Wildlife Session

Behaviors of Mississippi Nonindustrial Private Forest Landowners Toward Hunting

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Abstract: A mail questionnaire was used to determine behaviors of Mississippi nonindustrial private forest landowners toward hunting on their lands. Seventy-three percent (516 of 704) of the questionnaires were returned. A telephone survey of nonrespondents indicated negligible bias in the mail survey. About 45% of the respondents posted their land and 43% allowed no hunting by the general public. At least 77% of the respondents allowed hunting on their lands. Since only 6% of the respondents leased hunting rights, most hunting was by the landowner, family or guests. Timber was the most important use of forests followed by wildlife, residence and grazing. Most (63%) of the respondents had multiple-use goals of ownership. Most respondents did not actively manage for timber or wildlife.

Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies 37:1–7

Nonindustrial private forest (NIPF) landowners hold about three-fourths of the forest land in Mississippi (Murphy 1978). Thus, hunting opportunity in Mississippi is highly dependent upon the land-use practices and attitudes toward hunting of these landowners. This study was conducted to determine the behaviors of NIPF landowners in Mississippi toward hunting

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on their property, their use of these hunting opportunities and the importance of wildlife in their overall forest management goals.

Methods

One county was selected at random from each of the 5 forest resource regions of Mississippi as defined by Murphy (1978). A questionnaire was developed to survey NIPF landowners with at least 16.2 ha of forested land in these counties. A sampling frame was established by examination of county tax rolls. NIPF landowners were stratified into 3 categories by size of ownership: 16.2 to 40.6 ha, 40.8 to 60.7 ha, and > 60.7 ha. Stratified random sampling with proportional allocation (Mendenhall et al. 1971) was used to select a sample of 25% of the NIPF landowners from each county. Three reminder mailings were sent to nonrespondents and 30% of the nonrespondents were interviewed by phone to determine nonresponse bias.

Descriptive statistics were calculated for all items of the questionnaire using SPSS (Nie et al. 1975). Responses were compared by size of ownership using various nonparametric statistical procedures. Landowner characteristics and opinions toward management practices were associated with management objectives using the Chi-square statistic. Statistical significance was accepted at the 0.05 level of probability.

Results

Seventy-three percent (516 of 704) of the mailed questionnaires were completed and returned. The telephone survey of nonrespondents indicated some bias in the results of the mail survey. Nonrespondents were significantly more likely to be male than female, younger, more likely to have conducted forestry practices, and less likely to prefer multiple-use management than respondents to the mail survey.

Most respondents were male (87%), white (90%), earned more than $15,000 per year (56%), and had purchased as opposed to inherited their land (75%). The most frequently reported occupations were retired (37%), professional (16%), and farmer (15%). Mean age of respondents was 59 years, mean education 12 years, mean tenure 28 years, and mean size of ownership 112 ha (277 acres) with 66 ha (163 acres) of forests.

Access for Public Hunting

About 45% of the respondents posted their land (Table 1). The majority of respondents had experienced trespass problems, and these problems had affected the amount of hunting they allowed. The proportion of the respondents who posted their lands and experienced problems with trespass violators was positively associated with size of ownership. About 44% of the respondents allowed hunting with permission, 43% allowed no hunting by

Table 1. Posting of land reported by respondents to the 1980 mail survey of Mississippi NIPF ($N = 451$).

Question	Ownership category (ha)					
	16.2–40.6	40.8–60.7	>60.7	Total	X^2	df
	(% of respondents)					
Posted their land	34	40	55	45	15.7[a]	2
Experienced problems with violators	57	70	81	71	10.1[a]	2
Violations affected the amount of hunting allowed	46	39	66	55	7.92[a]	2

[a] Significant ($P \leqq 0.05$).

the general public, 7% allowed hunting for payment, and 7% allowed open hunting. Of the 6% of the respondents who leased hunting rights, most (60%) did not charge for the lease. Ninety percent of those who charged for leasing received less than $0.81/ha. Most (80%) respondents indicated that they would not consider leasing hunting rights regardless of price.

Behavior of respondents toward public use of lands was significantly associated with age, sex, and education. Female respondents were more likely than males to want no public use of their lands. Only 3% of female respondents indicated that they preferred open use of their land. The proportion of respondents wanting payment for or no hunting on their lands increased with age. The proportion of respondents requiring permission for hunting on their land increased with education; the proportion allowing no hunting decreased with education.

Use of Hunting Opportunity

At least 77% of the respondents allowed hunting on their lands. White-tailed deer (*Odocoileus virginianus*), bobwhite (*Colinus virginianus*), rabbits (*Sylvilagus* spp.), squirrels (*Sciurus* spp.), raccoon (*Procyon lotor*) and wild turkey (*Meleagris gallopavo*) were the most popular game (Table 2).

Table 2. Hunting recreation reported by respondents to the 1980 mail survey of Mississippi NIPF landowners ($N = 470$).

Species	% allowing hunting	Mean N of hunters per ownership	Mean harvest/ ownership
White-tailed deer	64	12	4
Wild turkey	49	3	3
Squirrels	69	6	33
Rabbit	69	7	25
Raccoon	62	6	10
Bobwhite quail	68	7	57

Since only 6% of the respondents leased hunting rights, most hunting was for personal, family, or guest use.

Goals and Current Management

Timber was reported as the primary use of forest land, followed by grazing, wildlife, and residence (Table 3). Porterfield et al. (1978) reported that timber production (52%) was the major use of forest land by Mississippi NIPF landowners, followed by grazing (29%) and residence (12%). They made no mention of wildlife as a primary use. Timber was also the most important use of forest land in the present study when mean importance values were considered (Table 3). Wildlife was rated as the second most important use, followed by residence and grazing.

Primary use of forested land was associated significantly with sex, income and education of respondents. Males were more likely than females to report timber as their primary use; females were more likely than males to report residence as their primary use. The proportion of respondents reporting timber and wildlife as primary uses increased with income, while the proportion reporting residence and grazing declined with income. The proportion of respondents reporting timber as their primary use increased with education, while the proportion indicating wildlife, grazing, speculation, or clearing decreased with education.

A majority (63%) of the respondents indicated that their goal in owning forest land was multiple use, 18% a single use, 2% planned to sell their land, and 18% were undecided about goals. Multiple-use goals were also reflected in forest composition preferences as most (55%) of the respondents indicated that they preferred a mixed pine-hardwood composition on their forest lands. Twenty-nine percent preferred all pine, 5% all hardwood, and 11% were undecided. Goals and forest composition preferences were consistent across ownership categories.

Goals of ownership were associated significantly with age, education, rural background, sex, and income. The proportion of respondents favoring

Table 3. Use of forested land by respondents to the 1980 mail survey of Mississippi NIPF landowners ($N = 470$).

Primary use of forested land	% ranking as most important	Mean importance value[a]
Timber	46.9	1.41
Wildlife	20.8	1.83
Grazing	14.3	1.92
Residence	9.8	1.88
Clearing	3.2	2.59
Other	5.0	2.86

[a] Very important = 1, important = 2, and not important = 3.

a single use and selling of forest land increased with age. The proportion of respondents reporting a single-use goal increased as the number of years spent in a rural area during the first 20 years of life increased. Respondents interested in landowner assistance programs were more likely to have a multiple-use rather than a single-use goal of ownership. Females were more uncertain about forest-type preference than males. Preference for pine increased with age, income, and education.

Sale of timber (31%), planting seedlings (12%), thinning (11%), timber stand improvement (6%) and prescribed burning (4%) were frequently reported forest management practices. Less than 2% of the respondents reported leasing their lands to a wood-using firm during the past 5 years. The proportion of respondents performing timber management practices increased with size of ownership, but the increase was significant only for prescribed burning.

Planting food plots (20%), control of nuisance wildlife (15%), stocking (9%), prescribed fire (8%), and recording harvest data (4%) were frequently reported wildlife management practices. Most nuisance control efforts were directed at beaver as a majority (51%) of the respondents reported damage to timber by beaver. Forty-two percent of respondents with agricultural areas reported depredation problems.

The plans of respondents for conducting wildlife management practices were associated significantly with sex, age, race, income, and education. Males were more likely than females to plant food plots and control nuisance wildlife. The proportion of respondents planning management practices declined with age, and those planning management practices were more likely to be white than black. The proportion of respondents planning management practices increased with income and education.

Discussion and Conclusions

Although timber was the dominant use of nonindustrial private forest lands in Mississippi, other benefits were important to landowners. The majority of the respondents indicated that their goals involved multiple use rather than a single use. Wildlife, residence and grazing were ranked behind timber in overall importance. That a majority of respondents indicated a preference for mixed stands of pine and hardwoods is indicative of the importance of multiple benefits in overall goals of NIPF landowners.

Landowners in this survey were reluctant to consider leasing of hunting rights for income. Eighty percent of the respondents indicated that they would not lease hunting rights regardless of price. Anti-hunting attitudes by respondents do not appear to be a major factor in these decisions as hunting occurred on at least 77% of the respondents' lands. The occupations of respondents indicate that most NIPF landowners may not depend primarily on

their land for income. Thus, it appears that the interest in wildlife expressed by respondents was for recreational use by family and friends, non-commodity values and esthetics.

NIPF landowners in Mississippi are predominantly white males over 60 years of age, thus major changes in ownership will occur during the next 2 decades. Changing ownership has resulted in a trend of decreasing size of ownerships and decreasing owner economic dependence on private forest lands in other regions (Applegate 1981, Wilkins 1973, Christensen and Grafton 1966). Economic incentives may continue to be the major means of maintaining wildlife habitats as suggested by many (Noonan and Zagata 1982, Burger and Teer 1981, Stout 1974) on larger NIPF holdings but such incentives may have very little appeal to smaller landowners. The importance of noncommodity considerations such as wildlife will likely increase relative to commodity considerations such as timber and grazing in the management goals of Mississippi NIPF landowners.

Mississippi NIPF landowners do not actively manage for timber or wildlife. Control of access by posting land and planting food plots to attract wildlife were the primary wildlife management actions reported by respondents. Other studies (Burger and Teer 1981, Applegate 1981, Davis 1964) have indicated that private landowners are not willing to conduct habitat management practices even where selling hunting opportunity is lucrative. Habitat is viewed as a by-product of land use. NIPF landowners might be more interested in timber management if they were aware of how primary land-use management practices such as prescribed burning, thinnings and timber sales can be used to enhance other benefits such as wildlife.

The findings of this study suggest trends in the management of forest resources on private nonindustrial lands in Mississippi. Monetary gain does not appear to be the principal purpose of forest land ownership, and the trend is that economic dependence on NIPF lands will be even less important to the smaller landowners in the future. Many of today's landowners are able to forego economic opportunity to enhance other forest benefits. Professionals must recognize the prerogatives of private ownership and develop management schemes appropriate to the landowner's goals. If the challenge of meeting increasing demands for wood products is to be met through increased production from nonindustrial land holdings, it may best be accomplished through multiple-use management that accommodates the goals of individual landowners.

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