

Non-Industrial Private Forest Landowners' Management Expenditures in Mississippi, 1995-1997¹

By

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Abstract

A survey of non-industrial forest (NIPF) landowners in Mississippi was conducted to determine their annual expenditures on forest management practices for the period 1995-1997. The respondents were asked the amount they spent on property taxes, professional services, timber management activities and routine management activities. The average total expenditures were \$2,827.03, \$1,895.65 and \$1,906.54 for 1995, 1996 and 1997, respectively. Expenditures by NIPF landowners did not differ significantly ($\alpha=0.05$) over the three-year period. Property taxes averaged \$530.14 annually over the survey period. Fees for professional services averaged \$407.36 annually with consulting foresters representing the largest component of this category. Annual expenditures for timber management activities averaged \$972.94 and routine management expenditures averaged \$299.39. Site preparation and planting and road maintenance and construction were the largest components of these categories, respectively. Information was also solicited regarding government-related revenues and hunting-related expenditures and revenues. Results of the study indicate that variations in timber supply due to variations in management intensity by NIPF landowners over the study period are unlikely.

INTRODUCTION

NIPF landowners own 66 percent of Mississippi's forestlands (Hartsell and London 1995). Forest management activities by these landowners may significantly impact timber supply in this state. NIPF forestlands are the key to meeting the rising demand for wood products.

Since the intensity of forest management activities is a significant determinant of timber supply, an examination of the extent of these activities is important. The extent of forest management activities may be reflected in the management expenditures of NIPF landowners. Management expenditures reflect landowners' willingness to invest in timber production. Changes in these expenditures over time indicate changes in the level and intensity of forest management. Moreover, investment levels affect regional and eventually, national timber supplies (Dutrow and Kaiser 1984).

An examination of the forest management expenditures of NIPF landowners is therefore important in assessing timber supply. This may provide relevant inputs in timber supply projections. Moreover, detailed information on expenditures will demonstrate how money spent on private forestlands

is distributed among various management or silvicultural activities. It may also provide information relevant to timber investment decisions.

A series of studies have reported the costs of forestry practices in the South (See Dubois et al. 1991a, 1991b, 1995 and 1999; Kuhn 1984; and Moak 1982) but none have examined total expenditures. This study examines total forest management expenditures by NIPF landowners in Mississippi from 1995 to 1997.

METHODS

Population Sampled

The study was confined to NIPF landowners of the state of Mississippi. The samples were chosen from a list of landowner addresses available from the tax assessors' records for 66 of Mississippi's 82 counties. These samples were limited to landowners that own at least 20 acres of uncultivated land. For tax purposes, land in Mississippi is classified as either "cultivated" or "uncultivated". "Uncultivated" land refers to those land-uses other than agriculture, the majority of which are forest-related. Twenty acres was chosen as the lower limit to eliminate as many non-forestry uses as possible without severely

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impacting the total number of acres represented in the sample. Landowners with less than 20 acres account for only 8.5% of the total uncultivated acreage (Doolittle 1996).

Sampling Design and Data Collection

A mail survey of NIPF landowners was conducted annually to determine yearly forest management expenditures for 1995-1997. A survey questionnaire was designed to elicit basic information about management expenditures of NIPF landowners. The survey was conducted by the Social Science Research Center, Mississippi State University. Survey procedures followed Dillman's (1978) total design method. The questionnaires were mailed to landowners chosen through simple random sampling. A new sample was used each year. The sample size was chosen to obtain 400 usable responses, which should result in a 5% sampling error at 95% confidence level. Based on response rates from similar surveys, a 30% response rate was anticipated. Due to the low response rate during the initial year of the survey, the sampling size was increased in succeeding years. Specifically, the sample sizes used were 1,333, 1,563, and 2,210 for 1996, 1997 and 1998, respectively.

Forest management expenditures include: (1) fees for professional services such as consulting forester fees, attorney fees, accountant fees, and surveyor fees; (2) expenditures for timber management including timber stand improvement, timber cruising, timber marking, prescribed burning, site preparation, planting, and other timber management activities; (3) routine management expenditures which include expenditures on maintaining property lines, protection against fire, insects or disease, road construction and maintenance, and supervision and administration; (4) ad valorem taxes; and (5) miscellaneous costs and revenues such as government payments (Conservation Reserve Program, Federal Cost Share, and State Cost Share) and hunting costs and revenues.

Data Analysis

Survey results were summarized and analyzed using both descriptive and inferential statistics. For the descriptive statistics, mean values, standard deviations and minimum/maximum values were calculated. Specifically, the average acreage owned and average annual expenditures by category and in total were determined. An analysis of variance (ANOVA) was also conducted to determine whether management expenditures changed significantly from 1995-1997.

RESULTS AND DISCUSSION

The mail survey of non-industrial private forest landowners in Mississippi resulted in 350 usable responses for 1996, a response rate of 26.26%. The 1997 survey had 320 valid responses, a response rate of 20.47%. The final survey conducted in 1998 had 405 usable responses returned, an 18.32% response rate.

Average Acreage Owned by NIPF Forest Landowners in Mississippi

The NIPF respondents owned, on average, 231 acres over the study period (Table 1). The acreage owned was not significantly different between years ($\alpha=0.05$).

Year	Acreage	Minimum ^a	Maximum
1995	319	3	44,617
1996	183	8	3,800
1997	193	1	4,000
Average	231		

^a The minimum values reported were less than 20 acres because some landowners had already sold portions of their land when the interview was conducted.

Fees for Professional Services

Fees for professional services averaged \$407.35 from 1995-1997 (Table 2). The largest component of this category was consulting forester fees. The fees by category and in total were not significantly different ($\alpha=0.05$) between years.

Timber Management Expenditures

Expenditures on timber management activities averaged \$972.96 annually with site preparation and planting representing the largest components (Table 3). Only the expenditures on timber stand improvement were significantly different between years ($\alpha=0.05$). The average expenditures for the other timber management activities were not significantly different. In total, these expenditures were also not significantly different over the period of study.

Routine Management Expenditures

NIPF landowners spent, on average, \$299.29 on routine management activities (Table 4). The majority of expenditures under this category came from road construction and maintenance. The average expenditures of landowners for routine management activities from 1995 to 1997 were not significantly different ($\alpha=0.05$). The average expenditures for each category were also not significantly different.

Category	1995	1996	1997	Average
Consulting forester	\$82.48 (650.62)	\$338.69 (2,216.37)	\$302.44 (2,929.01)	\$241.20
Attorney	95.74 (702.59)	11.53 (74.66)	126.95 (1,768.39)	78.07
Accountant	91.71 (996.26)	26.20 (143.78)	23.14 (144.26)	47.02
Surveyor	32.99 (176.07)	28.39 (288.63)	61.81 (448.70)	41.06
Total	302.92	404.82	514.34	407.35

Note: Values in parentheses represent the standard deviation.

Category	1995	1996	1997	Average
Timber stand improvement	\$323.87 (2,454.17)	\$21.55 (264.02)	\$105.12 (809.58)	\$150.18
Timber cruising	30.59 (317.14)	23.85 (233.74)	77.25 (1,393.31)	43.90
Timber marking	14.94 (183.74)	24.44 (306.93)	5.06 (63.75)	15.48
Prescribed burning	47.23 (714.72)	17.76 (113.03)	28.85 (280.81)	31.28
Site preparation	456.06 (6,192.02)	142.13 (917.24)	132.90 (798.36)	243.70
Planting	477.93 (2,502.34)	560.95 (6,898.09)	373.90 (1,627.62)	470.93
Others	7.39 (47.44)	16.85 (122.01)	28.22 (227.34)	17.49
Total	1,358.01	809.53	751.29	972.96

Note: Values in parentheses represent the standard deviation.

Category	1995	1996	1997	Average
Maintaining property lines	\$46.48 (26.86)	\$79.05 (423.98)	\$43.57 (191.82)	\$56.36
Protection against fire, insect or disease	101.63 (1,158.42)	21.86 (176.65)	26.02 (148.02)	49.84
Road construction and maintenance	199.23 (2,093.73)	72.84 (373.66)	83.16 (479.66)	118.41
Supervision and administration	78.74 (481.26)	77.58 (352.19)	67.73 (344.02)	74.68
Total	426.07	251.34	220.48	299.29

Note: Values in parentheses represent the standard deviation.

Ad Valorem Taxes

Landowners in Mississippi also incur ad valorem property taxes. These taxes averaged \$530.14 from 1995-1997 (Table 5). These expenditures were not significantly different between years ($\alpha=0.05$).

Table 5. Ad valorem taxes paid by NIPF landowners in Mississippi, 1995-1997.	
Year	Average Ad Valorem Taxes
1995	\$740.04 (5,816.59)
1996	429.96 (968.09)
1997	420.43 (1,220.05)
Average	530.14

Note: Values in parentheses represent the standard deviation.

Miscellaneous Information

In addition to the usual management expenditures, landowners also receive government-related revenues as incentives for managing their lands. Such revenues include receipts from the Conservation Reserve Program and Federal and State

Cost Share programs. The average revenues obtained by landowners averaged \$505.96 annually (Table 6). These revenues were not significantly different between years ($\alpha=0.05$).

The largest source of payments was the Conservation Reserve Program. The average revenues for all categories were not significantly different between years ($\alpha=0.05$).

Forestlands in Mississippi are also managed for hunting. As a result, certain hunting expenditures and revenues are incurred in the management of these private forestlands. Hunting revenues averaged \$277.34 while hunting expenditures averaged \$13.43 annually (Table 7). Both hunting revenues and expenditures were not significantly different between years ($\alpha=0.05$).

Summary of NIPF Management Expenditures

The greatest portion of expenditures (Table 8) were due to timber management activities while only very minimal amounts were spent on routine management activities.

Management expenditures by NIPF landowners did not change significantly over the last three years ($\alpha=0.05$).

Table 6. Average government related revenues obtained by NIPF landowners in Mississippi, 1995-1997.				
Category	1995	1996	1997	Average
Conservation reserve program	\$299.53 (2,450.08)	\$312.38 (1,342.11)	\$637.84 (4,116.32)	\$416.58
Federal cost share	63.11 (498.69)	39.08 (417.47)	40.08 (336.62)	47.42
State cost share	30.92 (216.15)	32.14 (273.37)	62.81 (400.16)	41.96
Total	393.56	383.60	740.73	505.96

Note: Values in parentheses represent the standard deviation

Table 7. Average hunting expenditures and revenues of NIPF landowners in Mississippi, 1995-1997.				
Category	1995	1996	1997	Average
Average expenditures	\$24.54 (186.82)	\$7.08 (49.06)	\$8.67 (75.96)	\$13.43
Average revenues	540.40 (6,588.19)	156.97 (946.27)	134.64 (703.94)	277.34

Note: Values in parentheses represent the standard deviation

Category	1995	1996	1997	Average
Professional services	\$302.91	\$404.82	\$514.34	\$407.36
Timber management	1,358.01	809.53	751.29	972.94
Routine management	426.07	251.34	220.48	299.30
Ad valorem taxes	740.04	429.96	420.43	530.14
Total	2,827.03	1,895.65	1,906.54	2,209.74

IMPLICATIONS/CONCLUSIONS

The decision by NIPF landowners to engage in forest management is significantly affected by the magnitude of the related expenses. Like any rational producer, a typical landowner seeks to maximize returns in his production venture. Forest management expenditures of Mississippi NIPF landowners did not change significantly during the last three years and accounted for the majority of landowner expenditures. The most prevalent types of timber management expenditures were site preparation and planting. This implies that landowners continue to view forestry as a favorable investment. More importantly, the results of this study also indicate that variations in timber supply due to variations in management intensity by NIPF landowners over the study period are unlikely.

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