 2.7 26.2 0.0<br>Number responding 103 — 81 —<br>0 ac 6 69 67.0 22 27.2<br>1-99 ac 12.3 28.4<br>100 4.99 ac 7 6.8 23 2  | Professional (decedent a client)                                      | 7             | 6.9          | 1                  | 1.1     |
| Number responding         105         —         93         —           Individual         51         48.6         54         58.1           Joint         28         26.7         26         28.0           Partnership         11         10.5         1         1.1           Corporation         8         7.6         4         4.3           Other (e.g., FLP, LLC)'         7         6.7         8         8.6           due of the grost stable estate—North <sup>&amp;,e</sup> 7         1.43         9         7         1.43           St000,000-2999,999         10         2.3         7         1.49         81.000,000-2999,999         2         4.8         1         2.11           St000,000-2999,999         2         1.60.0         17         7.39         5         1.43         0         0.0           St000,000-2999,999         4         11.4         2         8.7         1.44         2         8.7           St000,000-2999,999         5         24.3         0         0.0         0.0         3.0         0.00         0.0         3.0         0.00         0.0         3.0         0.00         0.0         3.0         3.0         0.0  | c. Form of ownership in which land was held <sup><math>b</math></sup> |               |              |                    |         |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $  | Number responding   | 105           |              | 93                 |         |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $  | Individual  | 51            | 48.6         | 54                 | 58.1    |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | Joint<br>Partnership  | 20            | 20.7         | 20                 | 28.0    |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $  | Corporation   | 8             | 7.6          | 4                  | 4.3     |
| d. Value of the gross taxable estate—North $^{h,e}$<br>Number responding 42 — 47 — 47 — 14.9<br>\$1,000.000 -1.999.999 44 9.5 44 8.5<br>\$2,000.000 -2.999.999 4 9.5 4 8.5<br>\$2,000.000 or more 4 9.5 1 2.1<br>\$3,000.000 or more 7 4 9.5 1 2.1<br>where gross taxable estate—South $^{h,e}$<br>Number responding 7 — 23 — 125<br>\$3,000.000 or more 4 11.4 4 17.4<br>\$1,000.000-1.999.999 5 14.3 0 0.0<br>\$3,000.000 or more 4 11.4 2 8.7<br>[Value of the gross taxable estate—West $^{h,e}$<br>Number responding 22 — 12 — 12<br>Less than \$600.000 299.999 6 22.7 3 25.0<br>\$3,000.000 or more 7 3 1.8 3.0<br>\$3,000.000 or more 7 3 1.3 6.2 16.7<br>\$3,000.000 or more 7 3 1.3 6.2 2.7 7 3 25.0<br>\$3,000.000 or more 7 3 1.3 6.2 2.7 7 3 25.0<br>\$3,000.000 or more 7 3 1.3 6.2 2.7 7 3 25.0<br>\$3,000.000 or more 7 3 1.3 6.2 2.7 7 3 25.0<br>\$3,000.000 or more 7 3 1.3 6.2 2.7 7 3 25.0<br>\$3,000.000 or more 7 3 1.3 6.2 2.7 7 3 25.0<br>\$3,000.000 or more 7 3 1.3 6.2 16.7<br>\$3,000.000 or more 7 3 1.3 6.2 2.7 7 3 25.0<br>\$3,000.000 or more 7 3 1.3 6.1 7.5 8 12.5<br>Number responding 10.3 — 81 — 0<br>0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0   | Other (e.g., FLP, LLC) <sup><math>d</math></sup>                      | 7             | 6.7          | 8                  | 8.6     |
| Number responding       42        47          Less than \$600,000       22 $52.4$ $34$ $72.3$ \$600,000999,999       10 $23.8$ 7 $14.9$ $51,000,000299,999       2       4.8       1       2.1 53,000,000 or more       4       9.5       1       2.1 e value of the gross taxable estate—South6,c       -       23       -         Number responding       35       -       23       -         Less than $600,000       21       60.0 17 73.9 5(0,000-2,999,999)       4       11.4       4       17.4 5(0,000-2,999,999)       1       2.9       0       0.0 53,000,000       res taxable estate—West6,c       -       12.       -         Number responding       22.7       3       25.0 0.00 50,00,000-2,999,999       5       22.7       3       25.0 500,000-2,999,999       5       22.7 3 25.0 500,000-2,999,999       4       18.2 0 0.0 500,000-2,999,999<$  | d. Value of the gross taxable estate—North <sup>b,c</sup>             |               |              |                    |         |
| Less than \$600,000       22       52.4       34       72.3         \$600,000-2999,999       4       9.5       4       8.5         \$2,000,000 or more       4       9.5       4       8.5         Value of the gross taxable estate—South <sup>h.c</sup> 4       9.5       4       8.5         Value of the gross taxable estate—South <sup>h.c</sup> -       23.       -       -         Less than \$600,000       21       60.0       17       7.39         \$600,000-2999,999       5       14.3       0       0.0         \$5,000,000-2999,999       5       14.3       0       0.0         \$5,000,000-2999,999       5       14.3       0       0.0         \$5,000,000-2,999,999       6       22.7       3       25.0         Yalue of the gross taxable estate—West <sup>6, e</sup> -       -       1.6       5.0         Number responding       22       -       12       -       -       -       -         Number responding       103       -       81       -       0       -       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       1.6       -       1.6  | Number responding   | 42            |              | 47                 |         |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | Less than \$600,000   | 22            | 52.4         | 34<br>7            | /2.3    |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | \$000,000-999,999   | 10            | 23.8         | 4                  | 14.9    |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | \$2,000,000-2,999,999   | 2             | 4.8          | 1                  | 2.1     |
| e. Value of the gross taxable estate—South <sup>b,c</sup><br>Number responding 35 — 23 — 23 — 23 $-$<br>Less than \$600,000 = 399,399 4 11.4 4 17.4 $+$<br>\$1,000,000 = 1,399,399 5 14.3 0 0.0 $+$<br>\$3,000,000 = 1,399,399 1 2.9 0 0.0 $+$<br>\$3,000,000 or more 4 11.4 2 8.7 $+$<br>Number responding 22 — 12 — 12 — 12 $-$<br>Less than \$600,000 4 18.2 6 50.0 $+$<br>\$1,000,000 - 1,399,399 6 2.7.3 1 8.3 $+$<br>\$1,000,000 - 1,399,399 6 2.7.3 1 8.3 $+$<br>\$1,000,000 - 1,399,399 4 18.2 0 0.0 $+$<br>\$3,000,000 or more 3 1 30.1 23 28.4 $+$<br>Number responding 103 — 81 — 0 $+$<br>+ O ac 0 0 0.0 58 71.6 158 26.2 16.7 $+Number responding 103 — 81 — 0 ++$ Forest area <sup>4</sup> 7 7 26.2 0 0.0 $+Number responding 103 — 81 — 0 ++$ O ac 0 0 0.0 58 71.6 19.8 $++$ Forest area <sup>4</sup> 7 7 26.2 10 0.0 $++$ Number responding 103 — 81 — 0 $++$ O ac 2 0 0.0 $+$ 57.0 22 27.2 $+$ 29 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 100 $-$ 499 $+$ 25 24.3 26 32.1 $+$ 29 $+$ 20 $+$ 21 25.9 $+$ 21 25.9 $+$ 21 25.9 $+$ 25 24.3 26 32.1 $+$ 25 $+$ 26 $+$ 27 26.2 21 25.9 $+$ 25 24.3 $+$ 26 $+$ 25 $+$ 26 $+$ 26 $+$ 27 26.2 21 25.9 $+$ 25 $+$ 26.2 21 25.9 $+$ 25 $+$ 26.2 21 25.9 $+$ 25 $+$ 26.2 $+$ 21 25.9 $+$ 25 $+$ 26.2 $+$ 21 25.9 $+$ 25 $+$ 26.2 $+$ 21 25.9 $+$ 25 $+$ 26.2 $+$ 21 25.9 $+$ 25 $+$ 26.2 $+$ 21 25.9 $+$ 25.9 $+$ 26.2 $+$ 27 26.2 $+$ 21 25.9 $+$ 25.9 $+$ 26.2 $+$ 27 26.2 $+$ 28.9 $+$ 25.9 $+$ 26.9 $+$ 26.9 $+$ 26.9 $+$ 26.9 $+$ 26.9 $+$ 27 $+$ 26.2 $+$ 27 $+$ 26.2 $+$ 28.9 $+$ 20   | \$3,000,000 or more   | 4             | 9.5          | 1                  | 2.1     |
| Number responding       35       —       23       —         Less than \$600,000       21       60.0       17       75.9         \$600,000999,999       4       11.4       4       17.4         \$1,000,0001999,999       5       14.3       0       0.0         \$2,000,0002999,999       1       2.9       0       0.0         \$3,000,000 or more       4       11.4       2       8.7         Number responding       22       —       12       —         Less than \$600,000       4       18.2       6       50.0         \$5,000,0002999,999       5       22.7       3       25.0         \$2,000,0002999,999       5       22.7       3       25.0         \$2,000,0002999,999       5       22.7       3       25.0         \$2,000,0002999,999       5       23.3       23.0       28.4         Number responding       03       —       81       —       0.0         9 ac       24       23.3       23       28.4       100-499 ac       38       36.9       16       18.8         100-499 ac       38       36.9       16       18.8       1.6       1.9  | e. Value of the gross taxable estate—South <sup><i>b,c</i></sup>      |               |              |                    |         |
| Less than \$600,000       21 $60.0$ $17$ $73.9$ $8600,000-999,999$ 5 $14.3$ 0 $0.0$ $82,000,000-2,999,999$ 1 $2.9$ 0 $0.0$ $83,000,000$ or more       4 $11.4$ 2 $8.7$ f. Value of the gross taxable estate—West <sup>6,e</sup> 4 $11.4$ 2 $8.7$ Rumber responding       22       — $12$ — $12$ —         Less than \$600,000       4 $18.2$ 6 $50.0$ $50.000-999,999$ 5 $22.7$ $3$ $25.0$ $8500,000-2,999,999$ 5 $22.7$ $3$ $25.0$ $0.0$ $53.000,000 - 3.999,999$ $4$ $18.2$ $0$ $0.0$ $83,000,000 or more$ $3$ $13.6$ $2$ $16.7$ $16.7$ $73$ $18.7$ $-0.0$ $0.0$  | Number responding   | 35            |              | 23                 |         |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | Less than \$600,000   | 21            | 60.0         | 17                 | 73.9    |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | \$600,000-999,999   | 4             | 11.4         | 4                  | 1/.4    |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | \$2,000,000-2,999,999   | 1             | 2.9          | 0                  | 0.0     |
| f. Value of the gross taxable estate—West <sup>4,c</sup><br>Number responding 22 — 12 — 12 — 12 Less than \$600,000 4 18.2 6 50.0 \$600,000-999,999 5 22.7 3 25.0 \$2,000,000-1,999,999 5 22.7 3 25.0 \$2,000,000-2,999,999 4 18.2 0 0.0 \$3,000,000 or more 3 13.6 2 16.7 US 18.2 0 0.0 $3,000,000$ rome 3 13.6 2 16.7 US 18.2 0 0.0 $3,000,000$ rome 3 13.6 2 16.7 US 18.2 0 0.0 0 $3,000,000$ rome 3 13.6 2 16.7 US 18.2 0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | \$3,000,000 or more   | 4             | 11.4         | 2                  | 8.7     |
| Number responding       22       —       12       —         Less than \$600,000       4       18.2       6       50.0         \$600,000-999,999       5       22.7       3       25.0         \$2,000,000-2,999,999       4       18.2       0       0.0         \$3,000,000 or more       3       13.6       2       16.7         g. Total area <sup>d</sup> 0       0       0       0.0       0       0.0         In-99 ac       24       23.3       23       28.4       100-499 ac       24       23.3       23.2       28.4         100-499 ac       24       23.3       23.4       28.4       100-499 ac       28.4       100-499 ac       38       36.9       16       19.8         100 ac       0 ono       58       71.6       19.8       100-499 ac       38       36.9       7       8.6         500 ac or more       27       26.2       0       0.00       0.0       19.8       100-499 ac       27       26.2       0       0.0       12.3       100-499 ac       25       24.3       26       32.1       100       12.3       100-499 ac       2       1.9       10       12.3       12.3   | f. Value of the gross taxable estate—West <sup>b,c</sup>              |               |              |                    |         |
| Less than \$600,000       4       18.2       6       500.0         \$600,000-999,999       6       27.3       1       8.3         \$2,000,000-1,999,999       4       18.2       0       0.0         \$3,000,000 or more       3       13.6       2       16.7         g. Total area <sup>6</sup> 0       0       0       0       0       0         y. Total area <sup>6</sup> 0       0.0       0       0       0       0       0         100-499 ac       24       23.3       23       28.4       100-499 ac       28.4       46.6       35       43.2         500 ac or more       31       30.1       23       28.4       10.4       16.7       16.7       19.8         Number responding       103       -       81       -       0       ac       16.7       19.8       10.1       23       28.4         Number responding       103       -       81       -       0       ac       16.9       19.8       10.9       10.9       16       19.8       10.9       16       19.8       10.9       16       19.8       10.4       16       19.8       10.2       27.2       26.2       0 <td>Number responding</td> <td>22</td> <td></td> <td>12</td> <td></td>   | Number responding   | 22            |              | 12                 |         |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | Less than \$600,000<br>\$600,000,000,000                              | 4             | 18.2         | 6                  | 50.0    |
| \$2,000,000-2,999,999       4       18.2       0       0.0         \$3,000,000 or more       3       13.6       2       16.7         g. Total area <sup>6</sup> 0       0.0       0       0.0       0       0.0         Number responding       103       -       81       -       0       0       0       0       0.0       0       0.0         1-99 ac       24       23.3       23       28.4       100-499 ac       28.4       46.6       35       43.2       20.0       0.0       0       0.0  | \$1.000.000-1.999.999   | 5             | 27.5         | 3                  | 25.0    |
| S3,000,000 or more       3       13.6       2       16.7         g. Total area <sup>b</sup>   | \$2,000,000-2,999,999   | 4             | 18.2         | 0                  | 0.0     |
| g. Total area"<br>Number responding<br>0 ac<br>0 ac<br>0 ac<br>0 ac<br>1-99 ac<br>100–499 ac<br>100–499 ac<br>100–499 ac<br>100–499 ac<br>100–499 ac<br>101 23 28.4<br>h. Forest area"<br>Number responding<br>103 — 81<br>- 0 ac<br>0 0 0.0 58 71.6<br>1–99 ac<br>100–499 ac<br>100–490 ac<br>100–490 —<br>100–490 ac<br>100–490 ac<br>1   | \$3,000,000 or more   | 3             | 13.6         | 2                  | 16.7    |
| Number responding       103       —       81       —         0 ac       0       0.0       0       0.00         1-99 ac       24       23.3       23       28.4         100-499 ac       48       46.6       35       43.2         500 ac or more       31       30.1       23       28.4         h. Forest area"       —       81       —         Number responding       103       —       81       —         0 ac       0       0.0       58       71.6         1-99 ac       38       36.9       16       19.8         100-499 ac       38       36.9       7       8.6         500 ac or more       27       26.2       0       0.0         i. Cropland area"       —       —       9       2       27.2         Number responding       103       —       81       —       —         0 ac       69       67.0       22       27.2       2       2       2       2       2       2       2       2       2       2       2       2       3       2       8.4       500 ac or more       2       1.9       10  | g. Total area <sup>®</sup>  | 102           |              | 0.1                |         |
| 1-99  ac $24$ $23.3$ $23$ $28.4$ $100-499  ac$ $48$ $46.6$ $35$ $43.2$ $500  ac or more$ $31$ $30.1$ $23$ $28.4$ h. Forest area" $0$ $0.0$ $58$ $71.6$ $1-99  ac$ $0$ $0.0$ $58$ $71.6$ $1-99  ac$ $38$ $36.9$ $7$ $8.6$ $500  ac or more$ $27$ $26.2$ $0$ $0.0$ i. Cropland area"       Number responding $103$ — $81$ — $0  ac$ $69$ $67.0$ $22$ $27.9$ $26.2$ $27.2$ $27.2$ $27.9$ $26.2$ $27.2$ $27.9$ $26.2$ $27.2$ $25.9$ $100-499  ac$ $76.8$ $23.2$ $39.5$ $10.5$ <   | Number responding   | 103           |              | 81                 |         |
| $\begin{array}{cccccccccccccccccccccccccccccccccccc$  | 1_99 ac   | 24            | 23.3         | 23                 | 28.4    |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | 100–499 ac  | 48            | 46.6         | 35                 | 43.2    |
| h. Forest area"<br>Number responding<br>0 ac<br>1-99 ac<br>100–499 ac<br>100–499 ac<br>100–499 ac<br>100–499 ac<br>100–499 ac<br>100–499 ac<br>100–499 ac<br>103 — 81<br>100–499 ac<br>109 — 113<br>16.0<br>109 4<br>109 4<br>109 4<br>109 4<br>100 4<br>109 5<br>109 ac<br>109 3<br>109 4<br>109 4<br>10                               | 500 ac or more  | 31            | 30.1         | 23                 | 28.4    |
| Number responding103—81—0 ac00.05871.61-99 ac3836.91619.8100-499 ac3836.978.6500 ac or more2726.200.0i. Cropland area"0-81—Number responding103—81-0 ac6967.02227.21-99 ac2524.32632.1100-499 ac76.82328.4500 ac or more21.91012.3j. Grazing area (pasture and range)"103—81—Number responding103—81—0 ac6260.23239.51-99 ac109.71316.0500 ac or more43.91518.5k. Professional helped in estate planning <sup>b</sup> ———Number responding104—90—Yes6764.46471.1No3432.72628.9Don't know32.900.0I. Professional help reduced the tax due"67—64Number responding67—64—Number responding67—64—Number responding67—64—Number responding67—64—No2131.38   | h. Forest area <sup>a</sup>   |               |              |                    |         |
| 0 ac       0       0.0       38       71.6         1-99 ac       38       36.9       16       19.8         100-499 ac       38       36.9       7       8.6         500 ac or more       27       26.2       0       0.0         i. Cropland area"       0       69       67.0       22       27.2         1-99 ac       69       67.0       22       27.2       27.2         1-99 ac       25       24.3       26       32.1         100-499 ac       7       6.8       23       28.4         500 ac or more       2       1.9       10       12.3         j. Grazing area (pasture and range)"       Number responding       103       —       81       —         Number responding       103       —       81       —       —         0 ac       62       60.2       32       39.5       1         109 ac       10       9.7       13       16.0         500 ac or more       4       3.9       15       18.5         k. Professional helped in estate planning <sup>b</sup> —       —       —         Number responding       104       —       90  | Number responding   | 103           |              | 81                 | 71 (    |
| 100-499 ac       38       36.9       7       8.6         500 ac or more       27       26.2       0       0.0         i. Cropland area"       0       69       67.0       22       27.2         1-99 ac       25       24.3       26       32.1         100-499 ac       25       24.3       26       32.1         100-499 ac       7       6.8       23       28.4         500 ac or more       2       1.9       10       12.3         j. Grazing area (pasture and range)"       103       -       81       -         Number responding       103       -       81       -         0 ac       100-499 ac       2       1.9       10       12.3         j. Grazing area (pasture and range)"       103       -       81       -         Number responding       103       -       81       -         0 ac       62       60.2       32       39.5       1-         100-499 ac       10       9.7       13       16.0         500 ac or more       4       3.9       15       18.5         k. Professional helped in estate planning <sup>b</sup> -       -       -  | 0 ac  | 38            | 0.0          | 58<br>16           | /1.6    |
| 500 ac or more       27       26.2       0       0.0         i. Cropland area"       103       —       81       —         Number responding       69       67.0       22       27.2         1-99 ac       25       24.3       26       32.1         100–499 ac       7       6.8       23       28.4         500 ac or more       2       1.9       10       12.3         j. Grazing area (pasture and range)"       103       —       81       —         Number responding       103       —       81       —         0 ac       62       60.2       32       39.5         1–99 ac       27       26.2       21       25.9         100–499 ac       27       26.2       21       25.9         100–499 ac       10       9.7       13       16.0         500 ac or more       4       3.9       15       18.5         k. Professional helped in estate planning <sup>b</sup> —       —       —         Number responding       104       —       90       —         Yes       67       64.4       64       71.1         No       34       32.7  | 100–499 ac  | 38            | 36.9         | 7                  | 8.6     |
| i. Cropland area"<br>Number responding<br>0 ac<br>1-99 ac<br>1-99 ac<br>100-499 ac<br>5<br>100-499 ac<br>100 -499 ac<br>100 -499 ac<br>100 -499 ac<br>100 -499 ac<br>101 -499 ac<br>102 -499 ac<br>103 -<br>103 -<br>103 -<br>103 -<br>103 -<br>104 -<br>105 -<br>10 | 500 ac or more  | 27            | 26.2         | 0                  | 0.0     |
| Number responding103—81—0 ac6967.02227.21-99 ac2524.32632.1 $100-499$ ac76.82328.4500 ac or more21.91012.3j. Grazing area (pasture and range)"103—81—Number responding103—81—0 ac6260.23239.51-99 ac2726.22125.9100-499 ac109.71316.0500 ac or more43.91518.5k. Professional helped in estate planningb104—90—Yes6764.46471.1No3432.72628.9Don't know32.900.0l. Professional help reduced the tax due"67—64—Number responding67—64—Number responding67—64—Number responding67—64—Number responding67—64—No2131.3812.5Do not know57.5812.5   | i. Cropland area <sup><i>a</i></sup>                                  |               |              |                    |         |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | Number responding   | 103           |              | 81                 |         |
| 100-499  ac       7       6.8       23       28.4 $500  ac or more$ 2       1.9       10       12.3         j. Grazing area (pasture and range)"       103       —       81       —         Number responding       103       —       81       —         0 ac       62       60.2       32       39.5         1-99 ac       27       26.2       21       25.9         100-499 ac       10       9.7       13       16.0         500 ac or more       4       3.9       15       18.5         k. Professional helped in estate planning <sup>b</sup> —       90       —         Yes       67       64.4       64       71.1         No       34       32.7       26       28.9         Don't know       3       2.9       0       0.0         I. Professional help reduced the tax due"       —       —       —         Number responding       67       —       64       —         Number responding       67       —       64       —         Number responding       67       —       64       —         No       21       31.3   | 0 ac  | 69            | 6/.0<br>2/.3 | 22                 | 2/.2    |
| 100 LS or more       2       1.9       10       2.5       2.6.1         500 ac or more       2       1.9       10       12.3         j. Grazing area (pasture and range) <sup>at</sup> 103       —       81       —         0 ac       62       60.2       32       39.5         1–99 ac       27       26.2       21       25.9         100–499 ac       10       9.7       13       16.0         500 ac or more       4       3.9       15       18.5         k. Professional helped in estate planning <sup>b</sup> —       90       —         Yes       67       64.4       64       71.1         No       34       32.7       26       28.9         Don't know       3       2.9       0       0.0         I. Professional help reduced the tax due <sup>at</sup> —       —       —         Number responding       67       —       64       —         No       21 <t< td=""><td>1-99 ac <math>100-499</math> ac</td><td>2) 7</td><td>6.8</td><td>20</td><td>28.4</td></t<>   | 1-99 ac $100-499$ ac  | 2) 7          | 6.8          | 20                 | 28.4    |
| j. Grazing area (pasture and range) <sup><i>a</i></sup><br>Number responding 103 — 81 —<br>0 ac 62 60.2 32 39.5<br>1–99 ac 27 26.2 21 25.9<br>100–499 ac 10 9.7 13 16.0<br>500 ac or more 4 3.9 15 18.5<br>k. Professional helped in estate planning <sup><i>b</i></sup><br>Number responding 104 — 90 —<br>Yes 67 64.4 64 71.1<br>No 34 32.7 26 28.9<br>Don't know 3 2.9 0 0.0<br>l. Professional help reduced the tax due <sup><i>a</i></sup><br>Number responding 67 — 64 —<br>Yes 41 61.2 48 75.0<br>No 21 31.3 8 12.5<br>Do not know 5 7.5 8 12.5  | 500 ac or more  | 2             | 1.9          | 10                 | 12.3    |
| Number responding103—81—0 ac6260.23239.51–99 ac2726.22125.9 $100-499$ ac109.71316.0500 ac or more43.91518.5k. Professional helped in estate planning <sup>b</sup> 104—90—Yes6764.46471.1No3432.72628.9Don't know32.900.0l. Professional help reduced the tax due <sup>a</sup> —67-Number responding67—64—Number responding67—64—Number responding57.5812.5  | j. Grazing area (pasture and range) <sup>a</sup>                      |               |              |                    |         |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$   | Number responding   | 103           |              | 81                 |         |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | 0 ac  | 62            | 60.2         | 32                 | 39.5    |
| 100-479 ac       10 $j.j$ 13       10.0         500 ac or more       4 $3.9$ 15       18.5         k. Professional helped in estate planning <sup>b</sup> 104       -       90       -         Yes       67       64.4       64       71.1         No       34       32.7       26       28.9         Don't know       3       2.9       0       0.0         1. Professional help reduced the tax due <sup>a</sup> Number responding       67       -       64       -         Number responding       67       -       64       -       -       90       0.0         1. Professional help reduced the tax due <sup>a</sup> -       -       64       -       -         Number responding       67       -       64       -       -         Yes       41       61.2       48       75.0       No       21       31.3       8       12.5         Do not know       5       7.5       8       12.5   | 1-99 ac   | 2/            | 26.2         | 21                 | 25.9    |
| k. Professional helped in estate planning <sup>b</sup><br>Number responding<br>Yes<br>No<br>104<br>104<br>104<br>104<br>104<br>104<br>104<br>104  | 500 ac or more  | 4             | 3.9          | 15                 | 18.5    |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$   | k. Professional helped in estate planning <sup>b</sup>                | 1             | 5.7          | 17                 | 10.9    |
| Yes $67$ $64.4$ $64$ $71.1$ No $34$ $32.7$ $26$ $28.9$ Don't know $3$ $2.9$ $0$ $0.0$ l. Professional help reduced the tax due" $  64$ Number responding $67$ $ 64$ $-$ Yes $41$ $61.2$ $48$ $75.0$ No $21$ $31.3$ $8$ $12.5$ Do not know $5$ $7.5$ $8$ $12.5$  | Number responding   | 104           | _            | 90                 | _       |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$  | Yes   | 67            | 64.4         | 64                 | 71.1    |
| 1. Professional help reduced the tax due <sup>a</sup> 5     2.9     0     0.0       1. Professional help reduced the tax due <sup>a</sup> 67     -     64     -       Number responding     67     -     64     -       Yes     41     61.2     48     75.0       No     21     31.3     8     12.5       Do not know     5     7.5     8     12.5  | No<br>Den't lan east  | 34            | 32.7         | 26                 | 28.9    |
| Number responding     67     —     64     —       Yes     41     61.2     48     75.0       No     21     31.3     8     12.5       Do not know     5     7.5     8     12.5  | Don t know<br>Professional help reduced the tax due <sup>d</sup>      | 3             | 2.9          | U                  | 0.0     |
| Yes         41         61.2         48         75.0           No         21         31.3         8         12.5           Do not know         5         7.5         8         12.5  | Number responding   | 67            | _            | 64                 | _       |
| No         21         31.3         8         12.5           Do not know         5         7.5         8         12.5  | Yes   | 41            | 61.2         | 48                 | 75.0    |
| Do not know 5 7.5 8 12.5  | No  | 21            | 31.3         | 8                  | 12.5    |
|   | Do not know   | 5             | 7.5          | 8                  | 12.5    |

<sup>*a*</sup> The samples differ statistically at the  $\alpha = 0.05$  level of significance.

<sup>b</sup> The samples do not differ statistically at the  $\alpha = 0.05$  level of significance.

Test results are based on a small sample.

<sup>d</sup> FLP, Family Limited Partnership; LLC, Limited Liability Corporation.

1,024 ac and a median of 156 ac. Expanding this finding, an estimated 79.1 million nonindustrial private forest acres nationwide are transferred each year at the death of their owners.

In all, 64% of the decedent owners used the services of a financial or legal professional to plan their estate (Table 1k). But only 61% of the heirs believed that professional help had reduced the amount of estate tax due (Table 1l).

*"Special Use" Valuation.* With a forest holding, "special use" valuation can be applied to the land only, the timber only, or both. Only 33% of forest estates qualified for and 26% elected to use "special use" valuation (Table 2, a and b). Of the estates that used it, 74% applied "special use" valuation to both the land and the timber, and 26% applied it to the land only. No respondents reported applying "special use" valuation to the timber only (Table 2c).

During the survey period, the maximum reduction in gross estate value from using "special use" valuation was capped at \$750,000. The actual reductions reported for forest estates averaged well below the maximum; they ranged from \$0 to \$750,000, with a mean of \$325,000 and a median of \$250,000. Expanding this finding, an estimated 20,000 forest estates elect to use "special use" valuation each year, resulting in a combined total reduction in their gross estate values on the order of \$6.5 billion.

Assets Used to Pay the Federal Estate Tax. A substantial majority of forest owner respondents (62%) reported that no federal estate tax was due in the transfers they were involved with (Table 3a). In most instances where estate tax was due, insurance or other assets were used to pay it. But in 22% of the cases timber was sold to pay part or all of the tax, and in 19% of the cases land was sold to pay part or all of the tax (Table 3b).

In 75% of the cases where timber was sold, the sale was necessary because other assets were not adequate to pay the tax (Table 3c). The need to sell timber was not a characteristic of small holdings, and the area harvested was not inconsequential. The forest size of ownerships that needed to sell timber ranged from 79 to 10,000 ac, with a mean of 3,035 acres and a median of 670 acres. The area harvested ranged from 5 to 1,100 acres, with a mean of 498 acres and a median of 430 acres. Expanding these findings, an estimated 4,900 forest estates need to sell timber each year to pay part or all of the federal

## Table 2. Utilization of "special use" valuation by forest owners and other rural landowners.

|  | Forest owners |         | Other rural owners |         |
|--|---------------|---------|--------------------|---------|
|  | Number        | Percent | Number             | Percent |
| a. Estate qualified for "special use" valuation <sup>6</sup>                 |               |         |                    |         |
| Number responding  | 104           |         | 87                 |         |
| Yes  | 34            | 32.7    | 20                 | 23.0    |
| No   | 52            | 50.0    | 52                 | 59.8    |
| Don't know   | 18            | 17.3    | 15                 | 17.2    |
| b. Estate utilized "special use" valuation <sup>b,c</sup>                    |               |         |                    |         |
| Number responding  | 34            |         | 20                 |         |
| Yes  | 27            | 79.4    | 15                 | 75.0    |
| No   | 6             | 17.6    | 5                  | 25.0    |
| Don't know   | 1             | 2.9     | 0                  | 0.0     |
| c. Asset(s) valued with "special use" valuation <sup><i>a</i>,<i>c</i></sup> |               |         |                    |         |
| Number responding  | 27            |         | 15                 | _       |
| Land only  | 7             | 25.9    | 11                 | 73.3    |
| Timber only  | 0             | 0.0     | 0                  | 0.0     |
| Both land and timber   | 20            | 74.1    | 4                  | 26.7    |

<sup>*a*</sup> The samples differ statistically at the  $\alpha = 0.05$  level of significance.

<sup>b</sup> The samples do not differ statistically at the  $\alpha = 0.05$  level of significance.

<sup>c</sup> Test results are based on a small sample.

### Table 3. Assets used by forest owners and other rural landowners to pay the federal estate tax.

|  | Forest | Forest owners |        | Other rural owners |  |
|--|--------|---------------|--------|--------------------|--|
|  | Number | Percent       | Number | Percent            |  |
| a. Federal estate tax paid <sup>6</sup>                        |        |               |        |                    |  |
| Number responding  | 95     |               | 75     |                    |  |
| No tax paid  | 59     | 62.1          | 54     | 72.0               |  |
| Tax on \$600,000–999,999 gross estate                          |        |               |        |                    |  |
| value  | 16     | 16.8          | 14     | 18.7               |  |
| Tax on \$1,000,000-1,999,999 gross estate                      |        |               |        |                    |  |
| value  | 11     | 11.6          | 3      | 4.0                |  |
| Tax on \$2,000,000 -\$2,999,999 gross                          | 11     | 11.0          | 5      | 1.0                |  |
| estate value   | 3      | 3.2           | 2      | 27                 |  |
| Tay on gross estate value over \$3,000,000                     | 6      | 63            | 2      | 2.7                |  |
| b Assets used to pay the federal estate $tax^{b,c}$            | 0      | 0.5           | 2      | 2.7                |  |
| Number responding  | 36     |               | 19     |                    |  |
| Insurance or other assets                                      | 21     | 58.3          | 16     | 84.2               |  |
| Sold timber to pay part or all of the tax                      | 8      | 22.2          | 0      | 0.0                |  |
| Sold land to pay part or all of the tax                        | 7      | 19.4          | 3<br>3 | 15.8               |  |
| c. Reason(s) timber was sold <sup><math>d</math></sup>         | /      | 1).1          | 5      | 19.0               |  |
| Number responding  | 8      |               | 0      |                    |  |
| Had to—other assets were not adequate                          | Ğ      | 75.0          | ŏ      |                    |  |
| High market value  | ŏ      | 0.0           | ŏ      |                    |  |
| Management plan called for a harvest                           | 2      | 25.0          | Õ      |                    |  |
| d. Reason(s) land was sold $b,c$                               | -      | 2,10          | Ŭ      |                    |  |
| Number responding  | 7      | _             | 3      |                    |  |
| Had to—other assets were not adequate                          | 4      | 57.1          | 3      | 100.0              |  |
| Was the least profitable asset                                 | 1      | 14.3          | Ő      | 0.0                |  |
| Heirs were not interested in continuing use                    | 1      | 14.3          | 0      | 0.0                |  |
| Other  | 1      | 14.3          | 0      | 0.0                |  |
| e. Current use of land that was sold <sup><math>d</math></sup> |        |               |        |                    |  |
| Number responding  | 7      |               | 0      |                    |  |
| Still in its original use                                      | 5      | 71.4          | 0      |                    |  |
| Partially or fully developed                                   | 1      | 14.3          | 0      | _                  |  |
| Other  | 1      | 14.3          | 0      |                    |  |
| Don't know   | 0      | 0.0           | 0      |                    |  |

<sup>*a*</sup> The samples differ statistically at the  $\alpha = 0.05$  level of significance.

<sup>b</sup> The samples do not differ statistically at the  $\alpha = 0.05$  level of significance.

Test results are based on a small sample.

<sup>d</sup> No test—no "other rural owners" observations.

estate tax, and the forest area harvested is on the order of 2.4 million ac.

Again, in 57% of the cases where land was sold to pay part or all of the estate tax, the sale was necessary because other assets were not adequate to pay the tax (Table 3d). The forest size of ownerships that needed to sell land tended to be smaller than those that needed to sell timber, with a range of 100-2,000 ac, a mean of 770 ac, and a median of 490 ac. The amount of land sold also tended to be less than the area harvested, with a

range of 160-780 ac, a mean of 387 ac, and a median of 220 ac. Expanding these findings, an estimated 3,300 forest estates need to sell land each year to pay part or all of the federal estate tax, and the amount of land sold is on the order of 1.3 million ac.

In 71% of the cases where land was sold to pay part or all of the estate tax, the land sold was still in its original use; but in 29% of the cases, the land was developed or converted to another use (Table 3e). Expanding this finding, the amount of nonindustrial private forestland developed or converted each year because other assets are not adequate to pay the federal estate tax is on the order of 400,000 ac.

Comparison with Other Rural Landowners. The questionnaire responses from other rural landowners were more remarkable for their similarities to forest owners than for their differences. The groups differed statistically on just 6 of the 20 characteristics surveyed. Most of the differences stemmed from the different uses forest owners and other rural landowners make of their land: other rural landowners' holdings were mostly cropland or grazing land rather than forestland (Table 1, h-j), and most other rural landowners applied "special use" valuation to the land only, rather than to land and timber (Table 2c). Also, a higher percentage of other rural landowners had been involved in the transfer of an estate during the survey period (Table 1a), and other rural landowners were more likely than forest owners to believe the decedent's use of professional estate planning services had reduced the amount of estate tax due (Table 11).

For all other characteristics measured, there was no statistical difference in the responses from the two groups: relationship to the decedent (Table 1b), form of ownership in which the land was held (Table 1c), value of the gross taxable estate (Table 1, d–f), total size of the ownership (Table 1g), whether the decedent used an estate planning professional (Table 1k), whether the holding qualified for "special use" valuation (Table 2a), whether "special use" valuation was used (Table 2b), the amount of federal estate tax paid (Table 3a), types of assets used to pay the tax (Table 3b), and reasons land was sold (Table 3d).

#### **Discussion And Conclusions**

Drawing conclusions from this analysis requires two caveats. First, because the forest owner results are from surveys of two forest owner organizations, the results may not be entirely representative of nonindustrial forest owners in general. Second, some of the estimates calculated from the survey results are based on small samples and should be considered indicators of order of magnitude rather than scientific estimates.

An estimated 77,200 forest estates, with 79.1 million ac of nonindustrial private forestland, are transferred each year at the death of their owners. Some 75% of the estates are held in individual ownership by the decedent or in joint ownership with other individuals. The average forest area transferred is 1,024 ac.

Only 33% of forest estates qualify for and 26% use "special use" valuation to reduce the gross value of the estate for estate tax purposes. In 74% of the cases where it is used, "special use" valuation is applied to both the land and the timber. This strategy may be necessary to meet the percentage tests to qualify for "special use" valuation, but it precludes harvesting timber for 10 years. The reduction in gross estate value from applying "special use" valuation to forest estates averages approximately \$325,000, well under the maximum for the provision. From these results it appears that the number of forest estates that make use of "special use" valuation is roughly 20,000 per year, and the combined total reduction in gross estate value is on the order of \$6.5 billion.

Nonindustrial private forest owners are many times more likely than other taxpayers to incur the federal estate tax. In our survey, 38% of forest owners reported that federal estate tax was due in the transfers they were involved with, compared with roughly 2% for estates in general during the survey period. The Economic Growth and Tax Relief Reconciliation Act (EGTRRA) of 2001 will reduce the number of forest estates subject to the federal estate tax, but slowly, over a number of years. An estimated 15% of forest estates still will owe estate tax in 2004 and 2005 when, under EGTRRA, the effective exemption amount is scheduled to be \$1.5 million. An estimated 9% of forest estates still will owe estate tax from 2006 through 2008, when the effective exemption amount is scheduled to increase to \$2 million; and as many as 6% of forest estates still will owe estate tax in 2009, when the effective exemption amount is scheduled to increase to \$3.5 million.

In 42% of the cases where federal estate tax is due, timber or land is sold to pay part or all of the tax. In addition, it appears that 75% of the timber sales and 57% of the land sales occur because other assets are not adequate to pay the tax. The need to sell timber or land to pay the estate tax is not a characteristic of smallholdings, and the areas affected are not inconsequential. The mean forest size of ownerships that need to sell timber is 3,035 ac and the mean area harvested is 498 ac. The mean forest size of ownerships that need to sell land is 770 ac and the mean area sold is 387 ac.

From these results it appears that the amount of forestland that must be harvested to pay the federal estate tax is on the order of 2.4 million ac per year and the amount of forestland that must be sold is on the order of 1.3 million ac per year. Of the forestland sold, it appears that on the order of 400,000 ac per year are converted to other, more developed uses.

The responses from forest owners and other rural landowners were more remarkable for their similarities than for their differences. The groups differed statistically in just 6 of the 20 characteristics surveyed, with most of the differences stemming from the different uses members of the two groups make of their land: whether it is mostly forest or mostly cropland or grazing land, and whether "special use" valuation was applied to both land and timber or to the land only.

The remaining points of difference whether the respondent had been involved in the transfer of an estate and whether they believed use of an estate planning professional had reduced the amount of estate tax due—have few clear policy implications. The last, however, may indicate the difficulty of locating estate planning professionals familiar with the unique problems and opportunities associated with forest ownerships.

For all other characteristics, there was no statistical difference in the responses from the two groups: relationship to the decedent, form of ownership in which the land was held, value of the gross taxable estate, total size of the ownership, whether the decedent used an estate planning professional, whether the holding qualified for "special use" valuation, whether "special use" valuation was used, the amount of federal estate tax paid, types of assets used to pay the tax, and reasons land was sold.

The results of this study provide insight into the effect of the federal estate tax on forest and other rural estates. They show that forest and other rural landowners are many times more likely than the population in general to incur the federal estate tax; and they indicate the magnitude of the effect the federal estate tax has in precipitating fragmentation and conversion of forest and other rural landholdings and unplanned timber harvests. As well, the results suggest several avenues for development of an estate tax relief policy that would benefit both forest owners and other rural landowners. Some elements of such a policy might include the following:

• A targeted increase in the effective exemption amount for estates that consist largely of working assets, such as land or timber.

• Revision of the requirements for "special use" valuation, to permit timber harvests made in accordance with a management plan developed in consultation with a professional forester.

• Recognition of a business entity for family farms and forests, to ensure that they qualify for business-oriented provisions in the tax code or to facilitate the transfer of working lands.

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