

LAND USE PERCEPTIONS AND MOTIVATIONS AFFECTING
SOUTHEASTERN OKLAHOMA NONINDUSTRIAL
PRIVATE FOREST LANDOWNERS

By

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CHAPTER I

INTRODUCTION

Non-industrial private forest (NIPF) landowners represent one of the largest forest ownerships, owning approximately 58% of the commercial forest land in the United States (USDA 1988a; Birch 1983). Across the southern United States, NIPF landowners own approximately 70% of the commercial forestland. In Oklahoma, roughly 67% of the forest land is owned by NIPF landowners. This diverse and multifaceted group has a wide range of attitudes and objectives towards forest land management and is comprised of farmers, other individuals, land estates, and non-timber corporations (USDA Forest Service, 1989). Foresters have been concerned about the apparent mismanagement and low production from NIPF lands for several decades as these lands must produce more timber to meet increasing demand (Stoddard 1950; Alig, Lee, and Moulton 1990; Clawson 1979; Folweiler 1944).

Based on long-term supply and demand projections, harvests from NIPF lands will be the major source of future increases in softwood and hardwood supplies while also providing for wildlife habitat, recreation, and other non-

forest values (USDA Forest Service, 1989). The demand for wood products, particularly paper, has continued to increase since the 1950s and is projected to continue to increase through 2030 (Lewis and Goodier 1990, USDA Forest Service 1989). If future management intensities on NIPF lands remain similar to early 1970 levels, the supplies will not be sufficient to meet the projected demand levels (Fedkiw, 1989). At the same time, pressure is growing to reduce harvest levels on the National Forests and only marginal increases in production can be expected from industrial lands. Nonindustrial private forests are, therefore, important for wildlife habitat, outdoor recreation opportunities, and other nontimber resources.

The majority of NIPF landowners, however, do not manage primarily for timber products and often value nontimber objectives, such as aesthetics, higher than timber production. Individual and social needs of public and private forests, in general, have expanded from predominantly utilitarian values in the 1930's and 1940's to more romantic and symbolic values in the 1980's and 1990's (Kennedy, 1985). Many landowners also perceive some forest management practices as being detrimental to the environment.

More than 200 studies, focused on (NIPF) landowners over the past forty years, sought to determine what resources they own, what they are doing with the land and timber resource and why, and how this might affect future

timber supplies. Several descriptive studies have profiled NIPF landowners. Other studies have focused on characteristics specifically related to forest management. Despite the numerous years of study, NIPF management behavior remains poorly understood.

Problem Statement

Research on NIPF management behavior is necessary because of rapidly changing ownerships and inadequate understanding of landowner perceptions and attitudes. Generally, forest tracts are becoming increasingly fragmented as this land is split and sold or distributed between family members. As the forest land passes to new owners, landowner demographic characteristics and land use perceptions will likely continue to change resulting in smaller forest tracts held by more urban individuals who perceive timber production as a minor ownership objective.

One key to understanding NIPF landowner behavior is further understanding of the values and motivations behind land management decisions in addition to landowner descriptive or demographic characteristics affecting those decisions. Recent studies focusing on underlying motivations, attitudes, and perceptions of NIPF landowners have provided increased insight into landowner behavior (Haymond, 1988; Straka and Doolittle, 1987). This type of information is vital to designing appropriate education and

extension programs aimed at increasing the knowledge of the forest landowner concerning forest management. Appropriate programs must incorporate and accomodate landowner objectives, perceptions, and experience so that management practices applied meet the multiple needs of the landowner and society.

Objectives

The primary objective of this research is to document the objectives, management practices, and perceptions of NIPF landowners in southeastern Oklahoma . The specific objectives of this research are :

- * To describe the personal background, experiences, and characteristics of private forest landowners in three southeastern Oklahoma counties.
- * To investigate how resident landowner status influences forest management practices.
- * To investigate how experiences, attitudes, and perceptions of different types of landowners affect applied forest management practices, land-use attitudes, and future harvesting plans.

CHAPTER II

LITERATURE REVIEW

The percentage of nonindustrial private forest landowners varies significantly between different regions of the United States (USDA, 1988). In the western region, 23% of the forest land is owned by nonindustrial private forest landowners (USDA Forest Service 1989). In eastern Oklahoma, NIPF landowners own approximately 67% of the commercial forestland in the eighteen eastern counties of the state (Earles, 1976; Wheatcraft and Lewis, 1986; Rosson, Jr. and Doolittle, 1987).

A high percentage of NIPF lands are classified as generally poorly stocked and under productive (Frutchey and Williams, 1965; Carpenter, 1982; Rosson and Doolittle, 1987). In Oklahoma, less than 20% of private forest land was harvested during the ten years from 1976 to 1986 (Wheatcraft and Lewis, 1986; McWilliams, 1987). This means that many acres of private forest land are not carrying vigorously growing forests. In addition there is often failure to regenerate the forest after harvest on NIPF lands (Colvin, 1977; Kaiser, 1979; Hickman, 1983; Birdsey and Pitcher, 1986; and Royer, 1987). Regeneration failure often

results in low stocking levels and poor quality stands potentially affecting the long-term timber supply from these lands (Alig, et al. 1990; USDA Forest Service 1989; Birdsey and Bertelson, 1987; McWilliams et al., 1987; and Rosson, Jr. et al., 1987).

NIPF owners produce other forest resource outputs in addition to wood products (Birch, 1986), including recreational opportunities, wildlife habitat, aesthetic values, and water reserves. Despite the importance of non-forest outputs to NIPF landowners, 40% of the total U.S. softwood harvest came from NIPF lands in 1986 (USDA Forest Service, 1989; Alig, et al. 1990).

Royer (1979) states that "forest landowner behavior is often compared to the performance level that would benefit the public welfare or society while the overall benefit to the landowner is overlooked". This statement suggests that NIPF landowners are more inclined to maximize utility related to nonmarket benefits such as aesthetic enjoyment from the forest rather than maximizing profit from forest products (Hyberg, 1989; Alig, 1991). Other forest professionals question the perception of NIPF landowners as being poor managers (McComb, 1973; Bliss 1990). Despite the continuing controversy concerning management behavior, NIPF landowners own a large percentage of the forest resources in the United States and, therefore, additional research is essential to determine how these landowners use their forest lands.

Tract Size

Several studies have identified tract size as a key determining variable for timber management investment on NIPF lands (Folweiler, 1944; Row, 1978; Straka, 1984; Thompson, 1980). The average per acre costs of management activities including tree planting and fertilization generally decrease as the size of the tract increases (McDermid, 1959; Jones, et al, 1981; Cubbage, 1986). Below 20 acres, investment in management practices sharply declines. The 40 to 50 acre class represents a transitional point, above which, the likelihood to invest in forest management increased significantly (Webster and Stolenberg, 1959; Jones, et al, 1981; Cubbage, 1986).

Tract size, investigated independently of landowner characteristics such as income, age, objectives, has not proven to be that useful in understanding NIPF landowner management behavior (Webster et al., 1959; Schuster, 1983; Royer, 1979; Bliss, 1988). Tract size alone does not provide much insight into why one landowner will manage his/her forest land for timber products while another with the same sized forest tract will not manage for timber. Motivations and personal characteristics influence forest manage decisions other than tract size (Worrell, 1975; Rosson, Jr., 1987).

Descriptive Studies

Nonindustrial private forest landowners represent a diverse ownership group. As a result, landowner behavior, particularly future harvest behavior, remains largely unpredictable (Alig, 1991). To understand landowner behavior, numerous studies have profiled NIPF landowners over the years. Demographic characteristics of landowners including age, occupation, education, income, and tenure are often used to compare NIPF landowners regionally and nationally (Farrell, 1964; McDermid, 1959; Kingsley, 1981; Thompson, 1979; Birch, 1982; Clawson, 1979; Force, 1991; Young, 1984; Worrell and Irland, 1975; Carpenter and Hansen, 1985; and USDA Forest Service, 1991).

According to a national survey, the average NIPF landowner is a white male farmer, who is over 50 years old, and probably living in the same county as his forest tract (Birch, et al. 1982; USDA Forest Service, 1991). Occupations most cited in a recent Forest Service national survey of private landowners with at least 20 acres were farmers (22%) and professional/technical workers (21%). The percentage of retired forest landowner appears to be increasing. Approximately 44% of the 1991 surveyed NIPF population were retired (USDA Forest Service, 1991). This percentage is significantly greater than the percentage (23%) reported by Birch (1982).

General demographic characteristics documented in regional, national, and state NIPF landowner studies do not appear to vary significantly between these studies (Farrell, 1964; McDermid, 1959; Kingsley, 1981; Thompson, 1979; Birch, 1982; Clawson, 1979; Force, 1991; Young, 1984; Worrell and Irland, 1975; Carpenter and Hansen, 1985). For example, in frequency of occurrence, the three most cited NIPF occupations are: farmer/rancher, professional/skilled, and retired (Birch, 1982; Young et al, 1984; Rosson et al, 1986; Force, 1987). In Oklahoma, 37% of the NIPF landowners were farmers and ranchers and they owned 40% of the NIPF forest land; 13% were skilled laborers who owned 22% of the NIPF forest land; and 18% were retired who owned 17% of the land (Thompson, 1978). Although results do not differ greatly between studies, comparisons are difficult because of the diversity of objectives, motivations, and attitudes among landowners (Young, 1984; Force, 1986). Predicting forest management behavior based upon demographic characteristics is also difficult because of the diversity found among landowners.

Resident and Non-Resident Status

A resident landowner is often defined as a landowner either living on his or her forest land or in the same county as the forest land. Resident and non-resident landowners were recently studied in New York to determine the influence on management behavior and associated

demographic and ownership characteristics (Alden 1990). Non-residents had more formal education, higher incomes, and were younger than residents (Alden, 1990). Non-residents were less likely to own woodland for timber production and included recreation and aesthetics enjoyment as important reasons for ownership. Alden (1990) concluded that resident and non-resident NIPF landowners should be considered as distinctly separate educational audiences.

Other studies have also documented differences between resident and non-resident landowners (Thompson, 1978; McComb, 1975; Carpenter et al., 1986). In Georgia, lack of forest management was associated with non-resident status (McComb, 1975). Non-residents (55%) owning forest land in Minnesota were more interested in improvement thinning than residents (14%) (Carpenter et al., 1986). Non-residents in Oklahoma had larger timber holdings; higher education levels; longer tenure; were more inclined to plant trees; and were more inclined towards commercial forest management (Thompson, 1978).

In 1978, 47% of the NIPF landowners in eastern Oklahoma were non-residents (Jones and Thompson, 1981). In a survey of NIPF landowners owning at least 40 acres, Donovan (1987) found that 43% were non-residents. Roughly 40% of these non-resident landowners lived out-of-state (Donovan, 1987). Further information on the influence of resident status on management behavior is needed to effectively design NIPF landowner extension and education efforts (Alden 1990).

Timber Resource Dependency in Oklahoma

One NIPF study in Oklahoma classified sixteen eastern Oklahoma counties into homogeneous groups according to a timber resource dependency variable determined from demographic variables, the degree of urbanization and timber industrialization, and timber industry employment statistics (Weaver, 1976: Table I). Timber resource dependency was based upon the importance of the timber industry and resource to the economy of the county. Resource dependent counties were classified as "High Industrial Ownerships".

Thompson (1978) utilized these groupings to compare forest management activities, demographic characteristics, and forest management attitudes of NIPF landowners in Oklahoma. Only one Oklahoma county, McCurtain County, was classified as being timber resource dependent (Table I). Other forested counties, including those forested with commercial species, were not found to be timber resource dependent based on the definition utilized in the study.

NIPF landowners of the major forested counties: Groups 1, 2 and 3; were found to be more inclined towards forest management (Thompson, 1978). For example, 56% of McCurtain county (Group 1) NIPF landowners indicated the chance of future commercial timber production was between 80 and 100% (Thompson, 1978). This information is important for determining if landowners in a particular county might be more interested in timber management than landowners in other counties.

TABLE I

EASTERN FORESTED OKLAHOMA COUNTIES BY
RESOURCE DEPENDENCY STATUS

Group	Description	Counties
1	High Industrial Ownerships	McCurtain
2	Mountain Forest Ownerships (Southeastern Region) (Northeastern Region)	Latimer LeFlore Adair Cherokee Delaware
3	Low Agriculture Income Ownerships	Atoka Choctaw Coal Haskell McIntosh Pushmataha
4	Medium Agriculture Income Ownerships	Muskogee
5	Non-Farm, Non-Industrial Ownerships (Southeastern Region) (Northeastern Region)	Pittsburg Ottawa
6	Urban County Ownerships	Mayes Sequoyah

*Source: Weaver, 1976.

Landowner Objectives

To complement the socioeconomic and characteristics information, a number of studies have been conducted to investigate landowner motivations and ownership objectives. Commonly listed ownership objectives include recreation, wildlife, cattle grazing, place for residence, aesthetics, preservation, timber production, and investment (Young, 1984; Carpenter et al., 1985; Force, 1987; Young and Reichenbach, 1987). Improving or managing forest land for wildlife habitat is a significant objective of many NIPF landowners (Lewis, 1979; McEvoy, 1988; Young et al., 1984). In Illinois, the three most important ownership objectives were: providing for wildlife habitat, preservation of natural beauty, and providing a legacy to pass on to future generations (Young et al., 1984). In Minnesota, residence, aesthetic enjoyment, and recreation were the three top reasons for ownership (Carpenter et al., 1986).

Although many landowners manage their forest lands for forest products including timber, others have not engaged in forest management activities for a number of reasons. Landowners often view forest management as incompatible with conservation practices or other benefits such as wildlife, recreation, and aesthetics (Hickman, 1983; Row, 1978). Other factors which hinder or preclude the application of forest management include: negative attitudes towards forest management; lack of identifiable objectives;

perception that management practices are too expensive; and lack of time (Worrell and Irland, 1975; Alden, 1990; Young, 1987; Bliss, 1988; Carpenter, et al., 1986).

Worrell and Irland (1975) listed five obstacles to forest management: lack of knowledge, lack of interest, incompatible goals, low profit potential, and lack of ability. Other obstacles are the long time span required for a return on an owner's forest investment (Frutchey, et al, 1965), immature timber, land in settled estate, land held as a legacy for heirs, and non-resident status (Young, et al, 1984; Jones, et al, 1981; Carpenter et al, 1985;).

Landowner characteristics can provide constraints to the implementation of forest management (Webster, et al., 1959; Worrell, 1975; Rosson, Jr., 1987). Landowner types, associated with non-management in two geographic regions of Arkansas, were owners of hardwood timber types, real estate speculators, retired owners, multiple heirs, and owners of smaller woodland tracts (Greene and Blatner, 1986). In Oklahoma, non-management was associated with smaller forest tracts, less education, disapproving attitudes towards forest management practices, and resident status (Thompson, 1978). Deeper understanding into motivations and attitudes associated with not managing for forest products, however, is necessary (Bliss, 1989).

Sociological Research

To further understand the underlying motivations and psychological characteristics of NIPF landowners, a few studies have employed sociological and psychological research methods to study target groups of owners (Lewis, 1979; Kurtz and Lewis 1981; Haymond, 1988; Bliss, 1988; Greene and Blatner, 1987; Doolittle, et al., 1987). These research methods have included 1) the application of the diffusion-adoption model (Haymond, 1988; Doolittle and Straka, 1987); 2) manager classification studies using Q-sort, a psychological testing technique, (Lewis, 1979; Kurtz and Lewis 1981; Marty, 1988) and; 3) qualitative sociological research (Bliss, 1988; Kingsley and Brock, 1988). Each of these will be discussed briefly.

The Diffusion-Adoption Model

Recent studies have investigated the applicability of the diffusion-adoption model and research findings to NIPF landowners' propensity to forest management (Haymond, 1988; Doolittle and Straka, 1987; Muth and Hendee, 1980). The diffusion-adoption model refers to the diffusion or spread of new ideas or practices through a social system or community and the time required for all members of the community to adopt the innovations (Rogers and Shoemaker, 1979). The model of diffusion-adoption was first applied by rural sociologists to discover how new farming technologies

and practices were transferred from the originating sources to the potential adopters in a social system (Bohlen, 1957).

The adoption rate of a new technology was found to be associated with characteristics of the innovation and personality traits of the potential users. Based on these traits and rates of adoption, individuals are classified into five basic categories (Beal and Bohlen, 1957; Muth, 1980). Briefly, these groups, are: innovators; early adopters; early majority, late majority, and non-adopters (laggards) (Muth, et al., 1980; Bohlen, 1957).

Early adopters, although not the first to adopt a new idea, are more respected by other community members as opinion leaders than the more venturesome, eccentric innovators (Bohlen, 1957). Haymond (1988) interviewed landowners identified as early adopters or opinion leaders to investigate their forest values and personal characteristics. Occupation was the key difference in determining why some opinion leaders valued their forest land for economics and timber and others for benefits from lifestyle enhancement (Haymond, 1988). Opinion leaders, engaged primarily in business, placed higher value on benefits from lifestyle enhancement (Haymond, 1988).

Differences between NIPF landowners regenerating and those not regenerating after harvest were evaluated using the diffusion of innovations model (Straka and Doolittle, 1988; Doolittle and Straka, 1987). Landowners who had regenerated after harvest had higher incomes, more acreage,

were better educated, were active in more organizations, believed timber management was very important, and scored higher on two scales indicating innovativeness (Doolittle, et al., 1987). Straka and Doolittle (1988) concluded that regenerators appeared to have characteristics of innovators, early adopters, and early majority and non-regenerators characteristics of the late majority and laggards.

Researchers stress that extension efforts should target early adopters and the early majority, usually the opinion leaders of a community (Haymond, 1988; Muth, et al., 1980; Doolittle, et al., 1987). Classifying NIPF landowners using the diffusion-adoption model is useful for predicting which landowners might be interested in timber management. The model, however, does not address other variables potentially affecting forest management including landowner personal forest values of preservation, distance to forest land, and time constraints. In addition, NIPF landowners are a diverse ownership group and often have little contact with each other. This contact is necessary for appropriate application of the diffusion and adoption model (Bohlen, 1957; Rogers and Shoemaker, 1979).

Manager Classification Studies

A series of studies in Missouri and Wisconsin classified NIPF landowners by focusing on values and attitudes using a procedure in which subjects sort through a series of statements to identify those statements that best

describe their values and attitudes (Lewis, 1979; Marty, 1983; Kurtz and Lewis, 1981; Marty and Kurtz, 1988). Lewis (1979) classified landowners into four different groups based on a combination of motivations and objectives using this sorting or Q-sort procedure. Using groups of opinion statements concerning forest and land management motivations and objectives, landowners categorized themselves into one of four landowner types. The primary management objectives were: timber production; recreation and wildlife; grazing; and preservation. The five motivations were: financial return; investment; satisfaction or aesthetics; residence; and social responsibility.

Based on the sorting results and a questionnaire related to management constraints, activities, and demographic characteristics, landowners were grouped into four categories developed from the initial sort (Kurtz and Lewis, 1981). The four landowner types in Missouri were: timber agriculturalist; timber conservationist; forest environmentalist, and range pragmatist (Lewis, 1979). Marty (1983) applied the same basic technique to classify Wisconsin NIPF landowners into three types: Resource Conservationist; Forest Recreationist; and Forest Utilitarian.

Although some respondents did not fit into any of the categories, most of the landowners were successfully categorized (Lewis, 1979). Classifying landowners into categories can increase forestry professionals'

understanding of NIPF landowners. However, resource professionals must realize that many landowners are not easily classified into pre-established categories. In addition, classifying landowners into these categories might actually inhibit enhanced understanding through stereotyping landowners.

Qualitative Research

A few recent NIPF landowner studies have implemented qualitative sociological research methodology to investigate underlying motivations and factors influencing management decisions (Kingsley and Brock, 1988; Bliss, 1988).

Qualitative research refers to the "meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things" (Berg, 1989). Representing people's views and perspectives is an important goal of qualitative researchers (Perkins, 1983). Personal case histories, unstructured interviews, historical analysis, participant observation, and ethnography represent a few qualitative research methods (Berg, 1989; Emerson, 1983).

NIPF studies incorporating qualitative methods have used unstructured interviews, case histories, (Bliss, 1988) and focus group interviews (Kingsley and Brock, 1988). Bliss (1988) developed case histories from unstructured open-ended interviews with Wisconsin Tree Farmers. Personal experience, ethnic background, family and self identity were the major factors influencing forest management behavior

(Bliss, 1988). Ethnic background and self identity represent two previously unrecognized variables affecting management decisions identified using this qualitative approach (Bliss and Martin, 1989).

Focus group interviewing, a qualitative marketing research method, was used in West Virginia to study retired NIPF landowners (Kingsley and Brock, 1988). In a focus group interview, a skilled moderator guides group discussions covering topics of interest to the researchers (Kingsley, et al., 1988). For many of the participants in the focus groups, a sense of stewardship towards the land was the strongest motive for managing forest land (Kingsley and Brock, 1988). This finding added deeper meaning to previous quantitative studies. One advantage of focus group interviewing listed by Kingsley and Brock (1988) was that other unplanned topics of interest to the focus group emerged from the discussion, enhancing overall understanding of the research topic.

In Oklahoma, unstructured interviews were conducted to explore perceptions of county residents regarding incendiary fires on forest industry land (Perkins, 1981). An additional qualitative research project studied land-use perceptions, including changes in forest industry management practices (Perkins and Turner, 1983). Several county residents mentioned a strong stewardship ethic towards the land. This feeling of responsibility was often coupled with a strong sense of distrust towards "any person, or

government telling me how to manage my land" Although not specifically focused on NIPF landowners, both studies concentrated on social issues potentially affecting NIPF landowner beliefs and attitudes.

Insight into underlying motivations and beliefs of different NIPF landowner sub-populations through using qualitative methods, psychological testing, and classification techniques can enhance understanding of the processes landowners go through in making forest management decisions. Qualitative and quantitative research methods are complementary often resulting in strengthened research findings by combining results of both methods (Bliss and Martin, 1989). Combining different levels of qualitative and quantitative methods can create a more accurate picture of factors influencing NIPF landowners and examines the social context of landowner behavior (Perkins, 1983).

Paramount to education and extension efforts aimed at affecting NIPF landowner forest management behavior is an increased understanding of just who these NIPF landowners are and why they might manage the way they do. Exploring landowner objectives have enhanced professional foresters' approach to communication with landowners but further information is needed. Over forty years after Stoddard (1950) asked "who is the forest owner?" the answer remains complicated and incomplete, because population characteristics and human values of the forest continue to change.

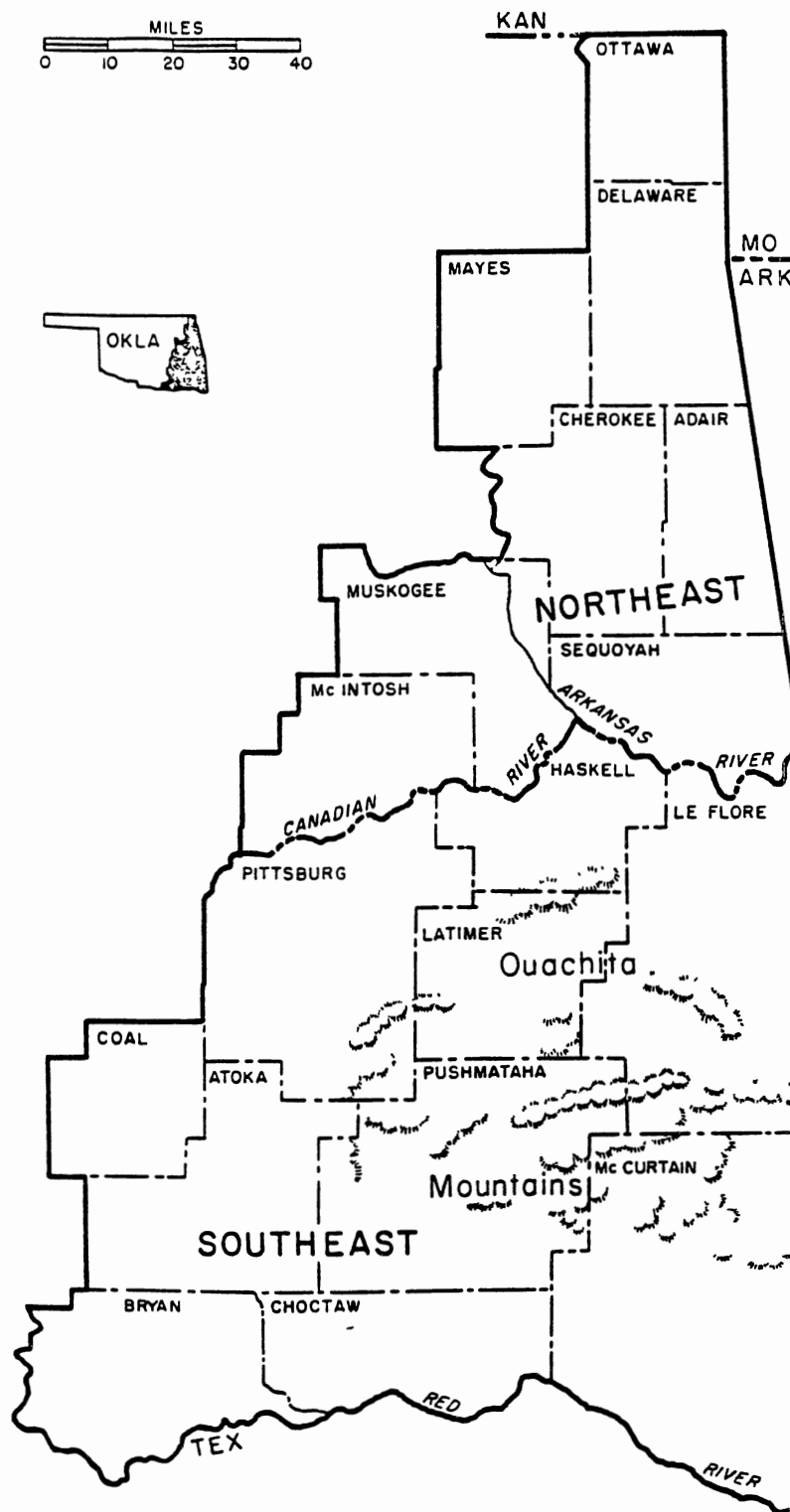
The purpose of this research is to describe the personal background, experiences, and characteristics of NIPF landowners in three counties of southeastern Oklahoma. An additional objective is to investigate how resident status influences forest management practices. Investigating experiences and attitudes of different types of landowners, including non-resident and resident landowners, and how these experiences affect applied forest management practices and future harvesting plans is also an important objective of this study.

CHAPTER III

METHODS AND PROCEDURE

The forest land in Oklahoma is primarily concentrated in the eighteen eastern counties, especially the southeastern corner of the state (Figure 1). The southeastern region is approximately 55% forested and the northeast region is 39% forested. Oak-hickory forests dominate the northeastern region while pine and oak-pine forests are concentrated in the southern region. Southeastern counties that are 50% or more forested include Latimer, Pushmataha, McCurtain, and LeFlore (Figure 2: Birdsey and Bertelson, 1988).

The major commercial timber species in the Mid-Southern United States, Loblolly and Shortleaf pines, are found in the pine and oak-pine forests of southeastern Oklahoma. As a result, forest industries are concentrated in this region, particularly in three of the southeastern counties; Pushmataha, McCurtain, and LeFlore (Wheatcraft and Lewis, 1986).



SOURCE: Birdsey and Bertelson, 1987: 30 p.

Figure 1: Forested Counties of Eastern Oklahoma

Study Area

Based on the forest resource, timber market strength, and the presence of timber industries, the study area selected for this research included Latimer, McCurtain, and Pushmataha counties in Southeast Oklahoma. Northeastern forest counties were not included in this study. The forest resource in the Northeast is predominantly mixed upland hardwoods. Timber markets exist but generally are not as strong as those in the southeast. To focus on NIPF landowners most likely to benefit from and be interested in forest management, the study area was limited to three counties in southeastern Oklahoma.

Study Population

The study population consisted of NIPF landowners in the three target counties who owned at least 40 acres of contiguous forest land. The 40 to 50 acre class represents a transitional benchmark where the likelihood to invest in forest management increases significantly (Webster and Stolenberg, 1959; Jones and Thompson, 1981; Cubbage, 1986). Below 40 acres, investment in forest management practices sharply declines.

Donovan (1987) used aerial photographs from the Agricultural Stabilization and Conservation Service and Soil Conservation Service (SCS) offices to identify potential

NIPF land. Using legal descriptions and county tax rolls, or SCS ownership records, Donovan (1986) identified over 8,000 NIPF landowners who owned at least 40 acres of forest land. These NIPF landowners owned over 1.5 million acres of forest land in eastern Oklahoma.

This same procedure was followed during 1988 to 1990 to update the list of NIPF landowners consisting of landowner names, addresses, and land descriptions of fifteen eastern counties of Oklahoma. The resulting data base from the Extension Forestry project was used for this study of three southeastern counties. Because forest tracts less than 40 acres were excluded, the influence of small tract size as a potential management constraint was limited; the landowners identified were more likely to be interested in forest management.

Sampling Methods

Each landowner on the NIPF list in McCurtain, Latimer, and Pushmataha counties was assigned an unique identification number to (number) allow each member to be counted only once in the frame or list, providing an equal probability of selection for each member. The identification number was used in the sampling procedure. Duplicates, timber corporations, tax exempt land, and properties less than 40 acres were excluded from the frame.

The total number of landowners for each county was determined (Table II) and combined, resulting in a total

population of 3,018 landowners. The percentage of NIPF landowners for each county was calculated to determine the most appropriate sampling plan to derive equal representation in each county. Differences between counties were anticipated, especially the percentage of absentee landowners. To minimize possible bias by unknowingly oversampling absentee landowners or other landowner types, equal representation of each county was necessary.

To achieve equal representation of the NIPF landowners in each county, each county survey sample represented 7.6% of the total survey population of 3,018 landowners. The final sample size was 690 and represented 22.8% of the total survey population (Tables II and III).

TABLE II

COUNTY NIPF LANDOWNER POPULATION

County	Number of Landowners	Percent of Total
Latimer	1,206	40%
McCurtain	751	25%
Pushmataha	1,061	35%
Total	3,018	

TABLE III

SAMPLE SIZE FOR EACH COUNTY

County	Sample size (n)	% of Co. Pop. (n/Co. Pop)	% Total N n/N
Latimer	230	230/1,206	19.1%
Pushmataha	230	230/1,061	21.7%
McCurtain	230	230/ 751	30.6%
Total	690		22.8%

The desired response rate to the mail questionnaire was 50 to 65%, a rate deemed acceptable based upon the nature and length of the survey, the survey population, and an anticipated undeliverable rate of approximately 12%. The anticipated response rate was based on the response rate to a pre-test of the questionnaire and response rates to previous mail questionnaires in the study area. The response rate to the pre-test of the questionnaire using only two follow-up procedures was 44%. The initial response rate to a previous Oklahoma NIPF landowner survey was only 21% (Thompson, 1978).

Data Collection Methods

A mail questionnaire was used to collect data for the purposes of this study. This data collection method was determined to be the most practical method despite the potential problem of low response rate to the questionnaire. Low response rates to mail questionnaires are well documented (Warde, 1988; Fowler, Jr., 1984, Bradburn, 1984), Low response rates, however, can be reduced by careful planning and administration of mail questionnaires (Dillman, 1978). Well designed mail questionnaires can achieve responses rates from 70% to 80% based on the research topic, survey population, and potential respondent interest in the research topic (Fowler, Jr., 1984; Dillman, 1978; Warde, 1988).

To achieve the highest response rate possible, the questionnaire design and administration was based on a well established and effective method, the total design method. Dillman's (1978) total design method incorporates cover letters, follow-up reminders and postcards, visual appeal of the instrument, and careful questionnaire design and structure. Several studies using the total design method have achieved response rates as high as 90% (Dillman, 1978).

A telephone survey and personal interview were considered impractical for this study because of the cost of contacting non-resident landowners by phone and locating landowners for personal interviews. Many non-resident

landowners living in several states, other counties, and three countries were included in the sample population. Documenting the out-of-state phone numbers, placing long distance calls, or travel to these landowner residences would have been extremely costly and time consuming. Excluding this important landowner group, however, would have biased the study results. Therefore, to include all landowners in the sample population, a mail questionnaire was used for data collection despite the generally higher response rates reported for studies using telephone surveys and personal interviews (Dillman, 1978; Warde, 1988).

Questionnaire Development

The questionnaire design and implementation was based on the total design method (Dillman, 1978), previous survey examples, and other established and effective questionnaire methodology (Sudman, 1982; Bradburn, 1988; Labaw, 1988, and Fowler, Jr., 1984). The questionnaire was reviewed by knowledgeable researchers engaged in NIPF landowner and sociological research. Previous field work in the study area and discussions with foresters, landowners, and other natural resource professionals also contributed significantly to the development of the questionnaire.

Converse (1988) recommends conducting an "exploratory inquiry" involving unstructured, open-ended interviews with members of the target population to enhance a researcher's perspective of the research topic. Interviews with ten NIPF

landowners were conducted to explore and test possible research questions. These two to four hour long interviews were taped and transcribed to discover any recurrent themes, topics, or attitudes. The initial questionnaire content was based on information from these interviews.

Commonly used methods of obtaining information from surveys include open-ended or unstructured questions, multiple choice or structured questions, Likert scales, and rankings (Warde, 1988; Fowler, Jr., 1984). These methods can be used to investigate factual information, opinions, perceptions, and information or knowledge levels (Dillman, 1978; Converse, 1988). The questionnaire was designed to allow comparisons to those concepts previously studied in NIPF research. Topics not previously studied in Oklahoma were also included in the questionnaire.

Questionnaire Content

Briefly, the topics investigated in the questionnaire were:

- * Demographic Information and Ownership Characteristics
- * Forest and Land Management Activities
- * Ownership Objectives and Perceptions
- * Personal Background and Childhood Forest Experience

Demographic Information. Multiple choice or structured questions are useful for obtaining factual information including age, income, education, residence, and other

characteristics (Warde, 1988; Dillman, 1978). To measure NIPF landowner demographic, ownership, and land characteristics multiple choice questions were used. Specifically, variables determined from multiple choice or fill-in-the-blank questions included: acreage, ownership tenure, acquisition method, ownership type, age, income, forest type, use of a written management plan, and type of assistance preferred.

Demographic data are often considered sensitive information. Dillman (1979) recommends that demographic questionnaire appear at the end of a survey because of the sensitive nature of some of these questions. Placing them at the end allows some degree of trust and interest to be built as the respondent works through the instrument. Based on this recommendation, all demographic questions were placed at the end of the survey.

Forest and Land Management Activities. The level of forest management was determined by multiple choice and binomial (Yes/No) questions. This was the easiest most expedient method of documenting these levels. Questions in Sections I and IV were aimed at documenting forest management levels and general ownership characteristics such as activities and acreage size.

Ownership Objectives. Typal or Likert scales measure various degrees of opinion by requiring the respondent to agree or disagree with presented statements (Sommer, 1988).

Points on the scale generally range from not important to very important. The number of points can vary with an indifference or neutral point dividing the scale. Too many points, however, affect the reliability of the data, whereas too few points provide insufficient data. Symmetric scales do not include an indifference point but force an opinion (Warde, 1988). A Symmetric Likert scale with four points was selected to measure the relative importance of different ownership objectives.

Perceptions and opinions can be measured using multiple choice questions, Likert scales, and yes/no questions. Multiple choice questions were used to determine perceptions towards time spent on forest land, reasons for harvesting, and reasons for not planning to harvest. The possible choices represented combined lists for similar questions used in previous NIPF surveys. The questions concerning time spent on the land reflect an attempt to further document perceived benefits landowners realize from their forest land.

Family Background and Past Forest Experience. Early experiences with forest land and family background can affect management decisions (Bliss, 1988). Forest and wilderness values develop out of an individual's background, culture, experiences, and beliefs (Taun, 1975). To explore this idea, respondents were asked to relate their childhood forest experiences and the possible effects on their ownership objectives. Because this type of information has

not previously been investigated in Oklahoma, an open-ended question format was used.

Open-ended questions are useful when investigating previously unexplored concepts and ideas despite the disadvantages of the format (Denzin, 1980; Dillman, 1978). Responses to the open-ended questions were analyzed to discover recurrent themes, words, and concepts (Lofland, 1988). Similar themes, words, or concepts were grouped together and coded for future quantitative analysis. Colleagues familiar with the specific research topic and natural resource management in general independently reviewed and categorized the initial list of responses. This review validated the groups developed by the researcher and served as a reality check (Lofland, 1988; Berg, 1989).

Pretesting the Questionnaire

Pretesting a survey is recommended by researchers (Converse, 1988; Dillman, 1979; and Sudman, 1982). A pretest can test specific questions, predict responses rates, and analyze overall questionnaire structure (Converse, 1988). To test the overall design and specific questions of the mail survey, a pretest was conducted resulting in further revisions to the questionnaire. The response rate from the pretest was 44% after two mailings.

The administration of the final questionnaire was based on Dillman's (1978) recommendations in total design method. The initial mailing included: 1) a cover letter assuring

confidentiality and explaining the survey objectives signed by the Extension Forestry Specialist from Oklahoma State University; 2) a questionnaire; and 3) a pre-addressed, stamped return envelope. The cover letter, questionnaire booklet, and pre-postage paid pre-addressed envelope were mailed together in official Cooperative Extension envelopes with metered postage.

Researchers have investigated possible non-response bias from using metered mail versus stamped mail (Warde, 1988; Dillman, 1978). Studies using individually stamped envelopes, suggesting a personalized approach have reported slightly higher response rates (Warde, 1988). The pre-test used this personalized approach resulting ^(1.4) a 44% response rate. Although, the administration of the final questionnaire did not use stamped envelopes, the official looking nature of the envelopes potentially countered any possible bias towards the metered postage. The final response rate was 47.%.

To reduce follow-up mailing costs and aid in determining response, each questionnaire was color coded by county and marked with an identification number. Identification numbers were erased after data entry to assure confidentiality. The telephone number and name of the researcher were included on the questionnaire if individuals had questions or comments regarding the study.

Two weeks after the first mailing, a follow-up letter signed by the Extension Forestry Specialist was sent to

individuals who had not returned the survey. Two weeks after the second mailing, a third and final mailing was posted which included a second questionnaire, a final reminder letter requesting assistance, and a pre-addressed, stamped envelope. Copies of the cover letters and questionnaire are included in Appendices A and B.

Analysis

The data were coded and analyzed using two standard statistical packages: the Statistical Analysis Software System (SAS) and the Statistics Package for the Social Sciences (SPSS). Three different data subsets were identified using the following: 1) county where the forest land was located; 2) resident or non-resident status; and 3) forest manager or non-manager status. Forest managers were defined as respondents who had conducted at least one of the forest management activities listed in Question 6, Section 4 of the questionnaire (Appendix B). Differences were expected to exist among the data subsets based on previous research suggesting that resident and non-residents represent different populations (Alden, 1990; Thompson, 1979) and forest managers differ from those landowners not managing for forest products (Greene, et al. 1986). Differences between study area counties were also anticipated.

The data were divided into three different groups and statistically analyzed. Grouped responses were examined using chi-square analyses to determine statistically significant differences using an alpha of 0.05. Chi-square analysis is a non-parametric test often used in the behavior and social sciences (Schmidt, 1979). Non-parametric tests are useful when the data are nominal or ordinal and when data are from non-normal distributions (SPSS, 1990; Schmidt, 1979). Because the study population was not normally distributed and the data collected were ordinal and nominal or non-continuous variables, chi-square analysis was determined to be an appropriate test.

CHAPTER IV

RESULTS AND DISCUSSION

Analysis of the survey data are presented by 1) demographic characteristics and 2) landowner comparisons. For purposes of this study, a resident was defined as a landowner either living on their forest land or in the same county as their forest land. A non-resident was defined as a landowner living outside of the county, state, or country as their forest land. A forest manager was defined as a landowner who had conducted at least one forest management activity as determined by their response to question number 6 of Section V. of the survey (Appendix B). Forest management activities included:

- *Fire Control Activities including Fire Lanes
- *Pruning of Potential Crop Trees
- *Planting or Seeding Trees
- *Site Preparation Activities
- *Applying Insect/Disease Control Treatments
- *Thinning Undesirable Trees
- *Harvesting Timber
- *Building Permanent Road Through Forest Land
- *Conducting Prescribed Burning

Response Rate

Of the original sample of 690, 314 (45.5%) were completed and returned and 60 (8.7%) questionnaires were not deliverable. Forty-five (6.5%) of the original sample indicated that they did not own forest land or did not complete the questionnaire. The unusable or undeliverable total of 105 was removed from the sample resulting in an adjusted sample size of 585. The adjusted overall response rate was 46.0%. This final response rate was slightly higher than the response to the pre-test of the survey (44.0%). Total and county response rates are summarized in Table IV. Similar response rates were exhibited by each county.

TABLE IV

SURVEY RESPONSE RATE BY COUNTY

Category	Total		County Latimer		County McCurtain		County Pushmataha	
	#	%	#	%	#	%	#	%
Original Sample	690	100.0%	230	33.3%	230	33.3%	230	33.3%
Undeliverable	60	8.7%	17	7.4%	22	9.6%	21	9.1%
Unusable	45	6.5%	23	10.0%	13	5.7%	9	3.9%
Adjusted Sample	585	100.0%	190	32.9%	195	33.8%	200	34.7%
Usable Response	269	46.0%	95	50.0%	85	43.6%	89	44.5%

General Demographic Characteristics

Landowner demographic characteristics include gender, age, income, education, marital status, employment status, and ethnic and personal background. Also included for purposes of demographic characteristics discussion are the amount of forest land and total land owned, how the land was obtained, how long landowners have owned the property (land tenure) and ownership type including individual, family, corporation, and land trust.

Demographic data were analyzed county by county, and by resident and manager status. Only those characteristics which exhibited statistical significance ($p < 0.05$) or were of special interest are presented for discussion purposes. Complete tables of demographic data can be found in Appendix C. *Where is this?*

The average NIPF landowner in the three county study area was a 60 to 62 year old male, of Scottish-Irish decent, who completed high school, was a retired professional, earned \$30,000 to \$39,999 a year, and was a non-resident. He purchased his 40 to 100 acre forest tract approximately 25 years ago from a non-relative, held the land in an individual ownership or jointly with his wife, and (planned) to either pass the land to his children or sell to interested buyers.

In this study, only 22.7% of the respondents lived on their forest land while 66.5% of the respondents lived in a

different county or state (non-residents). The most important difference between a National NIPF landowner study (U. S. Forest Service, 1990) and this Southeastern Oklahoma study is the percentage of people living on their forest land. In the National study, 41% of the respondents lived on the land.

Other than the percent of landowners living on the land, only slight differences in general demographic characteristics between the National study and this study exist. For example, in the National Private Land Ownership study of landowners owning at least 20 acres, the average landowner was a 58 year old white male, who made roughly \$30,000 - \$49,999 in 1985, and owned an average of 69 forest acres (U. S. Forest Service, 1990).

County By County Results

To determine landowner differences among the study area counties, general demographic characteristics, including ownership tenure, acquisition method, and ownership type, were documented and analyzed by county. Resident status ($p = 0.00$) and landowner education levels ($p = 0.03$) were the only variables to differ significantly between landowners in the three counties. Other differences which were evident but not statistically significant, will also be briefly discussed.

Resident Status. The most significant difference between the three counties was the percentage of non-resident respondents ($p = 0.00$). Residents were defined as respondents either living on the forest land or in the same county as the forest land. Non-residents were defined as respondents either living out of the county, state, or country of their forest land. Approximately 67% of the respondents were non-residents and 34% were residents (Table V).

TABLE V

RESIDENT STATUS AND PROXIMITY TO FOREST LAND BY COUNTY

	Total		County Latimer		County McCurtain		County Pushmataha	
	#	%	#	%	#	%	#	%
Proximity								
Live on Land	61	22.7%	8	8.4%	33	38.8%	20	22.5%
Same County	29	10.8%	9	9.5%	14	16.5%	6	6.7%
Same State	58	21.56%	30	31.6%	5	5.9%	23	25.8%
Out-of-State	118	43.8%	47	49.5%	33	38.8%	38	42.7%
Out-of-USA	3	1.2%	1	1.1%	0	0.0%	2	2.3%
Chi-Square $p = 0.000$								
Total Resident								
*Residents	90	33.5%	17	17.9%	47	55.3%	26	29.2%
*Non-Residents	179	66.5%	78	82.1%	38	44.7%	63	70.8%

In McCurtain and Pushmataha Counties, approximately 39% and 23% respectively of the respondents lived on their forest tract whereas only 8.4% of Latimer County respondents lived on the land. Approximately 82% of Latimer County landowners were non-residents whereas approximately 45% of McCurtain County and 71% of Pushmataha County landowners were non-residents. The lower number of non-resident landowners in McCurtain County was mainly a result of the small number (5.9%) who lived in Oklahoma but in a different county (Table V).

Education. Education level was significantly different ($p = 0.03$) between the studied counties. McCurtain County respondents had less education than respondents from the other two counties. Approximately 17% of McCurtain County respondents had less than a high school education. In Pushmataha and Latimer counties, 8.1% and 6.8% of respondents had less than a high school education. Approximately 70% of Pushmataha and 66% of Latimer respondents had more than a high school education while 54% of McCurtain County respondents had more than a high school education. However, the percentage of respondents with a post graduate degree was approximately equal across all three counties (14.7%).

Age. McCurtain County landowners are somewhat younger than Pushmataha or Latimer County landowners (Table VI). In McCurtain County, 33.7% of the respondents were over 65

years old. This percentage was lower than that of Pushmataha (46.4%) and Latimer (41.8%) County respondents. The mean age for McCurtain County respondents was 60.1 years. The mean age was 62.1 and 62.9 years respectively for Latimer and Pushmataha County respondents.

Land Tenure. The number of years that respondents had owned their forest land did not vary among counties. The mean tenure (24.1 years), was slightly less than the tenure (26.7 years) reported earlier by Thompson (1978). The mean tenure for McCurtain County was 22.9 years while the mean ownership tenure was 24.8 years for both Latimer and Pushmataha counties.

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Although the difference was not statistically significant ($p = 0.067$) the percentage of respondents who had owned the land for more than 45 years seemed to differ different between the three counties. Approximately 17% and 18% of Latimer and Pushmataha County respondents had owned their forest land for more than 45 years whereas only 7% of McCurtain County respondents had owned their land for more than 45 years (Table VI). The reason for this difference was not investigated.

TABLE VI
DEMOGRAPHIC CHARACTERISTICS BY COUNTY

Trait	Total		County Latimer		County McCurtain		County Pushmataha	
	#	%	#	%	#	%	#	%
Age								
26-35 yrs.	5	1.9%	3	3.3%	2	2.4%	0	0.0
36-45	29	11.2%	9	9.9%	8	9.6%	12	14.3%
46-55	47	18.2%	13	14.3%	24	28.9%	10	11.9%
56-65	72	27.9%	28	30.8%	21	25.3%	23	27.4%
66-75	71	27.5%	25	27.5%	19	22.9%	27	32.1%
76-85	28	10.9%	10	11.0%	9	10.8%	9	10.7%
> 85 yrs.	6	2.3%	3	3.3%	0	0.0%	3	3.6%
Mean Age				62.07		60.10		62.86
Education								
7 yrs. or less	3	1.2%	1	1.1%	2	2.4%	0	0.0%
Some High School	24	9.3%	5	5.5%	12	14.5%	7	8.1%
High School	67	26.0%	24	27.3%	24	28.9%	19	21.8%
Some College	63	24.4%	29	33.0%	13	15.7%	21	24.1%
Completed College	39	15.1%	11	12.5%	16	19.3%	12	13.8%
Some Graduate Work	24	9.3%	5	5.7%	4	4.8%	15	17.2%
Graduate Degree	38	14.7%	13	14.8%	12	14.5%	13	14.9%
$p = 0.03$								
Tenure								
1 - 5 yrs	22	8.7%	9	10.1%	7	8.5%	6	7.2%
6 - 15	80	31.5%	29	32.6%	25	30.5%	26	31.3%
16 - 25	59	23.2%	18	20.2%	20	24.4%	21	25.3%
26 - 35	40	15.8%	8	9.0%	21	25.6%	11	13.3%
36 - 45	17	6.7%	10	11.2%	3	3.7%	4	4.8%
> 45	36	14.3%	15	16.9%	6	7.3%	15	18.1%
Mean Tenure				24.79		22.87		24.75

$p = 0.067$

TABLE VI (Continued)

Trait	Total		County Latimer		County McCurtain		County Pushmataha	
	#	%	#	%	#	%	#	%
Gender								
Male	201	75.3%	64	68.8%	69	81.1%	68	76.4%
Female	66	24.7%	29	31.2%	16	18.8%	21	23.6%
Marital Status								
Never Married	8	3.0%	4	4.3%	3	3.5%	1	1.1%
Married	205	76.5%	69	73.1%	63	74.1%	73	82.0%
Divorced	15	5.6%	5	5.3%	8	9.4%	2	2.3%
Widowed	40	14.9%	16	17.0%	11	12.9%	13	14.6%

Gender and Marital Status. Latimer County had more female landowners (31.2%) than McCurtain County (18.8%). The reason for this difference is not known but is probably related to the higher percentage of widowed female respondents in Latimer County; approximately 17% of Latimer County and 13% of McCurtain County respondents were widowed (Table VI). Women represented 24.7% of the combined total respondents. This percentage is slightly higher than the percentage (20.0%) of women landowners reported in a recent National Landowner Study (U. S. Forest Service 1990).

Total Land and Forest Land Acreage. Individual total land ownership was not significantly different ($p = 0.30$) between the three counties. In Latimer and Pushmataha Counties, roughly 53% and 46% of the respondents owned 40 to 100 acres (Table VII). In McCurtain County, approximately 41% of the respondents owned 40 to 100 acres.

The mean total land acreage owned by respondents for Pushmataha (427.3 acres) was nearly twice that of Latimer (204.4 acres) and McCurtain (266.8 acres) County respondents. However, the mean includes one ownership over 10,000 acres, potentially inflating the mean and increasing the standard error (Table VII).

The difference among the counties and forest tract size was not statistically significant ($p = 0.85$). In Latimer and Pushmataha counties, approximately 57% and 55% of the respondents owned 40 to 100 acres and in McCurtain County, 59% of the respondents owned 40 to 100 acres of forest land.

TABLE VII

TOTAL LAND AND TOTAL FOREST ACREAGE BY COUNTY

County	Mean Total Ac.	Minimum	Maximum	Std Error
Total Land Acreage				
Latimer	204.37	40.00	3500.00	42.89
McCurtain	266.79	40.00	3000.00	65.10
Pushmataha	427.27	40.00	9999.00	144.46
Total Forest Acreage				
Latimer	169.96	10.00	5000.00	37.46
McCurtain	180.39	12.00	5000.00	59.21
Pushmataha	351.83	10.00	9999.00	135.49

TABLE VIII

TOTAL LAND AND FOREST ACREAGE BY
ACREAGE CLASS AND COUNTY

	Total		County Latimer		County McCurtain		County Pushmataha	
	#	%	#	%	#	%	#	%
Total Acres								
40 - 100	126	46.8%	50	52.6%	35	41.2%	41	46.1%
101 - 250	85	31.6%	29	30.5%	33	38.8%	23	25.8%
251 - 500	33	12.3%	10	10.5%	9	10.6%	14	15.7%
501 - 1000	17	6.3%	4	4.2%	5	5.9%	8	9.0%
1001 - 5000	6	2.2%	2	2.1%	3	3.5%	1	1.1%
> 5000	2	0.7%	0	0.0%	0	0.0%	2	2.3%

p = 0.30

TABLE VIII (Continued)

	Total		County Latimer		County McCurtain		County Pushmataha	
	#	%	#	%	#	%	#	%
Total Forest Acres								
40 - 100	148	56.9%	53	57.0%	47	58.8%	48	55.2%
101 - 250	78	30.0%	30	32.3%	23	28.8%	25	28.7%
251 - 500	20	7.7%	6	6.5%	6	7.5%	8	9.2%
501 - 1000	8	3.1%	2	2.2%	3	3.8%	3	3.5%
1001 - 5000	4	1.5%	2	2.2%	1	1.3%	1	1.2%
> 5000	2	0.8%	0	0.0%	0	0.0%	2	2.3%
p = 0.85								

Resident and Non-resident Results

To test whether Oklahoma non-resident and resident landowners represented different populations, analyses of demographic characteristics data was conducted. In a study of New York NIPF landowners Alden (1990) concluded that resident and non-resident landowners represented two distinct populations based on ownership objectives, demographic characteristics, and management activities.

The total percentage of non-resident landowners (66.5%) in this study was greater than the percentage (52.6%) reported by Donovan (1986) of the same three Oklahoma counties. However, Donovan's population represented the total population of NIPF landowners who owned at least 40 acres whereas the results from this study are based on a sample population of the NIPF landowners owning at least 40 acres in the three counties (Table IX).

TABLE IX

PERCENT OF RESIDENT AND NON-RESIDENT LANDOWNERS
FOR DONOVAN: 1986 NIPF STUDY AND THIS STUDY

	Total Percent (%)
Total Percent of Residents and Non-Residents from Donovan.	
*Residents	47.4%
*Non-Residents	52.6%

Total Percent of Resident and Non-Residents for This study	
Residents	33.5%
Non-Residents	66.5%

*Source: Donovan, David D. 1986. <i>Non-Industrial Private Forest Landowners of Oklahoma: State Statistics and Implications for Forestry Extension</i> . Stillwater, OK: USDA Coop. Ext. Serv. For. Ext. Report No. 1. 25 p.	

Significant differences in demographic characteristics were found in more variables between the resident and non-resident respondents than found in the county by county analysis. This supports the conclusions by Alden (1990) that resident and non-resident landowners represented two distinct populations based on demographic characteristics, ownership objectives and forest management activities.

Education. Education level between the two groups was significantly different ($p = 0.001$). Non-resident

landowners had significantly higher education levels than residents. The percentage of respondents having an education beyond high school was 71.9% for non-residents and 47.1% for residents. More non-residents (19.8%) than residents (4.6%) had completed a post-graduate degree (Table X).

These results appeared logical given the somewhat limited employment opportunities for higher educated residents in the study area. These individuals most likely would have to work elsewhere. In addition, non-residents not originally from the study area might have had better educational opportunities.

Gender. Gender was significantly different between the two groups ($p = 0.02$). A higher percentage of non-resident landowners were women (29.4%) than resident landowners (15.6%). Women comprised only 24.7% of the total survey population. Exactly what this difference signifies was unclear but could have been associated with the higher percentage of widowed non-resident landowners.

Marital Status. Marital status between the two groups was significantly different ($p = 0.03$). The main difference between resident and non-resident marital status was the percentage of widowed respondents. Approximately 18% of non-residents were widowed while only 9% of residents were widowed (Table X).

TABLE X

EDUCATION, GENDER, AND MARITAL CHARACTERISTICS OF RESIDENT AND NON-RESIDENTS

	Total		Non-Resident		Resident	
Trait	#	%	#	%	#	%
Education						
7 yrs. or less	3	01.2%	2	1.2%	1	1.2%
Some High School	24	09.3%	10	5.9%	14	16.1%
High School	67	26.0%	36	21.1%	31	35.6%
Some College	63	24.4%	47	27.5%	16	18.4%
Completed College	39	15.1%	27	15.8%	12	13.8%
Some Graduate Work	24	09.3%	15	8.8%	9	10.3%
Graduate Degree	38	14.7%	34	19.9%	4	4.6%
<i>p</i> = 0.001						
Gender						
Male	201	75.3%	124	70.6%	76	84.4%
Female	66	24.7%	52	29.4%	14	15.6%
<i>p</i> = 0.02						
Marital Status						
Never Married	8	3.0%	8	4.5%	0	0.0%
Married	205	76.55	129	72.5%	76	84.4%
Divorced	15	5.6%	9	5.1%	6	6.7%
Widowed	40	14.9%	32	18.0%	8	8.9%
<i>p</i> = 0.03						

Acquisition Method. Although the majority of residents (74.7%) and non-residents (58.3%) purchased their property from a non-relative, acquisition method was significantly different ($p = 0.02$) between residents and non-residents (Table XI). More resident respondents (74.7%) than non-resident respondents (58.3%) purchased their forest land from a non-relative. In addition, the percentage of non-residents who inherited their forest land (29.1%) was twice that of residents (11.5%). Roughly equal percentages of residents and non-residents purchased their forest land by the other listed acquisition methods.

TABLE XI

ACQUISITION METHODS OF RESIDENTS AND NON-RESIDENTS

Trait	Total		Non-Resident		Resident	
	#	%	#	%	#	%
Acquisition Method						
Purchase Nonrela.	167	63.7%	102	58.3%	65	74.7%
Purchase Relative	26	9.9%	17	9.7%	9	10.3%
Inherited	61	23.3%	51	29.1%	10	11.5%
Tax Sale	1	0.4%	0	0.0%	1	1.2%
Gift	5	1.9%	4	2.3%	1	1.2%
Other	2	0.7%	1	0.6%	1	1.2%

$p = 0.02$

Ownership Type. Although not statistically significant ($p = 0.089$) differences in ownership type were apparent between resident and non-resident respondents. Individual ownership was the prominent ownership type of both residents and non-residents although more residents (73.6%) than non-residents (55.8%) held their land in an individual ownership. More non-resident respondents held their land in family corporations, land trusts, or estates (Table XII). This difference was probably a result of more non-residents than residents acquiring their land through inheritance.

Land Tenure. The mean number of years respondents had owned their land was approximately the same for both residents (24.1) and non-residents (24.2). Although the mean tenure was roughly the same, slight differences in tenure between non-residents and residents were indicated.

These differences were distributed in both the lower and higher tenure classes (Table XII). More non-residents (43.5%) had owned their land for less than 16 years than residents (37.2%). However, approximately the same percentage of residents (12.8%) and non-residents (12.9%) had owned their land for more than 45 years. In addition, when the number of respondents who had owned the land for more than 35 years was calculated, more non-residents (23.2%) than residents (17.1%) had owned their land for more than 35 years. These differences, however, were not significant ($p = 0.15$).

TABLE XII
OWNERSHIP TYPE AND TENURE OF RESIDENT
AND NON-RESIDENT RESPONDENTS

Trait	Total		Non-Resident		Resident	
	#	%	#	%	#	%
Type of Ownership						
Indiv'l	161	61.7%	97	55.8%	64	73.6%
Family Ownership	9	3.5%	5	2.9%	4	4.6%
Nonfamily Partner.	1	0.4%	1	0.6%	0	0.0%
Family Co.	30	11.5%	24	13.8%	6	6.9%
Club	22	8.4%	16	9.2%	6	6.9%
Trust	28	10.7%	22	12.6%	6	6.9%
Estate	10	3.8%	9	5.2%	1	1.2%
$p = 0.089$						
Tenure						
1 - 5 yrs	22	8.7%	16	9.5%	6	7.0%
6 - 15	80	31.5%	57	33.9%	23	26.7%
16 - 25	59	23.2%	35	20.8%	24	27.9%
26 - 35	40	15.8%	21	12.5%	19	22.1%
36 - 45	17	6.7%	14	8.3%	3	3.5%
> 45	36	14.3%	25	12.9%	11	12.8%
$p = 0.15$						

Manager and Non-manager Results

One of the objectives of this study was to evaluate the differences between landowners who chose to manage their forest land for forest products (managers) and those who do

not (non-managers). To help evaluate whether or not these two groups were distinct populations, demographic data were analyzed based on manager status.

Respondents were classified as forest managers or non-managers based on their response to Question number 6 in Section V of the questionnaire (Appendix B). Landowners were asked to indicate which of the listed forest management practices they had applied in the past ten years. Respondents who indicated that they had engaged in at least one activity were then classified as a manager. The list of forest management practices and landowner responses are presented in Table XIII.

TABLE XIII

FOREST MANAGEMENT ACTIVITIES OF ALL RESPONDENTS

Activities	Number of Responses	Percent
No Forestry Activity	139	51.7%
Harvested Trees	76	28.4%
Thinned Trees	65	24.3%
Planted Trees	39	14.6%
Built Fire Lanes	28	10.5%
Built Permanent Road	24	9.0%
Prescribed Burned	22	8.2%
Pruned Trees	13	4.9%
Site Prep. Activities	16	5.8%
Insect/Disease Treatment	9	3.4%

Table XIV lists the total number of forest management activities and the percentage of respondents per activity level. Approximately 52% of the survey population had not conducted any of the listed forest management activities. These landowners were classified as non-managers for the purpose of this study. The data were analyzed to determine what significant ($p < 0.05$) differences existed between the two groups.

TABLE XIV
COMBINED TOTAL FOREST MANAGEMENT ACTIVITIES

# Activities		# Landowners	Percent
	0	139	51.7%
	1	56	20.8%
	2	32	11.9%
	3	20	7.4%
	4	7	2.6%
	5	3	1.1%
	6	4	1.5%
	7	1	0.4%
	8	4	1.5%
	9	1	0.4%
	No Answer	2	0.7%
<hr/>			
Total	269	100.0%	
<hr/>			
Total	Non-managers	141	52.4%
	Forest Managers	128	47.6%

The definition of a manager in this study differed from the definition utilized previously in an Oklahoma NIPF landowners study. Thompson (1978) used a series of attitude scales concentrating on the degree of agreement with certain forestry management practices such as clear-cutting, prescribed burning, and likelihood for planting.

The broader definition of a manager in this study served to divide the sample population into approximately equal parts. Although several differences in demographic characteristics between managers and non-managers were found, additional differences may have been exhibited had the definition of a manager not been so broad. Other studies have narrowed the definition of a forest manager as a landowner conducting at least two forest management activities (Blatner, 1984).

Residence. Residence was significantly different ($p = 0.00$) between forest managers and non-managers was the relationship. Respondents living in the same county or on the forest land were more likely to be forest managers than respondents living out-of-state or in another county (Table XV). Approximately 64% of the non-residents had not conducted any forest management activities. These landowners represented a significant portion of the respondents defined as non-managers.

TABLE XV

LANDOWNER RESIDENCE OF FOREST MANAGERS
AND NON-MANAGERS

Place of Residence	Total		Non-Manager		Manager	
	#	%	#	%	#	%
On the Land	61	22.7%	16	11.4%	45	35.2%
Same County	29	10.8%	10	7.9%	19	14.8%
Same State	58	21.6%	36	25.5%	22	17.2%
Another St.	118	43.9%	76	53.9%	42	32.8%
Out-of-USA	3	1.1%	3	2.1%	0	0 0%
TOTAL	269		141		128	

$p = 0.000$

Resident landowners implemented more management activities within the past 10 years than non-resident landowners. Approximately 71% of the residents were classified as managers whereas only 36% of the non-residents were managers (Table XVI). Nearly 65% of the non-residents had not conducted any forest management activity whereas only 29% of the non-residents were classified as non-managers.

TABLE XVI

TABLE OF MANAGER BY RESIDENT

Classification	Non-Resident		Resident	
	#	%	#	%
Non-manager	115	64.25%	26	28.89%
Manager	64	35.75%	64	71.11%
TOTAL	179	66.54%	90	33.46%

Gender. Gender was a significant difference ($p = 0.00$) between forest managers and non-managers. Of the survey population of female (66), 73% were classified as non-managers and 27% were classified as managers. This relationship was directly opposite to male respondents (201) of whom 55% were classified as managers and 45% were classified as non-managers (Table XVI).

One explanation of the strong gender difference was that more of the widowed respondents were female and many of these were non-residents, suggesting a minimal involvement with the property. In addition, the majority of the female respondents were retired and were over 60 years old. Women of previous generations, including those individuals from that age group, were generally not as likely to actively participate in management decisions as women at the present

time. The inference suggesting that older, widowed females might be less likely to manage their forest land appears plausible based on these observations.

TABLE XVII

MANAGEMENT STATUS OF MALE
AND FEMALE RESPONDENTS

Trait	Total #	%	Male #	%	Female #	%
Gender						
Manager	128	47.6%	110	54.7%	18	27.3%
Non-Manager	139	52.4%	91	45.3%	48	72.7%
Total	267	100.0%	201	100.0%	66	100.0%
$p = 0.00$						

Age. Age was significantly different between managers and non-managers ($p = 0.032$). Non-managers were generally older than forest managers. About 17% of the non-managers were older than 75 years whereas only 9% of the managers were in that age class (Table XVIII). This suggests that as landowners age they may be less able to participate in forest management activities.

Employment Status. Employment status, determined by whether the landowner was self-employed, employed, retired, unemployed, or a home maker, was significantly different ($p = 0.035$) between managers and non-managers. The two distinctive differences between forest managers and non-managers were the percentages of self-employed and retired individuals. Approximately 31% of the managers indicated that they were self-employed whereas 19% of the non-managers were self-employed. More non-managers were also retired (54%) than forest managers (37%). These findings differed from findings from other NIPF studies suggesting that retired landowners were more likely to manage than other landowners (McComb, 1975; Jones and Thompson, 1980).

Type of Ownership. Ownership type was statistically significant between forest managers and non-managers ($p = 0.031$). Most managers (71.8%) and non-managers (52.5%) were involved in individual ownerships. However, non-managers were more likely to be involved in land trusts, estates, clubs, and family corporations (44.5%) than forest managers (23.5%). For example, 13.1% of non-managers were involved in land trusts whereas only 8.1% of forest managers were involved in land trusts (Table XVIII).

TABLE XVIII

AGE, EMPLOYMENT AND OWNERSHIP CHARACTERISTICS OF MANAGERS AND NON-MANAGERS

Trait	Total		Non - Manager		Manager	
	#	%	#	%	#	%
Age						
26-35 yrs.	5	1.9%	0	0.0%	5	4.1%
36-45	29	11.2%	11	8.2%	18	14.6%
46-55	47	18.2%	26	19.3%	21	17.1%
56-65	72	27.9%	33	24.4%	39	31.7%
66-75	71	27.5%	42	31.1%	29	23.6%
76-85	28	10.9%	19	14.1%	9	7.3%
>> 85 yrs.	6	02.3%	4	3.0%	2	1.6%
$p = 0.032$						
Employment Status						
Employ.	62	23.3%	28	20.0%	34	27.0%
Self-Employ	65	24.4%	26	18.6%	39	31.0%
Unemployed	6	2.3%	4	2.9%	2	1.6%
Retired	123	46.2%	76	54.3%	47	37.3%
Homemaker	10	3.8%	6	4.3%	4	3.2%
$p = 0.035$						
Type of Ownership						
Indiv'l	161	61.7%	72	52.6%	89	71.8%
Family Ownership	9	3.5%	4	2.9%	5	4.0%
Nonfamily Partner.	1	0.4%	0	0.0%	1	0.8%
Family Co.	30	11.5%	21	15.3%	9	7.3%
Club	22	8.4%	15	11.0%	7	5.7%
Trust	28	10.7%	18	13.1%	10	8.1%
Estate	10	3.8%	7	5.1%	3	2.4%
$p = 0.03$						

Education and Income. Differences in education among managers and non-managers were not significant ($p = .260$). Approximately 40% of the non-managers and 38% of the forest managers had completed at least a college education; and 26% of non-managers and 23% of forest managers had some college education. In addition, approximately the same percentage of non-managers (14%) and forest managers (15%) had a post-graduate degree (Table XIX). Income level was not significantly different ($p = 0.34$). Approximately the same percentages of managers and non-managers were classified into each income bracket (Table XIX).

Education and income levels have been previously documented as significant variables associated with forest management levels. For example, a previous Oklahoma study found that non-management was positively correlated with higher education and income levels (Jones and Thompson, 1980). The findings from this study did not support these previous findings. The results, however, could be influenced by the operational definition of a forest manager utilized for this study. Respondents who had only harvested timber as a forest management activity were also defined as forest managers. In some cases, only harvesting timber may not indicate a conscious effort by landowners to employ conservation principles to the management of their land. If the definition had been more exclusive, requiring at least two forest management activities, the results would potentially have been different.

Ethnic Background. For the purpose of this study, ethnic background was determined by landowners response to question 7 of Section VI of the questionnaire. Respondents were asked to indicate all ethnic groups of both their mother and father. For example, a respondent could indicate that his or her mother's background was unknown and his or her father's background was Irish and Native American. The respondent's background therefore would be Irish, Native American, and Unknown. A more precise definition of ethnicity might have yielded different results although significant differences between managers and non-managers were not apparent.

Most respondents (80%) indicated that two or more ethnic groups comprised their ethnic background. Roughly 10% of the respondents indicated that they did not know their ethnic background. While 60% of the respondents indicated that they had some Scottish and English background, most of the respondents reported either one or more of six main ethnic backgrounds. Each of these six ethnic groups were reported by at least 11.0% of the respondents (Table XX).

TABLE XX
MANAGER STATUS OF RESPONDENTS
IN TOP 6 ETHNIC GROUPS

Ethnic Groups	Total		Non-Manager		Manager	
	#	%	#	%	#	%
Scot/English $p = 0.27$	153	60.2%	85	55.6%	68	44.4%
Irish $p = 0.88$	105	41.3%	56	53.3%	49	46.7%
German $p = 0.82$	63	24.8%	34	54.0%	29	46.0%
Native Amer. $p = 0.81$	61	24.0%	33	54.1%	28	45.9%
Dutch $p = 0.29$	42	16.5%	19	45.2%	23	54.8%
* French $p = 0.04$	28	11.0%	20	71.4%	8	28.6%

* Chi-square $p < 0.05$.

The percentage of respondents reporting a French background was the only significantly different ethnic background between managers and non-managers ($p = 0.04$). The remaining ethnic backgrounds did not differ significantly ($p < 0.05$) between managers and non-managers. Of the 28 (11%) of all respondents that indicated their ethnic background included French, more non-managers (71.4%) than managers (28.6%) reported a French background.

This difference, however, can be attributed to the non-resident status of the respondents reporting a French background. More non-residents (85.7%) than residents

(14.3%) indicated a French background. This data suggested that non-resident status contributed to a respondent being classified as a non-manager as opposed to having a French background (Table XXI).

TABLE XXI

MANAGER AND RESIDENT STATUS OF
RESPONDENTS REPORTING A
FRENCH BACKGROUND

Status	Total Number	Total Percent
Manager	8	28.6%
Non-Manager	20	71.4%
Total French	28	100.0%
Resident	4	4.7%
Non-Resident	24	85.7%
Total French	28	100.0%

Based on the results of the analysis, ethnic background was not determined to be a significant factor influencing forest management. These results do not support the research findings in Wisconsin (Bliss and Martin, 1989)

where ethnic background was identified as a potential variable affecting forest management behavior in the Wisconsin NIPF landowner study. The apparent reason that ethnic background is not as important in Oklahoma is that most of the NIPF landowners in this study indicated a multi-ethnic background. Another reason is that there are few ethnically and culturally pure communities in Oklahoma. Bliss (1990) identified several culturally pure communities in Wisconsin. Ethnically concentrated communities can help perpetuate values derived from that background.

During the course of the intensive interviews prior to questionnaire development for this study, several participants stated that personal family background was more of an influence than ethnic background particularly since many of the respondents reported that their ethnic backgrounds were so diverse. One participant suggested that growing up during the Depression was a major factor influencing his decision to keep and manage the family land. Ethnic background could possibly be a factor at deeper levels of personality and belief systems but the questionnaire was not designed to study this theory.

To further investigate the possible influence of childhood background and forest related experiences, respondents were asked to indicate what type of community they grew up in, if they remembered early forest related experiences, and if these experiences or lack of experiences affected their forest management decisions. Bliss and

Martin (1989) identified personal background and self identity as variables affecting forest management in a qualitative study in Wisconsin. The present study used open-ended questions to gather more qualitative answers to the personal background questions (see Questionnaire Appendix B). These results are presented in the next section focusing on management comparisons among residents and non-residents and managers and non-managers.

Resident and Non-Resident Landowner Comparisons

As discussed previously, resident and non-resident respondents represented different populations based on the significant differences found in demographic characteristics between resident and non-resident landowners. Additional variables influencing forest management decisions, forest management activities, objectives, and future harvest plans were analyzed to further investigate differences in management levels and constraints. Community background and childhood forest experience and individual forest and land acreage were also examined.

Childhood Community Background

Respondents were asked to indicate the type of community where they primarily spent their childhood. Community background was significantly different between residents and non-residents ($p = 0.00$). Approximately 67%

of the residents grew up on a farm whereas only 36% of the non-residents grew up on a farm (Table XXII). More of the non-residents (21.5%) grew up in cities with a population greater than 50,000 than did the resident respondents (1.2%). The percentage of non-residents from large metropolitan areas suggests that these non-residents were not originally from the study area but were either from out-of-state or from a metropolitan area in another area of the state because no large cities exist in the study area.

TABLE XXII

COMMUNITY BACKGROUND BY RESIDENT STATUS

Community	Total		Non-Resident		Resident	
	#	%	#	%	#	%
Farm	119	46.1%	61	35.5%	58	67.4%
Rural Non-Farm	33	12.8%	21	12.2%	12	14.0%
City < 1,000	10	3.9%	8	4.5%	2	2.3%
1,000 - 9,999	34	13.2%	23	13.4%	11	12.8%
10,000 - 49,999	24	9.3%	22	12.8%	2	2.3%
50,000 - 99,999	9	3.5%	8	4.6%	1	1.2%
Over 100,000	29	11.2%	29	16.9%	0	0.0%
Total	258	100.0%	172	66.7%	86	33.3%

$p = 0.000$

Childhood Forest Related Experiences

To further examine the influence of personal background on forest management decisions, respondents were asked whether or not they had early forest related experiences and if the experiences or lack of experiences affected their present forest management decisions.

Childhood forest experience was significantly different ($p = 0.019$) between residents and non-residents. Residents (85.4%) had more forest related childhood experiences than did non-residents (71.6%).

The effect of childhood forest experience on individual management decisions, however, was not significantly different between residents and non-residents ($p = 0.059$). Roughly 53% of the respondents indicated that their childhood experience affected their forest management decisions.

Approximately 18% of all respondents were not sure about the effect their childhood experiences had on their forest management decisions. More residents (23.8%) were not sure about any effects than non-residents (14.6%) suggesting that the question may have been misunderstood or ambiguous (Table XXIII).

The results also suggest that non-residents and residents may have very different forest related experiences including exposure to forest management practices. Residents growing up in southeastern Oklahoma, including the three county area, might have had some exposure to forest

management practices and timber harvesting because of the presence of a timber industry in the area for at least 50 years. Because the study area was also predominantly a rural area, residents would have also had more experience with other forest related activities such as hunting and cutting firewood. These experiences could possibly influence the residents to be more predisposed towards land and forest management, although the results did not indicate any significant differences between residents and non-residents.

TABLE XXIII

CHILDHOOD FOREST EXPERIENCE BY RESIDENCE STATUS

	Total #	%	Non-Resident #	%	Resident #	%
Childhood Experience						
Yes	191	76.1%	121	71.6%	70	85.4%
No	60	23.9%	48	28.4%	12	14.6%
p=0.016						
Did Experience Affect Management						
Yes	132	52.6%	88	51.5%	44	55.0%
No	75	29.9%	58	33.9%	17	21.3%
Not Sure	44	17.5%	25	14.6%	19	23.8%
Total	251	100.0%	171	68.1%	80	31.8%
p=0.059						

Objectives

Ownership objectives were the reasons and purposes respondents indicated for owning their forest land. Landowners were asked to indicate the level of importance of different ownership objectives. The objectives listed as being "very important" by respondents are provided in Table XXIV. Only three objectives were significantly different between residents and non-residents ($p < 0.01$). These were 1) residence; 2) place for hunting; and 3) part of the ranch or farm. The remaining objectives were not significantly different ($p < 0.05$) between residents and non-residents (Table XXIV).

TABLE XXIV

TOTAL NUMBER AND PERCENTAGES OF LANDOWNERS
INDICATING OWNERSHIP OBJECTIVES AS
"VERY IMPORTANT" AND P VALUES OF
DIFFERENCES BY RESIDENT STATUS

Objective indicated as "Very Important"	Total # Respondent	Percent Respondents	<i>p</i> value
Habitat for Wildlife	119	44.9%	0.18
Provide Forests for Future	97	36.6%	0.68
Scenic Enjoyment	95	35.9%	0.96
Satisfaction from Owning	89	33.6%	0.13
Real Estate Investment	72	27.2%	0.20

TABLE XXIV (Continued)

Objective indicated as "Very Important"	Total # Respondent	Percent Respondents	p value
Place for Residence	62	23.4%	0.00
Producing Timber	60	22.6%	0.12
Place for Recreation	59	22.3%	0.35
Retirement Investment	58	21.9%	0.34
Stop Development on Land	47	17.7%	0.66
Place to Hunt	37	14.0%	0.00
Part of Ranch/Farm	39	14.7%	0.00
Hedge Against Inflation	31	11.7%	0.63

Place for Residence. The importance of owning the forest land as a place for residence was significantly different between residents and non-residents ($p = 0.000$). Approximately 49% of the residents indicated that owning forest land for a place for residence was "very important" whereas only 10.7% of non-residents indicated residence was a very important objective. However, the fact that 10.7% of the non-residents did express that residence was very important suggested that objectives of some landowners might often reflect temporary circumstances. Future plans of non-residents might include using the forest land as a residence, especially for those landowners closer to their property.

Place to Hunt. Using the forest land as a place to hunt was more important to residents than to non-residents ($p = 0.000$). Approximately 27% of the resident respondents indicated that hunting was a very important objective whereas only 7% of the non-resident respondents indicated that the objective was very important. Although significantly different between the two groups, this was not a major objective for most respondents. Approximately 41% of the resident and 68% of the non-residents did not consider using their forest land for hunting as an important objective.

Part of Ranch. The forest land as part of a ranch or farm was significantly different between residents and non-residents ($p = 0.000$). Only 5% of the non-residents indicated that their forest land as part of a ranch or farm was very important whereas approximately 34% of the residents indicated that this was very important (Table XXV). Indicating that the forest land was very important as a part of a ranch or farm may reflect either unclear objectives or a lack of objectives.

TABLE XXV
SIGNIFICANTLY DIFFERENT OWNERSHIP OBJECTIVES
BY RESIDENT STATUS

Trait	Total		Non-Resident		Resident	
	#	%	#	%	#	%
Place for Residence						
Not Imp.	143	54.0%	114	64.4%	29	33.0%
Sit. Imp.	28	10.8%	22	12.4%	6	6.8%
Mod. Imp.	32	12.1%	22	12.4%	10	11.4%
Very Imp.	62	23.4%	19	10.7%	43	48.9%
$p = 0.00$						
Place to Hunt						
Not Imp.	157	59.3%	121	68.4%	36	40.9%
Sit. Imp.	32	12.1%	21	11.9%	11	12.5%
Mod. Imp.	39	14.7%	22	12.4%	17	19.3%
Very Imp.	37	14.0%	13	7.3%	24	27.3%
$p = 0.00$						
Part of Ranch/Farm						
Not Imp.	168	63.4%	140	79.1%	28	31.8%
Sit. Imp.	29	10.9%	19	10.7%	10	11.4%
Mod. Imp.	29	10.9%	9	5.1%	20	22.7%
Very Imp.	39	14.7%	9	5.1%	30	34.1%
$p = 0.00$						

Acreage Comparisons

The total acres in the individual landowner ownership and the total number of forest acres owned were compared between residents and non-residents to describe any potential differences. Differences in the total amount of land owned and the total acres of forest land owned were significantly different ($p < 0.05$) between residents and non-residents.

The mean total acreage; including forest and other types of land, for residents was 445 acres whereas the mean for non-residents was only 224 acres (Table XXVI). When this acreage was categorized in acreage classes, significant differences ($p = 0.00$) existed between residents and non-residents in the total acres owned by acreage class. Approximately 56% of the non-residents owned 40 to 100 acres of land whereas 26% of the residents owned 40 to 100 acres of land (Table XXVII).

The mean forest acreage for residents was roughly 300 acres whereas the mean forest acreage for non-residents was about 200 acres. When the forest acreage was categorized into acreage classed, the total number of forest acres owned by resident and non-residents landowners was also significantly different ($p = 0.04$). Approximately 63% of the non-residents owned from 40 to 100 acres of forest land whereas only 45% of the resident landowners owned from 40 to 100 acres. Residents owned more land in the higher acreage categories with 19.3% owning more than 250 acres. Only 10.0% of the non-residents owned more than 250 acres (Table XXVII).

TABLE XXVI
TOTAL LAND AND FOREST LAND MEAN ACREAGE BY
RESIDENT AND NON-RESIDENT STATUS

County	Mean Total Ac.	Minimum	Maximum	Std Error
Total Acreage				
Resident	445.30	40.00	8218.00	109.24
Non-Resident	223.70	40.00	9999.00	59.81
Total Forest Acreage				
Resident	299.41	10.00	7000.00	96.30
Non-Resident	200.25	10.00	9999.00	58.32

TABLE XXVII
TOTAL AND FOREST ACREAGE CHARACTERISTICS
BY RESIDENT STATUS

Trait	Total		Non-Resident		Resident	
	#	%	#	%	#	%
Total Acres Owned by Acreage Class						
40 - 100	126	46.8%	103	57.5%	23	25.6%
101 - 250	85	31.6%	52	29.1%	33	36.7%
251 - 500	33	12.3%	13	7.3%	20	22.2%
501 - 1000	17	6.3%	8	4.5%	9	10.0%
1001 - 5000	6	2.2%	2	1.1%	4	4.4%
> 5000	2	0.7%	1	0.6%	1	1.1%

$p = 0.000$

TABLE XXVII (Continued)

Trait	Total		Non-Resident		Resident	
	#	%	#	%	#	%
Total Forest Acres by Acreage Class						
40 - 100	148	56.9%	111	62.7%	37	44.6%
101 - 250	78	30.0%	48	27.1%	30	36.1%
251 - 500	20	7.7%	10	5.7%	10	12.1%
501 - 1000	8	3.1%	6	3.4%	2	2.4%
1001 - 5000	4	1.5%	1	0.6%	3	3.6%
> 5000	2	0.8%	1	0.6%	1	1.2%
$p = 0.04$						

Forest Management Activities

In Section V of the questionnaire landowners were asked to report the forest management activities which they had applied to their forest land. The forest management choices presented to the respondents were:

- *Fire Control Activities including Fire Lanes
- *Pruning of Potential Crop Trees
- *Planting or Seeding Trees
- *Site Preparation Activities
- *Applying Insect/Disease Control Treatments
- *Thinning Undesirable Trees
- *Harvesting Timber
- *Building Permanent Road Through Forest Land
- *Conducting Prescribed Burning

Forest management activities were significantly different ($p < 0.05$) between residents and non-residents. A greater percentage of non-residents (64.0%) had not conducted any of the forest management activities than residents (27.8%). Residents and non-residents differed in the application of a total of six forest management practices (Table XXVIII).

TABLE XXVIII

FOREST MANAGEMENT ACTIVITIES BY RESIDENT STATUS

Activities	Total		Non-resident		Resident	
	#	%	#	%	#	%
* Fire Control						
Fire Lanes	28	10.5%	10	5.6%	18	20.0%
Pruning Trees	13	4.9%	6	3.4%	7	7.8%
* Planted Trees	39	14.6%	20	11.2%	19	21.1%
Site Prep	16	6.0%	8	4.5%	8	8.9%
* Insect/Disease Treatment	9	3.4%	3	1.7%	6	6.7%
* Thinned Stand	65	24.3%	25	14.0%	40	44.4%
* Harvested	76	28.4%	37	20.8%	39	43.3%
Built Permanent Road	24	9.0%	12	6.7%	12	13.3%
* Prescribed Burning	22	8.2%	8	4.5%	14	15.6%
* No Activity	139	51.9%	114	64.0%	25	27.8%
* $p < 0.05$ level						
** $p < 0.01$ level						

Timber Harvest. Timber harvest activity was significantly different between residents and non-residents ($p = 0.00$). Approximately 43% of the residents had harvested timber whereas only 21% of the non-residents had harvested timber over the past 10 years. Respondents were not asked to report the acreage harvested or the price received. Such information might have provided more data concerning timber harvest practices including the value and amount of timber harvested.

Thinning. Thinning activity was significantly different ($p = 0.00$) between residents and non-residents. More residents (44.4%) had thinned their forest stand than non-residents (14.0%) over the past 10 years. Respondents were not asked to report what type of forest was thinned or what level of thinning was conducted. Data concerning thinning activity would have been useful for determining whether or not the thinning was part of a plan to produce income and improve the overall health and vigor of the forest or conducted for aesthetic reasons.

Tree Planting. Respondents were asked whether or not they had planted or seeded trees on their forest land over the past 10 years. Tree planting was significantly different ($p = 0.03$) between residents and non-residents. Although only 14.6% of all respondents had planted trees on their forest land, more of the residents (21.1%) had planted trees than the non-residents (11.2%).

Fire Control Measures. Fire control measures were primarily defined as the establishment of fire lanes for protection against wild fire. Although, only 10% of all respondents had conducted fire control measures, more residents (20.0%) than non-residents (5.6%) had conducted some type of fire control. Wild fire is common in the area and historically resulted from individuals burning the woods to improve understory grass production and control pests (Perkins, 1980). Presumably, residents would be more aware of the potential of forest fire and apply appropriate fire control measures.

Prescribed Burning. Prescribed burning levels were significantly different ($p = 0.002$) between residents and non-residents. Approximately 16% of the residents had used prescribed burning whereas only 5% of the non-residents had conducted prescribed burning on their forest land.

The results strongly indicate that resident landowners were more likely apply forest management practices than were the non-resident landowners. These findings were in direct opposition to earlier research findings suggesting that non-residents were more inclined towards commercial forest management (Jones and Thompson, 1980).

One possible explanation is the apparent increase of non-resident landowners in the three counties as a result of residents moving away from or selling their land to non-residents who have different ownership objectives not related to forest management. Non-residents living closer

to their forest land might be more interested in forest management than individuals living further away. For example, approximately 36% of the non-residents had conducted at least one of the listed forest management practices. Of these non-resident managers, roughly 32% lived in a different state than their forest land. Educational programs such as those organized by the Forest Stewardship Program of the Oklahoma Department of Forestry Services and by the Cooperative Extension Service may be useful in encouraging non-resident landowners to actively manage their forest land.

Past Timber Sales

The number of timber sales over the previous five years was also significantly different ($p = 0.00$) between residents and non-residents. Approximately 41% of the residents had sold timber in the past five years whereas only 17% of the non-residents had sold timber. The total percentage of respondents in this study who had sold timber (28.4%) was less than the percentage reported by Thompson (1978). During the time period of Thompson's study, approximately 41% of the landowners had harvested timber. It may be concluded that as the percentage non-resident landowners increases, the percentage of timber sales and general forest management decreases.

Another factor which could affect the number of non-residents selling timber is who initiated the sale. Of the

67 respondents who had sold timber, 64.2% had initiated the timber sale with more residents (72.2%) than non-residents (54.8%) initiating the timber sale. Although the difference was not significant ($p = 0.14$), the higher percentage of non-residents (45.2%) that reported a buyer initiated the sale implies that the non-residents might be interested in selling wood products but perhaps do not know who to contact or had not planned to sell timber. Educational programs targeting non-residents may be useful to ensure that non-resident landowners are fully aware of the value of their timber and are prepared to negotiate with timber buyers.

Respondents who had sold timber were asked to indicate whether or not they were satisfied with the price they received for their timber. The majority of both residents (77.8%) and non-residents (76.7%) were satisfied with the money they received from their last timber sale. There was also no significant difference concerning resident and non-resident landowners' satisfaction with the condition of the forest following harvest (Table XXIX).

Plans For Future Timber Harvest

Respondents were asked whether or not they had any plans for harvesting timber in the next 5 to 10 years. Respondents were provided with "Yes", "No", or "Undecided" categories in question 15, Section V of the questionnaire (Appendix B). Harvest plans were significantly different between residents and non-residents ($p = 0.00$). Approximately 32% of the residents indicated that they planned to harvest timber in the next 5 to 10 years whereas only 12% of the non-residents had 5 to 10 year harvest plans. The percentage of residents with harvest plans was less than the percentage of residents who had sold timber in the past 10 years (41%) suggesting a possible decrease in timber harvesting in the future.

More non-residents (39.7%) than residents (23.3%) were undecided about harvesting timber from their forest land over the next 5 to 10 years. This indecisiveness might reflect a lack of long-term plans for the forest land or unclear ownership objectives particularly among non-resident landowners. Approximately the same percentages of residents (44%) and non-residents (48%) indicated that they did not have any harvest plans for the next 5 to 10 years (Table XXX).

TABLE XXX

FUTURE TIMBER HARVESTING PLANS OF
RESIDENTS AND NON-RESIDENTS

Trait	Total		Non-Resident		Resident	
	#	%	#	%	#	%
Harvest Plans in 5 to 10 years						
Yes	50	18.9%	21	12.1%	29	32.2%
No	124	47.0%	84	48.3%	40	44.4%
Not Sure	90	34.1%	69	39.7%	21	23.3%
Total	264				90	
$p = 0.00$						
If No or Unsure to question 15, Any Harvest Plans for the Future						
Yes	52	23.9%	34	22.2%	18	27.7%
No	70	32.1%	51	33.3%	19	29.2%
Not Sure	96	44.0%	68	44.4%	28	43.1%
Total	216		153		65	
$p = 0.66$						

The 216 respondents who indicated that they were either undecided about harvesting or did not plan to harvest over the next 10 years were asked if they had plans to ever harvest timber from their forest land. No significant differences ($p = 0.66$) existed between residents and non-residents. Approximately 44% of both residents and non-residents were undecided about ever harvesting timber. Roughly the same percentage of residents (29%) and non-

residents (33%) indicated that they had no plans for harvesting timber from their forest land at any time in the future.

The apparent increase in the percentage of non-residents and the lack of harvest plans reported by the non-residents suggests that timber harvesting will be minimal from these lands. Efforts to motivate landowners to harvest their forest land may be most effective if focused on resident landowners and non-resident landowners living in the general proximity of their forest land. It also suggests that different educational programs may be needed to address the needs of non-residents landowners living a significant distance from their forest land.

Reasons for Not Harvesting Timber

Landowners who indicated that they had no plans for harvesting timber anytime in the future or who were undecided about future harvesting (169) were presented with a list of possible reasons for not harvesting timber and asked to circle the reasons that were important to them. The reason for not harvesting given by almost half of all respondents was the concern that timber harvesting changes the beauty of the forest. The second most important reason given (40%) was concern that harvesting adversely affects wildlife habitat. However, these two top reasons were not significantly different between residents and non-residents (Table XXXI).

Three reasons for not harvesting were significantly different between residents and non-residents. These were 1) immature timber; 2) loss of privacy and; 3) distance the residence was from the forest land.

Immature Timber. Immature timber as a reason for not harvesting in the future was significantly different ($p = 0.02$) between residents and non-residents. Approximately 23% of the residents reported immature timber as a reason for not harvesting in the future whereas only 9% of the non-residents gave this reason. Knowing that the timber was immature suggests the landowner is familiar with the forest stand and has an understanding of its potential. Resident landowners normally have more opportunity to visit their forest land thereby increasing their knowledge base. This difference may also imply that the resident landowners are more interested in harvesting timber from their forest land than non-residents although not at the present time. Residents might be more concerned with economic return from a timber harvesting by waiting for the timber to become mature and potentially more valuable.

Loss of Privacy. Approximately 18% of all respondents were concerned that harvesting timber from their forest land would result in a loss of privacy. This reason was significantly different ($p = 0.02$) between residents and non-residents. More residents (29.2%) were concerning about losing privacy than non-residents (13.2%). The higher

percentage of residents who lived on their forest land is a possible explanation for this difference. Landowners living on the forest land would naturally be more concerned with losing privacy than non-residents living far away from the land.

Distance. As previously suggested in another section of this report, distance from the forest land can be a major constraint to forest management. Distance as a reason for not harvesting was significantly different between residents and non-residents ($p = 0.03$). Approximately 9% of the non-residents reported distance as a reason for not harvesting whereas none of the residents gave distance as a reason. However, these percentages are based on the number of respondents who wrote in a reason in the "other" category presented as an option in the question. Landowners were asked to select the most important reasons for not harvesting from a list of 16 different reasons or to write in a reason if ^{none} not of the presented responses were appropriate (Questionnaire question 17, Section V Appendix B). If distance as a response category had been included in the list provided in the question, more respondents might have indicated distance as a reason for not harvesting timber.

Mistrust of Loggers. More residents (33.3%) than non-residents (20.7%) mistrusted loggers and therefore did not plan to harvest timber from their forest land. Although not

significantly different ($p = 0.08$) this apparent difference could be a result of residents having more experience with loggers through harvesting more timber in the past than non-residents. As reported in the forest management activities, more residents who had harvested timber over the past 10 years (31%) than non-residents (20%) indicated that they were not satisfied with the condition of their forest land after harvest. One respondent wrote that he would never have loggers on his property again. Mistrust of loggers and often foresters has been documented in other NIPF landowner studies (Hansen, 1983; Force, 1987). This sentiment presents challenges to foresters concerned with improving general forest management in addition to timber harvesting on NIPF lands.

Conditions for Harvesting

Respondents who had indicated that they had no plans for harvesting timber or who were undecided about harvesting were presented with four possible conditions or situations that might lead them to harvest timber from their forest land in Question 19, Section V of the questionnaire (Appendix B). These conditions were 1) if they needed emergency money; 2) to improve wildlife habitat; 3) if the price was good; and 4) if the trees were damaged or diseased. An additional response stating that they would not harvest under any condition was also a presented option in the question. Only 7% of the landowners indicated that

they would not harvest under any condition. The remaining percent of respondents indicated that they would harvest under certain conditions.

Need for Emergency Money. One condition that might lead landowners to harvest timber from their land was the need for emergency money. Approximately 39% of all respondents stated that they would harvest timber if they needed emergency money. This condition was significantly different ($p = 0.00$) between residents and non-residents. Approximately 59% of the residents indicated that they would harvest if they needed money for an emergency whereas only 30% of the non-residents would harvest timber under this condition. Although not a significant difference between residents and non-residents, residents had slightly lower income levels suggests that resident landowners might experience the need for emergency money more often than non-residents would therefore be willing to harvest.

Improve Wildlife Habitat. Roughly 45% of all respondents indicated that they would harvest timber from their forest land if the activity would improve wildlife habitat. This condition was significantly different between residents and non-residents ($p = 0.02$). A greater percentage of non-residents (50.7%) than residents (32.8%) would harvest to improve wildlife habitat.

Wildlife habitat was also a very important ownership objective for both residents and non-residents. Landowners

otherwise opposed to harvesting timber or thinning their forest might become interested in applying forest management if they are assured that the practices will improve wildlife habitat. The improvement of wildlife habitat as a condition for harvesting expresses the multiple objectives many landowners have for their forest land.

Good Price. Harvesting timber when the price received would be a good price was not significantly different between residents and non-residents ($p = 0.15$). Approximately 34% of both residents and non-residents indicated that they would harvest timber if the price was adequate. Although not significant, a slightly higher percentage of non-residents (36.6%) than residents (26.2%) reported that they would harvest if the price was right (Table XXXII). This implies that price reports and market information are important to non-residents who might not be familiar with the local timber industry or timber buyers.

Never Harvest. Only 7% of all respondents reported that they would not harvest timber under any circumstance. Differences between residents and non-residents were not significantly different ($p = 0.39$). Roughly 9% of the non-residents and 5% of the residents expressed that they would not harvest under any condition.

Although 32% of the respondents had stated that they had no plans for harvesting at any time in the future (Question 15 and 16; Section V), very few (7%) were certain

that they would never harvest under any condition (Table XXXII). This data suggests that most landowners, although not primarily interested in timber harvesting, realize that benefits from harvesting exist.

TABLE XXXII

CONDITIONS THAT MIGHT LEAD RESIDENTS
AND NON-RESIDENTS TO HARVEST
TIMBER FROM THEIR LAND

Trait	Total		Non-Resident		Resident	
	#	%	#	%	#	%
Conditions that Might Lead to Harvesting						
* If Needed Emer. Money $p = 0.00$	79	38.9%	43	30.3%	36	59.0%
* To Improve Habitat $p = 0.02$	92	45.3%	72	50.7%	20	32.8%
If Price was Good $p = 0.15$	68	33.5%	52	36.6%	16	26.2%
If Trees Diseased $p = 0.28$	108	53.2%	72	50.7%	36	59.0%
Would Never Harvest $p = 0.39$	15	7.4%	12	8.5%	3	4.9%
Total Respondents	203					

In addition, if a timber harvest can fulfill a landowner's ownership objectives or personal needs, he or she might be willing to harvest, especially if the overall health and vigor of the forest can be improved. For example, 59% of the residents and 51% of the non-residents indicated that they would be willing to harvest diseased or damaged trees from their property. This condition for harvesting suggested that the landowners were concerned about the health of their forest.

Forest Manager and Non-Manager Comparisons

Forest managers and non-managers represented different populations based on the significant differences found in demographic characteristics. To investigate how experiences, attitudes, and perceptions of landowners affect applied forest management practices, land-use attitudes, and future harvesting plans, additional variables were analyzed to further investigate the differences between forest managers and non-managers. Community background, childhood forest experience, and individual forest and land acreage were also examined.

Community Background

Community background was significantly different ($p = 0.00$) between managers and non-managers. A greater percentage of managers (58%) than non-managers (37%) came

from a farming background. Non-managers were more likely to have spent their childhood in a metropolitan area than were managers. Approximately 18% of the non-managers grew up in a city with a population greater than 100,000 whereas 9% of the managers grew up in a city with a population greater than 100,000 inhabitants. In addition, roughly 6% of the non-managers grew up in a city of 50,000 to 100,000 inhabitants whereas only 1% of the managers grew up in a city this size (Table XXXIII). The non-managers who grew up in a large metropolitan area were also likely to be non-residents because no cities of this size exist in the study area.

TABLE XXXIII

COMMUNITY BACKGROUND BY MANAGER STATUS

	Total		Non-Manager		Manager	
Community	#	%	#	%	#	%
Farm	119	46.1%	48	35.6%	71	57.7%
Rural Non-Farm	33	12.8%	17	12.6%	16	13.0%
City < 1,000	10	3.9%	9	6.7%	1	0.8%
1,000 - 9,999	34	13.2%	16	11.9%	18	14.6%
10,000 - 49,999	24	9.3%	19	14.1%	5	4.1%
50,000 - 99,999	9	3.5%	8	5.9%	1	0.8%
Over 100,000	29	11.2%	18	13.3%	11	8.9%
Total	258	100.0%	135	52.3%	123	47.7%

$p = 0.000$

Childhood Forest Related Experiences

It is possible that childhood experiences in the forest whether positive or negative, can affect attitudes towards land management and the environment later in life. To investigate the possible influence of childhood forest related experiences, landowners were asked whether or not they remembered any childhood experiences of being in the forest and if they believed the experience or lack of experience affected their land use decisions.

The presence of a childhood forest experience or memory was significantly different ($p = 0.005$) between managers and non-managers. Approximately 84% of the managers indicated that they had a childhood forest experience whereas only 69% of the non-managers had a childhood forest experience (Table XXXIV).

The possible effect of childhood forest experience on individual land management decisions was significantly different ($p = 0.001$). A greater percentage of managers (65%) than non-managers (42%) indicated that their personal childhood forest experience affected their present land management decisions. Approximately 49% of the non-managers reported that childhood forest experience did not affect their decisions whereas only 19% of the managers reported that their childhood forest experience did not affect their present land management decisions (Table XXXIV).

TABLE XXXIV

**CHILDHOOD FOREST EXPERIENCE
BY MANAGER STATUS**

Trait	Total		Non-Manager		Manager	
	#	%	#	%	#	%
Childhood Experience						
Yes	191	76.1%	91	68.9%	100	84.0%
No	60	23.9%	41	31.1%	19	16.0%
Total	251	100.0%	132	52.6%	119	47.4%
p=0.005						
Did Experience Affect Management						
Yes	132	52.6%	55	41.7%	77	64.7%
No	75	29.9%	52	39.4%	23	19.3%
Not Sure	44	17.5%	25	18.9%	19	16.0%
Total	251	100.0%	132	52.6%	119	47.4%
p=0.001						

Respondents were asked to write about the affect of their childhood forest experience on their forest management decisions. The question was presented in an open-ended format as an exploratory question. Not all of the respondents wrote their responses as requested by the question. Approximately 45% or 113 landowners did write their answers in the space provided. Four main categories

based on recurrent themes and statements written by the respondents were developed. The four main categories were 1) wise-use orientation or ethic; 2) preservation ethic; 3) ownership pride; and 4) love of nature. The love of nature was established as a separate category because respondents who gave love of nature as a response were not specific as to whether or not they were interested in a preservationist, wise-use, or some other approach to forest management (Table XXXV).

TABLE XXXV

EFFECTS OF CHILDHOOD FOREST EXPERIENCE
ON MANAGEMENT DECISIONS
BY MANAGER STATUS

Attitude	Total		Non-Manager		Manager	
	#	%	#	%	#	%
Wise-Use	43	38.1%	16	34.0%	30	45.5%
Preservation	30	26.5%	17	36.1%	13	19.7%
Ownership Pride	13	11.5%	6	12.8%	7	10.6%
Love of Nature	12	10.6%	7	14.9%	12	18.2%
Misc.	5	4.4%	1	2.1%	4	6.1%
Total	113		47		66	

Because only 45% of the respondents who indicated that they their childhood forest experiences affected their decisions wrote about how these experiences affected their forest management decisions, the analysis testing for differences between managers and non-managers was not conducted. However, differences were apparent between managers and non-managers.

Roughly 45% of the managers who responded to the question indicated that they developed a wise-use orientation towards forest management whereas only 34% of the non-managers indicated a wise-use orientation. The wise-use orientation was eloquently stated by several landowners who wrote that; "If you take care of the land, it would take care of you".

A greater percentage of non-managers (36.1%) appeared to be interested in preservation and protection of forest land than managers (19.7%). As discussed earlier, many non-managers are non-residents who grew up in large metropolitans areas located in different states. These individuals would most likely develop forest and environmental attitudes based on less intimate contact with forests and forest management than managers who grew up on a farm in the study area and had a day-to-day contact with forests and forest management.

Another important conclusion is that managers are also interested in preserving and protecting their forest land in addition to harvesting timber. Almost 20% of the managers

stated that they developed ideas of preservation from their childhood forest memories. Just as these managers were not solely wise-use or utilitarian in their attitude towards forest management, 34% of the non-managers indicated a wise-use as opposed to a preservationist, attitude. This suggests that landowners are not easily classified into identifiable categories because they often have attitudes that are diverse and sometimes contradictory.

Roughly equal percentages of non-managers (15%) and managers (18%) expressed that their childhood forest experiences affected their management decisions by leading to a greater appreciation and love of nature. As stated earlier, these respondents did not indicate specifically how this love of nature affected their management practices although one respondent stated; "It [his love of nature] probably keeps me from developing the land to its full economic potential".

Pride of ownership and desire to maintain family ties to the forest land were expressed by approximately equal percentages of non-managers (13%) and managers (11%). Many of these respondents expressed that they just "felt good about owning forest land" and "keeping it for future generations".

Although the apparent differences between managers and non-managers in the effect of their childhood forest experiences were not statistically analyzed, the preliminary results appear to indicate that these experiences may

contribute to the overall attitudes landowners have towards the environment and forest management. Further investigation might reveal possible relationships between management orientation and applied forest management activities. Deeper insight into how childhood experiences and education affect general environmental attitudes is important for developing educational and extension programs that enhance knowledge and understanding of forest management.

Ownership Objectives

Ownership objectives were the reasons and purposes that landowners owned their forest land. More differences in ownership objectives were found between forest managers and non-managers than found between residents and non-residents. Seven objectives were significantly different ($p < 0.05$) between managers and non-managers whereas only three objectives were significantly different between residents and non-residents. The objectives that were significantly different between managers and non-managers were 1) wildlife habitat; 2) providing forests for the future; 3) residence; 4) producing timber; 5) recreation; 6) place to hunt; and 7) part of ranch or farm (Table XXXVI).

TABLE XXXVI

TOTAL NUMBER AND PERCENTAGES OF LANDOWNERS
INDICATING OWNERSHIP OBJECTIVES AS
"VERY IMPORTANT" AND P VALUES OF
DIFFERENCES BY MANAGER STATUS

Objective indicated as "Very Important"	Total # Respondent	Percent Respondents	<i>p</i> value
* Habitat for Wildlife	119	44.9%	0.010
* Provide Forests for Future	97	36.6%	0.001
Scenic Enjoyment	95	35.9%	0.313
Satisfaction from Owning	89	33.6%	0.123
* Real Estate Investment	72	27.2%	0.096
* Place for Residence	62	23.4%	0.005
* Producing Timber	60	22.6%	0.000
* Place for Recreation	59	22.3%	0.025
Retirement Investment	58	21.9%	0.140
Stop Development on Land	47	17.7%	0.603
* Place to Hunt	37	14.0%	0.001
* Part of Ranch/Farm	39	14.7%	0.000
Hedge Against Inflation	31	11.7%	0.083
* Significant ($p < 0.05$)			

Place for Residence. Although only 23.4% of all respondents indicated that owning their forest land for a place of residence was very important, significant differences ($p = 0.005$) were found between managers and non-managers. Approximately 30% of the managers expressed that a place for a residence was a very important objective for their forest land whereas only 17% of the non-managers expressed this opinion. More non-managers were also non-residents implying that owning forest land as a place for residence would not be as important as other ownership objectives.

Place for Recreation. Owning the forest land as a place for recreation was a significantly different ($p = 0.03$) ownership objective between managers and non-managers. Approximately 26% of the managers considered recreation as a very important objective whereas only 19% of the non-managers considered the objective as very important. Non-managers were nearly twice as likely (46%) as managers (29%) to express that recreation was not at all an important objective (Table XXXVII).

These differences between managers and non-managers in objectives could be a result of the large number of non-managers who were also non-residents. Non-managers living far away from their forest land or who do not have time to spend on the land may not consider recreation as an important objective. In addition, landowners who are elderly, ill, or have limited free time would not be able to

spend recreational time on their forest land. This conclusion is supported by the differences observed in age and employment status between managers and non-managers. Non-managers tended to be older and were more likely to be retired.

Although landowners in this study were not asked whether or not they considered forest management activity as recreational, some managers might view forest management activities such as pruning or cutting wood as an important recreation activity. For example, Bliss (1989) reported that many forest managers consider forest management activity such as pruning or marking timber as recreation. These managers would benefit from information that allowed them to conduct their own forest management activities.

Producing Timber. Producing timber as an ownership objective was significantly different ($p = 0.000$) between managers and non-managers. Approximately 35% of the managers felt producing timber was a very important objective whereas only 11% of the non-managers felt that timber production was a very important ownership objective (Table XXXVII).

In addition, approximately 23% of the non-managers indicated that producing timber was a moderately important objective. The combined percentage of non-managers (34%) who stated that timber production was either a moderately important or very important ownership objective suggests that these landowners, although presently not managing their

forest land for wood products, might be willing to in the future.

Although managers, by definition, had conducted at least one forest management activity, producing timber was not an important objective to 20% of the managers (Table XXXVII). These landowners might not be interested in conducting future forest management practices if their ownership objectives were met by previous forest management activities. An example of previous ownership objectives met through timber harvesting would be clearing the forest for establishing a pasture or a place for residence. Future forest management activities on these lands might not be feasible or appropriate to the ownership objectives.

Wildlife Habitat. Owning forest land as a place for wildlife habitat was significantly different ($p = 0.01$) between managers and non-managers. Maintaining forest land for wildlife habitat was more important to forest managers (50.4%) than to non-managers (40.0%). Roughly 27% of the non-managers indicated that wildlife habitat was not an important objective whereas only 11% of the managers did not consider the objective to be very important.

Although 50% of the managers and 40% of the non-managers expressed that improving or maintaining wildlife habitat was a very important ownership objective, relatively few respondents were interested in using their forest land for hunting suggesting that most managers and non-managers value wildlife as part of the overall outdoor experience.

Place to Hunt. Although only 14.0% of all respondents considered using the forest land as a place to hunt to be very important, owning forest land as a place to hunt was significantly different ($p = 0.001$) between managers and non-managers. Approximately 18% of the managers expressed that owning their forest as a place to hunt was a very important objective whereas 10% of the non-managers expressed that the objective was very important. The largest difference was found in the percentages of non-managers and managers who indicated that the objective was not important. Of the non-managers, 70% did not consider hunting as an important objective whereas 47% of the managers did not consider the objective important.

One factor contributing to more managers than non-managers being interested in using their forest land as a place to hunt is resident status. More managers were residents and more came from rural backgrounds which suggests that these individuals might have hunted throughout their childhood years and who may continue to enjoy hunting.

Part of Ranch. The forest land as simply part of the ranch or farm was significantly more important to managers than to non-managers ($p = 0.000$). Approximately 20.8% of the managers indicated that having the forest as part of the ranch was very important whereas only 9.3% of the non-managers considered this to be very important. Of the non-managers, 85% considered the objective as only slightly important or not important. More managers may consider one

of their objectives for owning forest land as part of the ranch because they have better defined objectives than non-managers.

Forests for Future. Landowners were asked to rate the relative importance of providing forests for the future as an ownership objective. The ambiguity in the question resulted from two possible interpretations: preservation of future forests; or conservation for future forest and timber production. Despite this ambiguity, the difference between managers and non-managers was significant ($p = 0.001$). Nearly 46% of the managers indicated that providing forests for the future was very important whereas only 28% of the non-managers indicated that the objective was very important (Table XXXVII).

Whether the landowners were interested in providing forests for future timber production or for preserving the forests for future generations, it appears that many landowners are interested in sustaining their forest land. Resource professionals may use this information as they plan educational programs for NIPF landowners.

Mineral Development. Although not listed as a possible choice, mineral exploration or development was written in by respondents as an alternative objective. Of the 19 respondents who gave this alternative objective, 16 were given by non-managers. These 16 non-managers were also non-residents owning forest land in Latimer County. Only 2.3% of the managers wrote in this alternative objective. Mineral development as an ownership objective was significantly different ($p = 0.000$) between managers and non-managers.

Acreage Comparisons

The total acres in the individual landowner ownership and the total number of forest acres owned were compared between managers and non-managers to describe any potential differences. Differences in the total amount of land owned and the total acres of forest land owned were significantly different ($p < 0.05$) between managers and non-managers.

The total acreage owned by individual landowners was significantly different ($p = 0.002$) between managers and non-managers. Approximately 31% of the managers owned more than 251 acres while only 13% of the non-managers owned more than 251 acres (Table XXXVIII). Non-managers tended to own less total acreage than managers. Roughly 58% of the non-managers owned less than 100 acres of land whereas only 35% of forest managers owned less than 100 acres of land.

The total forest acreage owned by individual landowners was also significantly different ($p = 0.001$) between managers and non-managers. Non-managers generally owned less forest acreage than forest managers. Nearly 68% of the non-managers owned less than 100 acres of forest land whereas 45% of the managers owned less than 100 acres. Approximately 22% of the forest managers owned more than 250 forest acres whereas only 6% of the non-managers owned more than 250 acres. The data suggested that forest tract size was related to forest management activities.

TABLE XXXVIII

TOTAL AND FOREST ACREAGE BY MANAGER STATUS

Trait	Total		Non-Manager		Manager	
	#	%	#	%	#	%
Total Acres Owned by Acreage Class						
40 - 100	126	46.8%	81	57.5%	45	35.2%
101 - 250	85	31.6%	42	29.8%	43	33.6%
251 - 500	33	12.3%	10	7.1%	23	18.0%
501 - 1000	17	6.3%	6	4.3%	11	8.6%
1001 - 5000	6	2.2%	2	1.4%	4	3.1%
> 5000	2	0.7%	0	0.0%	2	1.6%
$p = 0.002$						
Total Forest Acres by Acreage Class						
40 - 100	148	56.9%	94	67.6%	54	44.6%
101 - 250	78	30.0%	37	26.6%	41	33.9%
251 - 500	20	7.7%	6	4.3%	14	11.6%
501 - 1000	8	3.1%	1	0.7%	7	5.8%
1001 - 5000	4	1.5%	1	0.7%	3	2.5%
> 5000	2	0.8%	0	0.0%	2	1.7%
$p = 0.001$						

Future Plans

Forest managers, by definition, had conducted at least one of the listed forest management activities while non-managers had not conducted any of the activities. To investigate the future plans of non-managers and managers, respondents were asked if they had a plan in mind for their forest land and if they had a written management plan.

Plan for the Next 5 to 10 Years. The first question asked if the respondents had any management plans or goals in mind for their forest land over the next 10 years. Responses to the question were significantly different ($p = 0.00$) between managers and non-managers. The majority of the non-managers (72%) did not have any goals or plans for their forest land over the next 10 years whereas 41% of the managers did not have any plans. A lack of ownership objectives or goals among most non-managers was implied.

Many of the managers who had previously conducted some type of forest management activity also did not have any goals or plans for their forest land over the next 10 years. As suggested previously, had the definition of a manager been more exclusive requiring the completion of at least two forest management activities, the results might have been different with fewer managers indicating a lack of goals or plans. The reasons behind this apparent lack of short term planning were not clear. A potential explanation, however, could be that many landowners do not purchase property with

clear intent or that the purpose for ownership changes because of other variables such as distance from the land, illness, limited access or time, and changing economic circumstances.

Written Management Plan. Respondents who had indicated that they had a plan in mind for their forest land over the next 10 years were asked whether or not they had a written management plan. Of the total number of respondents (115) who had a plan or goal in mind for their forest land, approximately 25% had a written management plan.

The existence of a written management plan was significantly different ($p = 0.00$) between managers and non-managers. Approximately 36% of the managers had a management plan whereas only 5% of the non-managers had a written management plan. The indication that 95% of non-managers did not have a written management plan was logical especially since most of these non-managers are also non-residents who might not have any contact with forestry professionals.

However, the majority of the managers (64%) also did not have a written management plan. These results imply that these landowners, although they have conducted some type of management activity in the past, might not have a well defined goals for managing their forest land (Table XXXIX). Landowners who had conducted only one forest management activity, although classified as managers for the purpose of this study, were perhaps not as committed to

forest management as managers with a written management plan.

Managers with a written management plan likely represent landowners interested in applying forest management for the purposes of maintaining wildlife habitat and aesthetic enjoyment in addition to producing wood products. If these landowners with a written management plan had been defined as managers for the study as opposed to the definition of used, results would have been different with more differences apparent between non-managers and managers.

TABLE XXXIX

EXISTENCE OF GENERAL PLANS AND
WRITTEN MANAGEMENT PLANS
BY MANAGER STATUS

Trait	Total #	%	Non-Manager #	%	Manager #	%
General Plan in Mind						
Yes	115	42.8%	39	28.1%	74	59.2%
No	151	57.2%	100	71.9%	51	40.8%
Total	266		139	52.6%	125	47.4%
p = 0.000						
If YES, is it a Written Management Plan						
Yes	29	25.2%	2	5.0%	27	36.0%
No	86	74.8%	38	95.0%	48	64.0%
Total	115		40	34.8%	75	65.2%

Plans for Future Timber Harvest

Respondents were asked whether or not they planned to harvest timber over the next 5 to 10 years. Respondents reporting that they had no plans or that they were undecided about harvesting were then asked if they had any plans to ever harvest timber from their forest land. As was previously demonstrated, managers and non-managers differed significantly ($p < 0.05$) in both the short term (5 to 10 years) and long term timber harvest plans.

Harvest Plans in Next 5 to 10 Years. Approximately 19% of all respondents indicated that they planned to harvest timber in the next 5 to 10 years while 47% and 34% indicated that they had no plans to harvest or were undecided about harvesting. The harvest plans over the next 5 to 10 years were significantly different ($p = 0.00$) between managers and non-managers. Managers (34.4%) were much more likely to have timber harvest plans for the next 10 years than non-managers (4.4%).

Plans to Ever Harvest. The total number of landowners who were either undecided about harvesting or who had no plans to harvest timber in the next 10 years (218) were asked whether or not they had plans to ever harvest timber from their forest land. These responses were significantly different ($p = 0.02$) between managers and non-managers. Approximately 33% of the managers who were either undecided or had no plans for harvesting in the next 10 years

indicated that they planned to harvest timber at some time in the future. Only 18% of the non-managers indicated that they planned to harvest timber from their forest land in the future. Approximately 36% of the non-managers and 25% of the managers had no plans to ever harvest from their forest land (Table XXXX).

TABLE XXXX

**TIMBER HARVEST PLANS
OF MANAGERS AND NON-MANAGERS**

	Total		Non-Manager		Manager	
	#	%	#	%	#	%
Harvest Plans in 5 to 10 years						
Yes	50	18.9%	6	4.4%	44	34.4%
No	124	47.0%	79	58.1%	45	35.2%
Not Sure	90	34.1%	51	37.5%	39	30.5%
If No, Any Harvest Plans for the Future						
Yes	52	23.9%	23	17.6%	29	33.3%
No	70	32.1%	48	36.6%	22	25.3%
Not Sure	96	44.0%	60	45.8%	36	41.4%
Total	218					

That only 38% of the total respondents (102/264) planned to either harvest timber in the next 10 years or planned to harvest timber in the future suggests that harvest levels from NIPF lands, in general, will be minimal in the future. Landowners who have previously completed some type of forest management activities are more likely to harvest timber and perhaps engage in other types of forest management practices.

Identifying these landowners and their plans for the future will be an important task of forestry professionals for targeting extension programs designed to meet the multiple management needs of NIPF landowners. In addition to helping landowners who plan to harvest or to more actively manage their forest land, different educational programs should be targeted to the landowners who are undecided about harvesting timber.

Reason For Not Harvesting Timber

Landowners who either did not plan to harvest at anytime in the future or who were undecided about harvesting in the future were asked to report the possible reasons affecting their decision. The reason for not harvesting given by most of the managers (52%) and non-managers (41%) was the concern that harvesting timber will change the beauty of the forest. The second most important reason for both managers (47%) and non-managers (36%) was concern that harvesting would adversely affect wildlife habitat. The

third most important reason for not harvesting given by 32% of the managers and 20% of the non-managers was the mistrust of loggers.

However, these top three reasons were not significantly different ($p < 0.05$) between managers and non-managers. Only two reasons for not harvesting were significantly different between managers and non-managers. The two reasons were 1) immature timber and 2) land tied up in an estate.

Immature Timber. Immature timber as a reason for not harvesting at anytime in the future was significantly different ($p = 0.001$) between managers and non-managers. Approximately 25% of the managers reported immature timber as a reason for not harvesting whereas only 6% of the non-managers gave this reason. Knowing that the timber is immature suggests that the landowner is familiar with the forest stand and has an understanding of its potential. Managers who have applied some type of forest management to their lands in the past would have more knowledge about timber than non-managers. This difference may also imply that economic return is more important to managers and that they may have recently harvested timber which produced the immature stand.

Land Held in an Estate. Although reported by only 4% of the total respondents, the land being held in an estate as a reason for not harvesting was significantly different

($p = 0.05$) between managers and non-managers. Approximately 6% of the non-managers reported the reason for not harvesting was that their forest land was in an undivided estate whereas none of the managers gave this reason (Table XXXXI). As the analysis of demographic characteristics demonstrated, more non-managers were involved in land trusts and estates than managers. This type of ownership could complicate the forest management decision because all family members or partners involved in the undivided estate must agree to proposed plans or decisions. If the estate members are each living in different areas or have different objectives for the property, reaching a agreement would be problematic.

TABLE XXXXI

REASONS FOR NOT HARVESTING TIMBER
AT ANY TIME IN THE FUTURE
BY MANAGER STATUS

Reason	Total		Non-Manager		Manager	
	#	%	#	%	#	%
Change Beauty	76	45.0%	45	41.3%	31	51.7%
$p = 0.19$						
Change Habitat	67	39.6%	39	35.8%	28	46.7%
$p = 0.17$						
Mistrust Loggers	41	24.3%	22	20.2%	19	31.7%
$p = 0.10$						
No Volume	36	21.3%	23	21.1%	13	21.7%
$p = 0.93$						

TABLE XXXXI (Continued)

Reason	Total		Non-Manager		Manager	
	#	%	#	%	#	%
Opposed to Cutting <i>p</i> = 0.24	34	20.1%	19	17.4%	15	25.0%
Would Lower Land Value <i>p</i> = 0.27	30	17.8%	22	20.2%	8	13.3%
Loss of Privacy <i>p</i> = 0.57	30	17.8%	18	16.5%	12	20.0%
Too Ill/Old <i>p</i> = 0.14	23	13.6%	18	16.5%	5	8.3%
*Timber Immature * <i>p</i> = 0.001	22	13.0%	7	6.4%	15	25.0%
Poor Quality <i>p</i> = 0.23	21	12.4%	16	14.7%	5	8.3%
No Market <i>p</i> = 0.84	18	10.7%	12	11.0%	6	10.0%
Plan to Sell Land <i>p</i> = 0.29	17	10.1%	9	8.3%	8	13.3%
Distance Too Great <i>p</i> = 0.21	11	6.5%	9	8.3%	2	3.3%
Too Much Work <i>p</i> = 0.16	8	4.7%	7	6.4%	1	1.7%
*Tied in Estate * <i>p</i> = 0.05	7	4.1%	7	6.4%	0	0.0%
Total	169	100.0%	109	64.5%	60	35.5%

Conditions for Harvesting

Respondents who either did not plan to harvest timber in the next 10 years or were undecided about harvesting were presented with four possible conditions that might lead them

to harvest timber from their forest land (questionnaire Question 19, Section V Appendix B). These conditions were 1) if they needed emergency money; 2) to improve wildlife habitat; 3) if the price was good; and 4) if the trees were damaged or diseased. An additional response stating that they would not harvest under any condition was the last presented option in the question.

Two conditions for harvesting were significantly different ($p < 0.05$) between managers and non-managers. These were 1) need for emergency money and; 2) if trees were damaged or diseased. The last option stating that they would not harvest under any condition, was also significantly different between managers and non-managers (Table XXXXII). These three differences will be discussed briefly.

Need for Emergency Money. Approximately 39% of the total number of respondents indicated that they would sell or harvest timber from their forest land if they needed the money. This condition was significantly different ($p = 0.03$) between managers and non-managers. More managers (48%) than non-managers (33%) indicated that they would harvest timber if they needed the money. As previously reported, many of the managers (50%) were residents. Although no significant differences in income levels of managers and non-managers were found, differences did exist between residents and non-residents suggesting that a potential need for money might exist among resident

managers. Had the 50 respondents who indicated that they planned to harvest timber from their forest land also been presented with the question, the results might have differed.

TABLE XXXXII

CONDITIONS THAT MIGHT LEAD MANAGERS
AND NON-MANAGERS TO HARVEST
TIMBER FROM THEIR LAND

Conditions	#	%	Non-Manager		Manager	
			#	%	#	%
*If Needed Emer. Money	79	38.9%	40	32.8%	39	48.2%
* $p = 0.028$						
Improve Habitat	92	45.3%	54	44.3%	38	46.9%
$p = 0.710$						
If Price is Good	68	33.5%	41	33.6%	27	33.3%
$p = 0.968$						
*If Trees Diseased	108	53.2%	55	45.1%	53	65.4%
* $p = 0.004$						
Never Harvest	15	7.4%	14	11.5%	1	1.2%
$p = 0.006$						
Other	14	6.9%	9	7.4%	5	6.2%
$p = 0.740$						
Total Respondents	203					

Diseased or Damaged Trees. Harvesting timber under the condition that the trees were diseased or dead was significantly different ($p = 0.004$) between managers and non-managers. Approximately 65% of the managers indicated that they would consider harvesting timber if the trees were diseased or damaged whereas only 45% of the non-managers indicated they would harvest under this condition. Being willing to harvest diseased or dead trees suggests that managers are familiar with their forest land and are concerned about the vitality and health of the forest.

The percentage (45%) of non-managers willing to harvest diseased and dead trees from their property may also imply that opportunities for increasing forest management on these forest lands exist. As previously reported, non-managers often do not have well defined goals for the management of their forest land although they express concern over preserving and protecting forests and wildlife habitat. Educating these landowners about forest health and vigor in relation to forest management activities would be one method of promoting appropriate forest management.

Never Harvest. Although only 7% of all respondents indicated that they would not harvest timber under any condition, this was significantly different ($p = 0.006$) between managers and non-managers. Approximately 12% of the non-managers reported that they would not harvest timber under any condition whereas only 1% of the managers reported that they would not harvest under any condition. This

difference implies that some non-managers are simply not interested in timber harvesting and will not respond to efforts aimed at increasing their interest in forest management.

However, only 7% of all respondents indicated that they would not harvest under any condition suggesting that most landowners would harvest timber if the conditions fit their personal needs and objectives. One landowner who indicated that he was not interested in ever harvesting timber from his forest land stated, "Never say never", implying his willingness to keep his options open.

The conditions under which most of the respondents would consider harvesting timber were (45%) to improve wildlife habitat; (53%) if the trees were diseased or damaged and; (39%) if they needed the money. This implies that landowner objectives and attitudes can change or shift under certain circumstances. Enhancing landowner knowledge of the principles of conservation and forest management can increase the awareness of the positive benefits of forest management. This would potentially result in increases in landowner participation in applied forest management.

CHAPTER V

SUMMARY AND CONCLUSIONS

A mail questionnaire was sent to 690 NIPF landowners in three southeastern Oklahoma counties. The purpose of this effort was to examine the demographic characteristics of landowners in southeastern Oklahoma and to investigate the possible relationship between personal background, experiences, and attitudes and the implementation of forest management activity. Ten demographic characteristics of landowners were compared by county, resident status and manager status using chi-square analysis. Resident and manager are defined in the Methods and Procedures chapter.

The only landowner demographic characteristics to differ between counties were resident status and education levels. More of the Latimer County landowners were non-residents than McCurtain and Pushmataha County landowners. The percentage of landowners living on their forest land was significantly greater in McCurtain and Pushmataha County than in Latimer County. Although roughly the same percentage of landowners in the three counties had post-graduate degrees, McCurtain County landowners tended to have less education than landowners from the other two counties.

While there were no differences in eight of the other demographic characteristics observed, resident status and education differences may impact landowner forest management activities and objectives and thereby influence the development and promotion of forestry extension and educational programs.

A number of demographic characteristics were observed to be significantly different between resident and non-resident landowners. Non-resident landowners tended to be more educated, were more likely to be female, owned less forest land, and were more likely to have inherited their forest land than resident landowners.

Resident landowners tended to come from rural farm backgrounds and to have had more childhood forest related experiences ^{from} non-residents. This implies that resident landowners might have had more experience with land and forest management practices in general and as a result, may be more inclined to actively manage their forest land. Although ownership objectives including timber production, wildlife habitat improvement, and scenic enjoyment did not differ significantly between resident and non-resident landowners, the ownership objectives of using the forest as a place of residence, as a place for hunting, and as part of a ranch were more important to resident than non-resident landowners.

Non-residents were less likely to have completed any forest management activities or to have sold timber in the

past 5 to 10 years than residents. Non-residents were also less likely to have any plans for harvesting timber from their land than residents. Non-resident landowners reported distance from the forest land as the reason for not planning to harvest timber from their forest land at anytime in the future. A number of non-resident landowners also indicated that they had never visited their forest property suggesting they may be unfamiliar with their forest land. In addition, fewer non-residents than residents had any plans or goals in mind for the overall management of their forest property suggesting that these landowners are only minimally involved with their forest land.

More resident than non-resident landowners not interested in harvesting timber in the next few years reported that immature timber was the reason behind their decision. Knowing that the timber is immature suggests that the resident landowner is familiar with the forest stand and has an understanding of its economic potential by waiting for the stand to mature and increase in value.

The percentage of non-resident landowners in the study area has generally increased since 1986. This increase and the lack of management goals in general, including harvest plans of non-resident landowners, suggests that timber production may continue to be minimal from these lands. Efforts to motivate landowners to harvest their forest land may be most effective if focused on landowners living in the general proximity of their forest land.

Landowners classified as forest managers differed from non-managers in resident status, age, employment status, ownership type, and acreage owned. Non-managers were more likely to be older, retired, owned less forest acreage, and to be more involved in land trusts, estates, and clubs. Education and income levels were not significantly different between managers and non-managers as observed in other NIPF landowner studies. The most important characteristic affecting forest management activity was the resident status. Non-residents comprised 64% of the non-manager population.

More managers than non-managers expressed that maintaining their forest land for wildlife habitat, providing forests for the future, producing timber, and providing recreational and hunting opportunities were very important ownership objectives. Non-managers tended not to have clear goals or objectives in mind regarding their forest land.

More managers came from a farm or rural background and had more childhood forest memories and experiences than non-managers. Childhood forest experiences significantly affected the forest management attitudes of more managers than non-managers. Results suggest that managers developed utilitarian or wise-use types of environmental attitudes as a result of their childhood forestry experiences whereas non-managers tended to be more preservation minded. Many of the non-managers were non-residents who grew up in large

metropolitan areas and had fewer childhood memories of the forest. These individuals would likely develop forest and environmental attitudes based on mass media and less contact with conservation and forest management. Many managers are equally interested in preserving and protecting in addition to managing their forest land.

Many of the non-managers did not have any management goals or plans for the future harvesting of their forest land. Managers, however, were more likely to have a written management plan and harvesting plans for their forest land. Results show that landowners who have previously completed forest management activities (managers) are more likely to harvest timber and continue forest management practices. Further investigation might reveal more about the relationships between environmental attitudes and applied forest management activities and is therefore important for developing educational and extension programs that enhance knowledge and understanding of conservation and forest management.

Because harvest levels from National Forests may decrease and only marginal increases in production from industrial lands can be expected, improved forest management on NIPF lands may be necessary to meet the multiple resource needs of the public. The demands on public and private forest lands for recreation, water quality, wildlife habitat in addition to wood products continue to increase, intensifying the importance of sustainable forest management

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on private forest lands for meeting the multiple resource needs of the future. Resource professionals are therefore challenged to inform and educate landowners as well as the public about the long-term benefits of forest management for meeting the resource needs and demands of society.

Extension and education programs aimed at promoting forest management can only be effective when resource professionals know the attitudes, characteristics, and objectives of their clients and can communicate information based on the different objectives and characteristics of these clients. Promoting and facilitating more effective communication between landowners and resource professionals through increasing the understanding of NIPF landowners was the underlying objective of this study.

Although much work towards understanding the motivations and attitudes of NIPF landowners remains, this study enhanced knowledge of the NIPF landowners of southeastern Oklahoma. A primary area for further study is more intensive inquiry into the motivations of individuals committed to forest management as indicated by the existence of a management plan or completion of a number of accepted forest management practices. Other recommendations for further study include:

1. Increased understanding into the relationship between landowner characteristics and forest management motivation.

2. Investigation into the influence of community background and childhood forest experiences on landowner environmental attitudes.
3. Further exploration of the relationship between landowner resident status, ownership needs and forest management behavior.

Educational and extension programs can utilize information on NIPF landowners to identify potential target groups and develop separate programs appropriate for different sub-groups or types of landowners. For example, educational programs which include an introduction to the forest ecology, biology, and current forest management practices of the area, may be needed to address the needs of non-residents landowners who have limited forestry knowledge and live a significant distance from their land. Programs providing information about timber valuation, local markets, and silvicultural practices that meet multiple objectives may be more appropriate for resident landowners more familiar with their forest land and forest management. In any event, extension and educational programs must recognize and accept the diversity in the level of knowledge, objectives and perceptions of landowners to ensure effective communication and appropriate program development.

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APPENDIXES

APPENDIX A

SAMPLE COVER LETTERS

February 27, 1991

Dear Oklahoma Forestland Owner:

Never before has there been so much discussion about the environment and how we use our natural resources, particularly private forests. Private and public forest landowners are trying to meet resource needs through appropriate land management. Policymakers are charged with the task of developing and evaluating policies that will meet the diverse needs of the public. Policymakers and extension personnel also need input from private landowners in developing appropriate educational programs. Knowing what landowners in Oklahoma think about their forest land will help in making decisions about future forestry extension programs.

Your household is one of a small number of Oklahoma forest landowners in which people are being asked to voice their opinion on these matters. It was drawn from a random sample of the forest area of the state. In order that the results will truly represent the thinking of landowners in Oklahoma, it is very important that each questionnaire be completed and returned before March 25. We have provided a self-addressed postage-paid envelope for your convenience.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so that we may check your name off of the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire or associated with the results.

The results of this research will be available to State Division of Forestry officials and Cooperative Extension personnel for developing future educational and extension programs. You may receive a summary of results by writing "copy of results requested" on the back of the return envelope, and printing your name and address below it. Please do not put this information on the questionnaire itself.

I would be most happy to answer any questions you might have. Please write or call. The telephone number is (405) 744-6432 during office hours or you may contact the Project Coordinator, T. L. Walkingstick at (405) 372-1422 during the evening.

Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script that reads "Steven Anderson".

Dr. Steve Anderson
Project Director

March 21, 1991

Dear Oklahoma Forest Landowner,

A couple of weeks ago a questionnaire seeking your opinion and attitudes about forest management was mailed to you. Your name was one of a few drawn from a random sample of Oklahoma forest landowners.

If you have already completed and returned it to us please accept our sincere thanks. If not, please do so today. Because it was sent to only a small sample of Oklahoma landowners it is extremely important that your opinion be included in the study if the results are to accurately represent the opinions of Oklahoma landowners. Again, be assured that your responses will be kept strictly confidential and never associated with your name.

If by some chance you did not receive the questionnaire, or it was misplaced, please call me at (405) 744-6432 and I will mail one to you immediately. Please also feel free to call if you have any questions. I look forward to receiving your reply.

Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read "T.L. Walkingstick".

T.L. Walkingstick
Project Coordinator

April 5, 1991

Dear Oklahoma Landowner,

Several weeks ago a questionnaire asking you to participate in a research project was mailed to you. The questionnaire concerns your feelings and opinions on forests and forest uses. Your name was one of a few drawn from a random sample of Oklahoma forest landowners.

If you have already completed and returned it to us please accept our sincere thanks. If not, please do so at your earliest convenience. In case the questionnaire was misplaced or lost in the mail, I have included another copy in this package. I would appreciate it if you would complete and mail back the questionnaire to me by April 26.

Because it was sent to only a small sample of Oklahoma landowners it is extremely important that your opinion be included in the study. The person who should fill out the survey is that person who currently or most recently owns or cares for the forest land. Forest land means any land covered mostly by trees of some type.

I thank you for your willingness to participate in my research project. Again, be assured that your responses will be kept strictly confidential and never associated with your name.

Please feel free to call at (405) 744-6432 or 744-5440 if you have any questions. I look forward to receiving your reply.

Thank you for your assistance. Happy Spring!

Sincerely,



Tamara L. Walkingstick
Project Coordinator
Ag Hall Room 037
Stillwater, OK 74078



Dr. Steven Anderson
Extension Forester
Ag Hall Room 262
Stillwater, OK 74078

APPENDIX B

SAMPLE QUESTIONNAIRE

OKLAHOMA NONINDUSTRIAL PRIVATE FOREST LANDOWNER QUESTIONNAIRE

Section I

- 1 How many acres of land do you own in PUSHMATAHA county?
 _____ ACRES
- 2 Do you own land in any other counties in Oklahoma? Circle the number.
 - 1 YES IF YOU OWN LAND:

COUNTY NAME _____	# ACRES _____
COUNTY NAME _____	# ACRES _____
 - 2 NO
- 3 How many acres of FOREST land do you own in PUSHMATAHA county?
 _____ ACRES
- 4 How many separate tracts or parcels are these forested acres divided into? Please list the acreage of each tract in the space below.

<u>NUMBER OF TRACTS</u>	<u>NUMBER OF ACRES</u>
NOT DIVIDED	_____ ACRES
TRACT 1	_____ ACRES
TRACT 2	_____ ACRES
TRACT 3	_____ ACRES
TRACT 4	_____ ACRES
TRACT 5	_____ ACRES
- 5 Approximately, how many years have you owned the majority of your forest land?
 _____ YEARS
- 6 How did you acquire the majority of your land? (Circle all the numbers that apply)
 - 1 PURCHASE FROM NONRELATIVE
 - 2 PURCHASE FROM RELATIVE
 - 3 INHERITED
 - 4 TAX SALE
 - 5 GIFT
 - 6 OTHER (Please explain) _____

- 7 What type of ownership is the major portion of your forest land held in? (Circle number)

1 INDIVIDUAL OWNERSHIP
2 FAMILY OWNERSHIP eg: HUSBAND-WIFE; SIBLINGS;
3 PARTNERSHIP WITH OTHER THAN FAMILY MEMBERS
4 FAMILY CORPORATION OR PARTNERSHIP
5 CLUB OR ORGANIZATION (Please specify) _____
6 LAND TRUST
7 ESTATE
8 OTHER CORPORATION (Please specify) _____
9 OTHER (Please specify) _____

- 8 Thinking about the future, what do you think will most likely happen to your forest land? (Circle number).

1 WILL BE PASSED ON TO CHILDREN
2 BROKEN INTO TRACTS AND SOLD
3 SOLD TO CHILDREN OR GRANDCHILDREN
4 SOLD FOR RETIREMENT MONEY
5 MAINTAINED IN AN ESTATE/TRUST
6 HAVE NEVER THOUGHT ABOUT IT
7 OTHER (Please specify) _____

Section II

Next, we would like to ask you a few questions about your general reasons for land ownership.

- 1 Landowners manage or own their forest land for many reasons. **Please explain in your own words what your main reason is for using or managing your forest land. (Explain in the space provided below).**

- 2 How important are the following reasons to you for using or managing your forestland? Please read over the list of ownership reasons below and tell us how important each of them are to you. *(Circle one response for every reason listed below).*

REASON	RESPONSES			
A Place for Residence	Not Important	Slightly Important	Moderately Important	Very Important
A Place for Recreation	Not Important	Slightly Important	Moderately Important	Very Important
Producing Timber or Forest Products	Not Important	Slightly Important	Moderately Important	Very Important
Real Estate Investment	Not Important	Slightly Important	Moderately Important	Very Important
Scenic Enjoyment	Not Important	Slightly Important	Moderately Important	Very Important
Provide Forests for the Future	Not Important	Slightly Important	Moderately Important	Very Important
As Habitat for Wildlife	Not Important	Slightly Important	Moderately Important	Very Important
Hedge Against Inflation	Not Important	Slightly Important	Moderately Important	Very Important
Satisfaction from Owning Land	Not Important	Slightly Important	Moderately Important	Very Important
Retirement Investment	Not Important	Slightly Important	Moderately Important	Very Important
Place to Hunt	Not Important	Slightly Important	Moderately Important	Very Important
Part of Cattle Ranch or Farm	Not Important	Slightly Important	Moderately Important	Very Important
Stop Development of this Piece of Land	Not Important	Slightly Important	Moderately Important	Very Important
Other - Please specify	Not Important	Slightly Important	Moderately Important	Very Important

Section III

This section deals with how close your residence is to your forest land and the time you spend on your forest land.

- 1 How close to your forest land do you currently live? (Circle number)

- 1 ON OR ADJACENT TO MY FOREST LAND
- 2 IN THE SAME COUNTY AS MY FOREST LAND
- 3 IN THE SAME STATE (Specify county) _____
- 4 IN ANOTHER STATE (Specify state) _____

- 2 Approximately, how long have you lived at your current address?

_____ YEARS

- 3 If you do not live on your forest land, what is the approximate average distance (one way) to your land?

_____ MILES

- 4 How much time do you spend annually on your forest land? Please give us your best estimation. (Circle number or fill in blanks)

- 1 NEVER VISIT OR SPEND TIME
- 2 _____ DAYS A YEAR
- 3 _____ WEEKS A YEAR
- 4 _____ MONTHS A YEAR
- 5 LIVE ON LAND ALL YEAR

- 5 What do you like about spending time on your forest land? Please circle all that apply to the time you spend on your forest land.

- 1 PEACEFULNESS OF BEING IN FOREST
- 2 SEEING WILDLIFE
- 3 JUST KNOWING THAT I OWN IT
- 4 SEEING IT RESPOND TO MY MANAGEMENT
- 5 THERAPEUTIC BENEFITS
- 6 CUTTING MY OWN FIREWOOD AND PRODUCTS
- 7 TAKING CARE OF IT
- 8 SCENIC OR BEAUTY OF MY FOREST
- 9 RECREATION AND HUNTING IS FREE
- 10 I DO NOT ENJOY BEING ON MY FOREST LAND
- 11 I DO NOT SPEND TIME ON MY FOREST LAND
- 12 OTHER (Please specify) _____

Section IV

Personal and family background might have an influence on decisions that we make. To help us understand this influence, we would like to ask some questions about your background. Please answer as best as you can.

1 Which best describes the type of community that you grew up in? (Circle number)

- 1 FARM
- 2 RURAL NON-FARM
- 3 CITY LESS THAN 1,000 PEOPLE
- 4 CITY WITH 1,000-9,999
- 5 CITY WITH 10,000-49,999
- 6 CITY WITH 50,000-99,999
- 7 CITY OVER 100,000

2 Did your parents or close relatives own any forest land?

- 1 YES
- 2 NO (please skip to ques. 5) -

3 If the land is still in the family, how many years has it been in the family?

- 1 LAND HAS BEEN IN FAMILY FOR _____ YEARS
- 2 LAND IS NOT IN FAMILY NOW

4 How did your family use your forest land? (Circle numbers that apply)

- 1 FIREWOOD OR TIMBER FOR PERSONAL USE
- 2 CONVERSION TO CROP OR PASTURE LAND
- 3 FIREWOOD OR TIMBER FOR INCOME
- 4 CATTLE OR LIVESTOCK GRAZING
- 5 NO USE: LAND WAS LEFT IDLE
- 6 HUNTING
- 7 LAND INVESTMENT
- 8 FARM OR DOMESTIC USE
- 9 GREW AGRICULTURAL CROPS
- 10 OTHER (Please specify) _____

Sometimes experiences or memories from the past stick with us when we are adults. We would like to ask you to think about your earliest memory of being in the forest either as a child or a teenager and share that with us. This information can give us guidance in developing educational and extension programs.

5 Do you have an early childhood memory of being in the woods?

- 1 YES **please use your own words**
- 2 NO

My earliest memory of being in the woods is:

6 Do you think your childhood or early experience has affected land management decisions you make as an adult? (Circle number **and whatever your response, please use your own words.**)

- 1 YES
- 2 NO
- 3 NOT SURE

My experience:

- 7 What is your main ethnic or national background of both your mother and father? Please only mark the main groups.

ANCESTRY	FATHER	MOTHER
IRISH		
SCOTTISH, ENGLISH		
FRENCH		
WELSH, BELGIAN		
SCANDINAVIAN		
POLISH OR OTHER EASTERN EUROPEAN		
RUSSIAN		
PORTUGUESE, LATIN AMERICAN		
SPANISH		
DUTCH		
GERMAN, SWISS		
AFRICAN-AMERICAN (BLACK)		
MEXICAN (HISPANIC)		
NATIVE AMERICAN (INDIAN)		
ITALIAN		
JAPANESE		
VIETNAMESE		
CHINESE OR OTHER ORIENTAL		
MIDDLE EASTERN		
EASTERN OR PACIFIC ASIAN		
ISRAELI		
DO NOT KNOW		
OTHER		

Section V

This section concentrates on management activities that you may or may not have conducted on your property. Please answer as best you can.

1 What type of forest do you own? (Circle all that apply).

- 1 PINE PLANTATION
- 2 NATURAL PINE
- 3 BOTTOMLAND HARDWOOD
- 4 OAK-HICKORY
- 5 POST OAK-BLACKJACK OAK
- 6 PINE-HARDWOOD
- 7 OTHER
- 8 DO NOT KNOW

2 Do you have a plan in mind for what you want to do with your forest land over the next 5 to 10 years? (Circle number).

- 1 YES
- 2 NO _____ (if NO, go to question 5.)

3 Do you have a written management plan? (Circle number).

- 1 YES
- 2 NO _____ (if NO, go to question 5.)

4 If yes, who helped you with your management plan? (Circle number).

- 1 NO ONE
- 2 A FOREST CONSULTANT
- 3 A STATE SERVICE FORESTER
- 4 AN EXPERIENCED FRIEND OR RELATIVE
- 5 SOIL CONSERVATION SERVICE FORESTER OR AGENT
- 6 COUNTY EXTENSION AGENT
- 7 OTHER (Please specify) _____

- 5 Which of the following **GENERAL ACTIVITIES** have you conducted on your forest land over the past 10 years? (Circle all that apply).

- 1 CLEARED FOREST LAND FOR AGRICULTURAL USE
- 2 USED YOUR FOREST LAND FOR CATTLE GRAZING
- 3 BUILT A POND
- 4 CLEARED FOREST LAND FOR RECREATIONAL USE
- 5 PLANTED CHRISTMAS TREES
- 6 CLEARED LAND TO BUILD HOME
- 7 FENCED FOREST LAND TO PREVENT GRAZING
- 8 CUT TREES FOR PERSONAL FIREWOOD USE
- 9 COMPLETED WILDLIFE HABITAT IMPROVEMENT ACTIVITIES
- 10 HAVE NOT DONE ANY ACTIVITIES ON MY FOREST LAND
- 11 OTHER (Please specify) _____

- 6 Within the past 10 years, which of the following **FOREST MANAGEMENT ACTIVITIES** have you conducted on your forest land? (Circle all that apply).

- 1 FIRE CONTROL INCLUDING BUILDING FIRE LANES
- 2 PRUNING OF POTENTIAL CROP TREES
- 3 PLANTED OR SEEDED TREES ON LAND
- 4 SITE PREPARATION ACTIVITIES
- 5 APPLIED INSECT/DISEASE CONTROL TREATMENT
- 6 THINNED OUT UNDESIRABLE DISEASED OR DEAD TREES
- 7 HARVESTED TIMBER
- 9 BUILT A PERMANENT ROAD THROUGH FOREST LAND
- 10 CONDUCTED PRESCRIBED BURNING
- 11 HAVE NOT CONDUCTED ANY FOREST ACTIVITIES
- 12 OTHER (Please specify) _____

- 7 Have you sold any timber or pulpwood from your forest land in the past 5 years? (Circle number).

- 1 YES
- 2 NO ----- (please go to question 15)

- 8 Who initiated the timber sale?
- 1 BUYER INITIATED SALE
 - 2 INITIATED SALE MYSELF
- 9 What would you say was the main reason for your harvest? (Circle number).
- 1 TIMBER WAS MATURE
 - 2 TO RELEASE THE PINES
 - 3 THIN AND IMPROVE THE TIMBER STAND
 - 4 TIMBER WAS DISEASED OR DAMAGED
 - 5 NEEDED SOME EMERGENCY MONEY
 - 6 THE MARKET PRICE WAS GOOD
 - 7 CLEARED TO CONVERT TO OTHER USE
 - 8 NEEDED MONEY TO PAY TAXES
 - 9 PART OF OVERALL MANAGEMENT PLAN
 - 10 OTHER (Please specify) _____
- 10 What type of harvest/regeneration method did you use? (Circle number).
- 1 CLEAR-CUT
 - 2 DIAMETER LIMIT CUT
 - 3 SELECTIVE CUT
 - 4 SEED TREE - SHELTERWOOD
 - 5 DO NOT KNOW
 - 6 OTHER (Please specify) _____
- 11 Who helped you with your commercial timber harvest (eg. sale administration, sale layout)? (Circle number). Please explain if necessary.
- 1 I DID NOT HAVE ANY HELP
 - 2 A STATE SERVICE FORESTER
 - 3 COUNTY AGENT
 - 4 SOIL CONSERVATION SERVICE FORESTER
 - 5 A FOREST CONSULTANT
 - 6 AN EXPERIENCED RELATIVE OR FRIEND
 - 7 LOGGERS
 - 8 OTHER (Please specify) _____

- 12 Were you satisfied with the price you received from your last sale? (Circle number).
- 1 YES
 - 2 NO
- 13 If someone other than yourself did the logging, were you satisfied with any steps taken to protect the condition of the remaining trees and the forest land? (Example: stream side protection).
- 1 SATISFIED
 - 2 NOT SATISFIED
- 14 Did you successfully regenerate or replant after harvest? (Circle number).
- 1 YES
 - 2 NO
 - 3 DO NOT KNOW

please explain your answer in your own words.

- 15 Do you plan to harvest timber in the next 5 to 10 years?
- 1 YES (please go to question 1 of Section VI)
 - 2 NO (please go to the next question)
 - 3 UNDECIDED (please go to the next question)
- 16 If you answered NO or are undecided about harvesting in the next 5 to 10 years, do you plan to ever harvest timber from your forest land?
- 1 YES (please go to question 19)
 - 2 NO (please go to the next question)
 - 3 UNDECIDED (please go to the next question)

- 17 What are the main reasons behind your decision not to harvest or being undecided about harvesting in the future? Please circle the **THREE MOST IMPORTANT** reasons to you.
- 1 NO MARKET
 - 2 TIMBER IS TOO IMMATURE
 - 3 NOT ENOUGH VOLUME
 - 4 TIMBER IS OF A POOR QUALITY
 - 5 OPPOSED TO CUTTING TIMBER
 - 6 LAND VALUE WOULD BE LOWERED
 - 7 PRIVACY WOULD BE LOST
 - 8 LAND IS TIED UP IN AN ESTATE
 - 9 TOO MUCH WORK INVOLVED
 - 10 MISTRUST LOGGERS
 - 11 PLAN TO SELL LAND
 - 12 WOULD CHANGE WILDLIFE HABITAT
 - 13 WOULD CHANGE THE NATURAL BEAUTY OF LAND
 - 14 TOO OLD OR ILL
 - 15 OTHER (PLEASE SPECIFY) _____
- 18 What would you say is the most important of the three reasons you listed above for not ever selling or harvesting your timber? If you can, please provide additional explanation in your own words.
- 19 If you mainly manage your forest land for reasons other than timber production, under what conditions would you consider harvesting some timber? (Circle all that apply).
- 1 IF NEEDED MONEY FOR AN EMERGENCY
 - 2 IF WOULD IMPROVE WILDLIFE HABITAT OR SCENIC BEAUTY
 - 3 IF COULD RECEIVE A GOOD PRICE
 - 4 IF TREES ARE DISEASED OR DEAD AND NEED REMOVAL
 - 5 I WOULD NOT HARVEST AT ANY TIME IN ANY SITUATION
 - 6 OTHER (Please explain) _____

Section VI

Finally, we would like to ask a few questions about yourself to help interpret the results. This information will be kept strictly confidential and will never be associated with your name.

1 Your gender. (Circle number of your answer)

- 1 MALE
- 2 FEMALE

2 What is your present marital status? (Circle number)

- 1 NEVER MARRIED
- 2 MARRIED
- 3 DIVORCED
- 4 SEPARATED
- 5 WIDOWED

3 What is your present age: _____ YEARS

4 Are you presently: (Circle number)

- 1 EMPLOYED
- 2 SELF-EMPLOYED
- 3 UNEMPLOYED
- 4 RETIRED
- 5 FULL-TIME HOMEMAKER

5 Please describe your occupation. If there is more than one person working in your household, please describe this secondary wage earner's occupation as well. (If retired, describe the usual occupation before retirement.)

YOUR OCCUPATION: _____

SECONDARY WAGE EARNER
OCCUPATION: _____

- 6 What was your approximate **net family** income from all sources, before taxes in 1990? (Circle number)

- 1 LESS THAN \$ 10,000
- 2 10,000 TO 19,999
- 3 20,000 TO 29,999
- 4 30,000 TO 39,999
- 5 40,000 TO 49,999
- 6 50,000 TO 69,999
- 7 70,000 TO 79,999
- 8 OVER \$ 80,000

- 7 Which is the highest level of education that the main wage earner and the secondary wage earner have completed? (Circle number)

PRIMARY WAGE EARNER

- 1 NEVER ATTENDED SCHOOL
- 2 LESS THAN 8 YEARS
- 2 SOME HIGH SCHOOL
- 3 COMPLETED HIGH SCHOOL
- 4 SOME COLLEGE
- 5 COMPLETED COLLEGE
- 6 SOME GRADUATE WORK
- 7 GRADUATE DEGREE

SECONDARY WAGE EARNER

- 1 NEVER ATTENDED SCHOOL
- 2 LESS THAN 8 YEARS
- 2 SOME HIGH SCHOOL
- 3 COMPLETED HIGH SCHOOL
- 4 SOME COLLEGE
- 5 COMPLETED COLLEGE
- 6 SOME GRADUATE WORK
- 7 GRADUATE DEGREE

please specify degrees earned:

- 8 What type of government or assistance programs would best suit your land use needs? (Circle all that apply).

- 1 FREE TECHNICAL ASSISTANCE OR ADVICE
- 2 COST SHARING FOR PLANTING AND OTHER PRACTICES
- 3 TAX LAWS FAVORING FOREST LAND OWNERS
- 4 EDUCATION AND EXTENSION PROGRAMS
- 5 I DON'T REALLY NEED ANY ASSISTANCE
- 6 OTHER (please specify) _____

Is there anything else you would like to tell us about your forest land management or personal experience? If so, please use this space for that purpose.

Also, any comments you wish to make that you feel might help us better understand forest landowner objectives will be appreciated, either here or in a separate letter.

Our address is:

Tamara L. Walkingstick
Forestry Department
008c Agriculture Hall
Stillwater, OK 74078

Your contribution to this effort is greatly appreciated. Thank you for your cooperation and patience. If you would like a summary of the results, please print your name and address on the back of the return envelope (NOT on this questionnaire). We will see that you get it.

VITA

Tamara Lynne Walkingstick

Candidate for the Degree of
Master of Science

Thesis: LAND USE PERCEPTIONS AND MOTIVATIONS AFFECTING
SOUTHEASTERN OKLAHOMA NONINDUSTRIAL PRIVATE FOREST
LANDOWNERS.

Major Field: Environmental Science

Biographical:

Personal Data: Born in Springdale, Arkansas, June 13,
1961, the daughter of Dorothy and Ralph
Walkingstick.

Education: Graduated from Jenks High School, Jenks,
Oklahoma, in May, 1979; received Bachelor of
Science in Environmental Science from the
University of Arkansas at Fayetteville in May,
1984; completed requirements for the Master of
Science degree at Oklahoma State University in
December, 1992.

Professional Involvement: Centennial Scholar,
Oklahoma State University, September, 1990. Pew
Scholarship recipient; \$15,000 award for 1990-1991,
Proposal Title: Integration of forest conservation
and development efforts by nonindustrial private
forest landowners in Oklahoma. Miller
Distinguished Graduate Fellowship recipient,
Oklahoma State University Foundation, May 1989 and
May 1990. Member, Xi Sigma Pi, Honor Society of
Forestry, Oklahoma State University, Member, Gamma
Sigma Delta, Honor Society of Agriculture, Oklahoma
State University, Phoenix Awardee for Outstanding
Graduate Students, Oklahoma State University
Graduate Student Council. May 1991.