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# SMALL WOODLAND OWNERS IN SEQUATCHIE COUNTY, TENNESSEE

PROBLEM A: CHARACTERISTICS OF SEQUATCHIE COUNTY SMALL WOODLAND OWNERS AND THEIR FARMS

PROBLEM B: MANAGEMENT PRACTICES OF SEQUATCHIE COUNTY SMALL WOODLAND OWNERS

PROBLEM C: FACTORS INFLUENCING WOODLAND MANAGEMENT ADOPTION BY SEQUATCHIE COUNTY SMALL WOODLAND OWNERS

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Three Related Problems in Lieu of Thesis

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Mack E. Steele

August 1973

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## ACKNOWLEDGEMENTS

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## ABSTRACT

### PROBLEM A: CHARACTERISTICS OF SEQUATCHIE COUNTY SMALL WOODLAND OWNERS AND THEIR FARMS

This study was the first of three related problems regarding small woodland owners in Sequatchie County, Tennessee. It was conducted for the purpose of determining the characteristics of small woodland owners in the county. A random sample of 50 owners were selected; and the farmers were classified by the SCS technician, Extension Leader and Associate Extension Agent into high (20) or low (30) adopters depending upon whether they were inclined to be among the first to adopt recommended practices or not.

The findings revealed that the average small woodland owner in Sequatchie County had the following characteristics: (1) was 51.3 years of age; (2) had completed 12.0 grade; (3) reported a median gross family income of $9,143.00; (4) was "very well" or "fairly well" known by the interviewer; and the owner was "friendly" or "somewhat friendly" toward the survey.

When high adopters and low adopters were compared, it was found that high adopters: (1) had larger farms and more woodland acreage; (2) more often lived on the farm where woodland tract was located; (3) more often were full-time farmers or businessmen; (4) were better educated; (5) had a higher median total gross family income ($12,000 versus $8,000); (6) listed beef or general farming as most important farm enterprise; and (7) were, as a group, more interested in improving their woodland management.

In general terms most of the owners were "somewhat" interested in woodland improvement and rated the condition of their woodland as fair, and most owners were not interested in private or cooperative arrangements with a professional forester to help manage their woodland.

Suggestions were made for futher analysis of the data and for use of findings in planning of the forestry phase of the Sequatchie County Extension Program.

PROBLEM B: MANAGEMENT PRACTICES OF SEQUATCHIE COUNTY SMALL WOODLAND OWNERS

This was the second of three related problems concerning small woodland owners in Sequatchie County, Tennessee. It's purpose was to find out which recommended woodland management practices were and were not being used by small woodland owners in the county. A random sample of 50 owners was interviewed in 1973 by the Extension Leader. Twenty were classified as low adopters by the panel listed in Problem A in the abstract. Data were analyzed in numbers and percents; and also, management levels of small woodland owners were compared on the basis of practice diffusion ratings assigned.

Findings revealed that high adopters had higher diffusion ratings than low adopters on all 21 recommended woodland management practices. At least one diffusion stage difference was noted between high adopters and low adopters in favor of high adopters on the following practices, in order: (1) establishing woodland on open land suited to trees; (2) selling trees to obtain optimum returns; (3) getting advice of

professional forester; (4) participating in non-government forestry programs; (5) participating in ASCS or other forestry programs; (6) using a written contract in selling trees, and (7) starting to harvest trees within a year after marking. Also, it was noted that while most owners were in the "interested" practice adoption stage the high adopters were further along in the adoption of recommended practices than the low adopters. Most owners felt a need for timber marketing information.

Suggestions were made for use of findings and for additional research.

PROBLEM C: FACTORS INFLUENCING WOODLAND MANAGEMENT ADOPTION BY SEQUATCHIE COUNTY WOODLAND OWNERS.

The study was the last of three related problems to determine the small woodland owner's situation in Sequatchie County, Tennessee. Specifically, the purpose here was to try to determine what factors, other than those identified in the two earlier problems, had influenced woodland owners to adopt or not adopt recommended woodland management practices. Data from interviews with 50 small woodland owners in the county served as a basis for the analysis and interpretations. Comparisons were made by dividing the group into 20 high adopters and 30 low adopters depending upon whether they were among the first to adopt recommended practices or not.

Owners most frequently reported "liking" their woodland because it produced marketable timber for income, and "disliking" their woodland for its relatively low production and returns.

More than one-half to two-thirds of those interviewed felt that woodland owners did not follow recommended practices because "more rewarding activities claim their time and money," and because "cost of practice outweighs possible benefits."

It was suggested that it be demonstrated to Sequatchie County woodland owners that following recommended woodland management practices was profitable.

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# PROBLEM A:

# CHARACTERISTICS OF SEQUATCHIE COUNTY SMALL WOODLAND OWNERS AND THEIR FARMS

# CHAPTER I

## INTRODUCTION

### I. THE SITUATION AND NEED FOR THE STUDY

Tennessee was one of twelve states participating in a 1962-63 nation-wide study concerning the management practices of small woodland owners who owned less than 2,500 acres of woodland. The long-range purposes of the Agricultural Extension Service project were: (1) to determine why small woodland owners were not doing a better job in managing their woodland for optimum productivity, and (2) to try to make an effort to get them to so manage their woodland as to double annual board foot production by the year 2000 A.D. (based on 1960 average annual production). Projected national demand for forest products by the year 2000, assuming that past and present trends will continue, is for a needed production of almost 104.3 billion board feet annually compared with the 1960 production of only 47.3 billion board feet (7).*

The above-mentioned goal of 104.3 billion board feet annually must be attained in a relatively short time (40 years).

Doubling production in such a short time can only be achieved if today's and tomorrow's small woodland owners, including those of Sequatchie County, manage their woodlands according to modern forest management practices. Sequatchie County was not one of the counties originally selected for study.

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*Numbers in parentheses refer to numbered references in the Bibliography; those after the colon, when they appear, are page numbers.

Forestry is of considerable importance in Sequatchie County, and there is interest by county leaders in the improvement of the County's woodland. Because of the opportunity for improving the forestry income and because of the large percentage of land in woodland, 81 percent (23), learning the characteristics of the small woodland owners of Sequatchie County, surveying the management practices they are now using or not using and studying their motivation would be helpful to the Extension Service in planning an effective county educational program in forestry.

## II. FACTS ABOUT SEQUATCHIE COUNTY AND RELATIVE IMPORTANCE OF FORESTRY

Sequatchie County lies in the southeastern portion of East Tennessee joining Marion County on the south; Hamilton County on the East; Bledsoe and Van Buren Counties on the North and Warren and Grundy Counties on the West. It is located in the symestrically canoe-shaped Sequatchie Valley and extends upon the Appalachian Plateau about thirty miles northeast of Chattanooga.

Sequatchie County has an area of 273 square miles covering 174,700 acres (23). All but 70,000 acres is in woodland. Farms embrace approximately 39,000 acres or about 22 percent of the total county land area. Several large tracts of land, making up a total of 123,500 acres, are owned by large land and timber companies or private individuals. Much of the company land, with few exceptions, is under relatively poor woodland management. Some small woodland owners have

indicated an interest in better woodland management. These owners need help in planning and technical forestry assistance in order to set up a profitable operation (14). Many farmers in the past cropped the fertile valley soils and open range grazed the Plateau soils. These soils ranged in elevation from 700 to 1800 feet above sea level. Timber produced on this woodland was a bonus crop or a nuisance depending upon whether the land was owned or belonged to someone else. Because of this view few approved woodland management practices were carried out.

Sequatchie County is approximately 30 miles northwest of Chattanooga, Tennessee, and Chattanooga is the closest major market area for the County.

Sequatchie became a county in 1857 and the City of Dunlap is the county seat with a 1970 population of 1,850. The total population of Sequatchie County in 1969 was 6,331.

Sequatchie County depends upon agricultural and industrial income with an estimated total gross agricultural sales of $1,099,358.00 in 1969 (23). The main agricultural enterprises, listed in descending priority order of their contribution to the Agricultural income of the county, have been dairy, livestock, poultry, crops, and forestry. Major industries at the time of this study included four clothing factories, one zipper factory, one furniture factory, one Coca Cola plant, and four small sawmills. In addition to employment in the above factories, numbers of Sequatchie Countians were employed by DuPont, Combustion Engineering, Volunteer Ammunition Ordinance Plant, American Lava, and other industries in Chattanooga, and in

addition Sequatchie Countians were employed in industries in Bledsoe and Van Buren Counties.

Due to the number of factory jobs available in the area, many small woodland owners are part-time farmers.

The 1969 census of selected population data indicated that the population of Sequatchie County was 6,331. The (1970) census indicated that the median school years completed by the population, 25 years and over was 9.0 years. Only 31.9 percent of the adults had completed high school and more school years. Median family income for the county was $6,111.00. The reported sale timber and other forestry products was an estimated $4,000.00 in 1969. The vast majority of sales were not reported. Also, home use of timber and products was not reported.

## III. IMPORTANCE OF THE STUDY

From the above-mentioned facts it can be seen that Sequatchie County derives less than one percent of its gross agricultural income from the sale of woodland products. Seven farms reported cutting and selling the $4,000.00 worth of forestry products reported above.

The most recent national statistics show that about 44 percent of all commercial forest land in the United States is held in 4.5 million ownerships of less than 5,000 acres each. The woodlands grow substantially less timber per acre than well-managed larger private and public ownerships.

The lands owned by many forest industries and by the public have forestry management programs. They are in the business of forest crop

production. These ownerships are in a good position to command the facilities and personnel necessary for attainment of the greatly increased intensity of management needed. But together, industrial and public lands comprise less than one-half of the commercial forest area of the United States.

Small forest ownerships with 55 percent of the area must obviously produce a substantial portion of the increased growth needed. It is not likely, however, that the small ownerships can be expected to reach the intensity of management that can be expected of industrial and public lands.

Consideration of this factor indicates that a goal of about 52 billion boardfeet annually, or about 49 percent of the total needed by the year 2000 should come from small forest ownerships. This is about double what those ownerships produce now and about 4 billion boardfeet greater than the current growth from all onwerships in the United States today. This raises the question, "What can be done to influence small forest owners to increase their production as needed to produce more than the present production of all owners put together?" (6).

The Agricultural Extension Service Agents in Sequatchie County are responsible for the development of an educational program in forestry, as well as in all other agricultural enterprises of importance in the county. The above facts indicate that forestry should rank high in importance in the county economy; thus Extension workers should focus their attention and concern on educational programs dealing with improvement of woodland management practices.

## IV. QUESTIONS TO BE ANSWERED

Basic questions raised for consideration in this study included:

1. What are some of the characteristics of small woodland owners of Sequatchie County?

2. What are some of the characteristics of High Adopters (those among the first few to adopt recommended practices) in Sequatchie County?

3. What are some of the characteristics of the Low Adopters (those not among the first to adopt the recommended practices) in Sequatchie County?

4. What are some of the characteristics of their respective farms?

## V. THE PURPOSE OF THE STUDY

The purpose of this study, then, was to obtain basic information about the characteristics of small woodland owners of Sequatchie County and their woodlands so that the Agricultural Extension Service Staff could use this information in planning a more effective educational effort related to forestry.

## V. REVIEW OF RELATED LITERATURE

A relatively large number of publications and other literature concerning the characteristics of small woodland owners was found to be available. Appropriate categories will be used to discuss the various aspects of the subject.

Importance of Small Woodland

The American Forest Products Association (1:1), in a report of the proceedings of its National Woodlot Conference in 1953, stated that small forests were then and would continue to be a large and important part of this country's forest economy. It was noted that 57 percent of the commercial forest land on which Americans rely for wood products essential to our way of life was held in small woodland ownerships.

The report also stated that woodlot owners would be better off and the prosperity and stability of their communities would be enhanced by a higher level of production from the small woodlands (1:4).

Worley (24), in discussing the local benefits from timber industry expansion, said the average size of woodlands was one of the major problems confronting foresters. He noted that low productivity and lack of management seemed to be much more prevalent on small holdings than on large. Why is this? The answer to this question lies more with the people owning the land than with other possible causes. A first step in solving small woodland management problems appeared to be to learn more about the owners--who they are, how they live, and what they think.

Rose (17), in discussing the relationship of timber and wood production to the development of an area, stated that the public interest requires an increasing output from both government and privately-owned woodlands and protection of the watersheds they cover (17:1). He notes that forestry contributions do not stop at the time of harvest and that

the stumpage value received by small woodlot owners for sawtimber and pulpwood represents only a small proportion of the contribution. Also, sawmills and related services provide employment.

Rose also noted that there were more than 4.5 million separate holdings of private forest land in the United States in 1960, plus thousands of tracts that were less than three acres in size. Three and nine tenths million separate tracts had less than 100 acres.

McClay (12) found there was a positive correlation between size of woodland ownership and the use of desirable practices. In a 1955 sutdy of 23 private forest holdings in New England, Barraclough and Gould (2) found the larger the holding the larger the percent of owners harvesting some timber in the previous 10 years. Interest in forestry improvement seems to be associated with the portion of the total land forested, the larger the proportion in forest the greater the interest.

Lionberger (11:101) found the size of farm is nearly always positively related to the adoption of new farm practices and that low productivity and management seemed to be more common on small holdings than large.

Successful business managers also tended to be good woodland managers, according to Frutchey (7). His 1961 report on research done with small woodland owners indicated that the better managers generally sought and used technical assistance in all their business affairs, not only in forestry matters.

Frutchey stated that the successful forest manager apparently was the type of person interested in civic affairs. There was a

strong correlation between management success and participation in community affairs.

John D. Black (3) in his paper before the American Philosophical Society in 1945, pointed out that one of the major obstacles to better forestry in this country was the lack of public concern and the indifference of woodland owners. Black felt that educators must find something in timberland owners' attitudes and reactions upon which to capitalize in order to draw them into forestry programs.

The age of land owners also has been seen to influence their opinions concerning woodland practices. In a 1963 study of the motivations of small woodland owners in Kentucky, Santopolo and Neuman (18) discovered that the more efficient woodland owner and those he influenced were in the middle-aged (40-59 years) group as compared to their neighbors who were generally not following recommended forestry management practices. In a summary statement concerning the characteristics of small woodland owners they also noted that high adopters tended to be better educated, had higher-status jobs, made more money and owned more land.

Sharp and Dotson (19:14) in their 1963 study of "Motivations of Small Woodland Owners in Tennessee Concerning Woodland Management," noted that high adopters characteristically had more gross income and consequently more capital to allocate for forestry and other production.

Frutchey (7) stated that there were many indications that low-income and finanacial difficulties were the main reasons for unsatisfactory management of small woodlands. He reported that

information, interest, and good intentions did not insure good cutting practices by low-income small woodland owners who lived from one financial crisis to the next.

Frutchey (7), in the study mentioned earlier, found that the basic motive in good forestry management was pride of ownership and interest in productive land management as a longtime family enterprise.

Frutchey also noted that the proportion of an owner's land that is woodland seemed to influence his interest in better practices. Proportion of income received from woodlands had a decided influence on amount of attention and management devoted.

## VIII. DEFINITION OF TERMS

For the purpose of this study, a high adopter was defined as a farmer who was considered by a panel of judges to be among the first few to accept and carry out recommended farm practices in general. Low adopters were farmers who were not among the first few to accept and carry out the recommended farm practices. A small woodland owner was considered to be an owner who owned more than five acres and less than 2,500 acres of woodland.

## IX. METHOD AND PROCEDURE

In order to gather data for this study a woodland management survey was used to interview 50 randomly selected small woodland owners in Sequatchie County. An interview schedule was developed with the help of the Tennessee Agricultural Extension Service, the Agricultural Extension Forestry Department, and the University of Tennessee

Agricultural Economics Department. The interview schedule included 45 questions which were developed to help answer the original questions listed in the national forest survey of 12 states made in 1962 and 1963 concerning woodland management.

A list of farmers in Sequatchie County was obtained from the County Agricultural Stabilization and Conservation Service office, and the list was divided into high adopters and low adopters. The survey sampling of the county was to interview 50 farmers from the County to be arranged as follows: 20 high adopters and 30 low adopters.

The farmers were classified as high adopters or low adopters by the SCS technician, Extension Leader and the County and Associate Agent. A total of 40 high adopters was listed for the county. All others, 260 farmers were included in the low adopters list.

The farmers to be interviewed were determined by taking every "nth" name on the high adopter list, making a total of 20 (a 50 percent sample), and every "nth" name on the low adopter list, making a total of 30 low adopters (an 11.5 percent sample).

The interview schedules was used with both the high adopters and low adopters by the Extension Agent and Leader who asked the questions and recorded all answers. All 20 high adopters and 30 low adopters selected were personally interviewed.

Reference may be made to the interview schedule by turning to Appendix A. Interviews were completed in the spring of 1973.

# CHAPTER II

## FINDINGS OF THE STUDY

### I. DEGREE TO WHICH INTERVIEWER KNEW SMALL WOODLAND OWNERS

The degree to which the interviewer knew the respondent may be seen in Table I. One hundred percent of high adopters interviewed were known either "very well" or "fairly well" as compared to 90 percent for the low adopters.

### II. OWNER ATTITUDE TOWARD SURVEY

The information in this survey depended largely upon the attitudes and responses of woodland owners.

Eighty-eight percent of all owners were "friendly" or "somewhat friendly" toward the survey according to data in Table II. Ninety-five percent of high adopters were in the category compared to 80 percent of the low adopters.

### III. WOODLAND ACREAGE

Reference to Table III shows that the total average acreage owned by all respondents was 119 acres; the high adopters averaging larger holdings (169 acres) than the low adopters (86 acres). Thirty-four percent of all owners owned less than 50 acres. Thus, 66 percent of all land owners owned 50 or more acres of woodland. Eighty percent of high adopters owned more than 50 acres compared to 57 percent of the low adopters.

TABLE I

DEGREE TO WHICH INTERVIEWER KNEW ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS BY PERCENTS*

| Degree to which Interviewer Knew Respondent | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Very Well | 60 | 80 | 47 |
| Fairly well | 34 | 20 | 43 |
| Not very well | 6 | 0 | 10 |
| Not at all | 0 | 0 | 0 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

TABLE II

ATTITUDE TOWARD THE SURVEY AS DETERMINED BY THE INTERVIEWER ACCORDING TO PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| Attitude Toward Survey | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Friendly | 68 | 95 | 50 |
| Somewhat Friendly | 20 | 5 | 30 |
| Indifferent | 12 | 0 | 20 |
| Antagonistic | 0 | 0 | 0 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

TABLE III

AMOUNTS OF TOTAL WOODLAND IN SELECTED ACREAGE CATEGORIES ACCORDING TO PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| Acreage Interval | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | Percentage | | |
| 5-49 | 34 | 20 | 43 |
| 50-249 | 58 | 70 | 50 |
| 250-2500 | 8 | 10 | 7 |
| Total | 100 | 100 | 100 |
| Total average owned | 199 acres | 169 acres | 86 acres |

*Percents rounded to nearest whole number.

## IV. PORTION OF TOTAL LAND IN WOODLAND

Forty-eight percent of all owners had less than one-half of their total land in woodland according to data in Table IV. A smaller percent of high adopters (45 percent) than low adopters (50 percent) had less than one-half of their land in woodland.

## V. DISTANCE OF WOODLAND FROM HOME OWNER

The data in Table V show that 76 percent of all owners lived on the land tract that included their woodland acreage. Ninety-four percent indicated their woodland was less than ten miles from their home. Five percent of high adopters reported their woodland was within 10 to 29 miles from their homes. The data also indicated that 7 percent of low adopters owned woodland more than 10 miles from their residence.

## VI. MAJOR OCCUPATIONS

Forty-six percent of all farmers surveyed were full-time farmers. With reference to Table VI, it can be seen that 50 percent of the high adopters surveyed were full-time farmers compared to 43 percent of the low adopters. Twenty-five percent of high adopters had business occupations. Ten percent of high adopters had professional occupation. Only 3 percent of low adopters had business occupations and none had a professional occupation. Four percent of all owners were wage earners. Seven percent of low adopters were wage earners. A slightly greater percent (5 percent) of high adopters were retired, while 4 percent of low adopters were retired.

TABLE IV

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS HAVING DIFFERENT PORTIONS OF THEIR TOTAL LAND IN WOODLAND*

| Portion of total land in woodland | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Less than one-fourth | 16 | 10 | 20 |
| One-fourth to one-half | 32 | 35 | 30 |
| One-half to three-fourths | 42 | 35 | 47 |
| Three-fourths to all | 10 | 20 | 3 |
| All | 0 | 0 | 0 |
| Total | 100 | 100 | 100 |

*Percents are rounded to nearest whole number.

TABLE V

PERCENT OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS LIVING DESIGNATED DISTANCES FROM THEIR WOODLAND*

| Distance from woodland | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Live on place | 76 | 80 | 73 |
| Less than 10 miles | 18 | 15 | 20 |
| 10-29 miles | 2 | 5 | 0 |
| 30-99 miles | 2 | 0 | 3 |
| 100 miles or more | 2 | 0 | 4 |
| Total | 100 | 100 | 100 |

*Percents are rounded to nearest whole number.

TABLE VI

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS IN THE VARIOUS MAJOR OCCUPATIONS*

| Major Occupation | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Full-time farmer | 46 | 50 | 43 |
| Part-time farmer | 30 | 10 | 43 |
| Business | 12 | 25 | 3 |
| Professional | 4 | 10 | 0 |
| Wage earner | 4 | 0 | 7 |
| Retired | 4 | 5 | 4 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

## VII. FARM ENTERPRISES

As seen in Table VII, the major farm enterprises most frequently mentioned by all owners were beef (40 percent), general farm (26 percent), dairy (10 percent), and grain crops (10 percent). Eight percent of all owners indicated "other" livestock as their main enterprise. Only 6 percent of all owners reported forestry as the major enterprise. In comparing high and low adopters it is seen that more low adopters listed beef (30 versus 46 percent) and general farming (20 versus 30 percent), while more of the former listed dairy (15 versus 7 percent), and grain (15 versus 7 percent).

## VIII. EDUCATIONAL LEVEL

The average educational grade level of all owners was twelve years. The data in Table VIII also indicate that the high adopters had an average educational level of thirteenth grade compared to eleventh grade for the low adopters. Only 15 percent of the high adopters reported an educational level of eighth grade or less compared to 20 percent of the low adopters. Thirty percent of the former and 14 percent of the latter reported at least some college work. Thirty percent of high adopters had one or more college degrees.

## IX. GROSS FAMILY INCOME

The question on family income was optional, but all reported their gross incomes. Study of the information recorded in Table IX shows that the median gross family income of all owners in 1969 was

TABLE VII

MAJOR FARM ENTERPRISES ACCORDING TO PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| Major farm enterprise | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Beef | 40 | 30 | 47 |
| General Farm | 26 | 20 | 30 |
| Dairy | 10 | 15 | 7 |
| Grain Producer | 10 | 15 | 6 |
| Other Livestock | 8 | 10 | 7 |
| Forestry | 6 | 10 | 3 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

TABLE VIII

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS IN VARIOUS EDUCATIONAL GROUPS AND THEIR AVERAGE EDUCATIONAL LEVELS*

| Formal Educational Category | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| None | 0 | 0 | 0 |
| 1-8 | 18 | 15 | 20 |
| 9-12 | 62 | 55 | 66 |
| College | 4 | 0 | 7 |
| Degree or adv. degree | 16 | 30 | 7 |
| Total | 100 | 100 | 100 |
| Average educational level of those reporting | 12 years | 13 years | 11 years |

*Percents are rounded to the nearest whole number.

TABLE IX

TOTAL GROSS FAMILY INCOMES AND MEDIAN INCOMES BY PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| Total gross income category | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| $0-3,999 | 16 | 15 | 17 |
| $4,000-7,999 | 26 | 15 | 33 |
| $8,000-11,999 | 28 | 20 | 33 |
| $12,000-15,999 | 8 | 10 | 7 |
| $16,000-19,999 | 4 | 5 | 3 |
| $20,000-99,999 | 18 | 35 | 7 |
| Total | 100 | 100 | 100 |
| Median Income category | $9,143 | $12,000 | $8,000 |

*Percents are rounded to nearest whole number.

$9,143.00. The gross family income of the high adopters was an average of $12,000.00 annually compared to the low adopters average income of $8,000.00.

## X. MARKETING TIMBER BY GROSS SALE

Seventy percent of all owners surveyed indicated no sales in the period 1967-1972 as shown in Table X. The data also indicate that another 6 percent of the landowners sold less than $250 of woodland products in this period of time.

There were no major differences in percents of owners reporting sales between high and low adopters, except that more low adopters reported sales in the $1,000 category, where 16 percent of them and only 5 percent of the high adopters so reported.

## XI. AGE OF OWNER

The small woodland owners included in the study had an average age of 51.3 years according to data in Table XI. It was noted that 68 percent of all woodland owners were over 50 years of age. There was no significant difference in high and low adopters in the over 50 years of age categories. The low adopters' average age was 54.6 years compared to the high adopters' 54.3.

## XII. INTEREST IN WOODLAND IMPROVEMENT

According to the opinion of the interviewer, a total of 62 percent of all owners was either "somewhat interested" or "very

TABLE X

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS SELLING TIMBER DURING THE PREVIOUS FIVE YEARS ACCORDING TO GROSS SALES*

| Gross sales category | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| No sales | 70 | 75 | 67 |
| Less than $250 | 6 | 10 | 3 |
| $250-499 | 4 | 0 | 7 |
| $500-999 | 8 | 10 | 7 |
| $1,000 and over | 12 | 5 | 16 |
| Total | 100 | 100 | 100 |

*Percents are rounded to nearest whole number.

TABLE XI

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS IN VARIOUS AGE GROUPS AND THEIR AVERAGE AGES*

| Age category | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Under 30 | 2 | 5 | 0 |
| 30-39 | 12 | 10 | 13 |
| 40-49 | 18 | 15 | 20 |
| 50-59 | 42 | 45 | 40 |
| 60 or more | 26 | 25 | 27 |
| Total | 100 | 100 | 100 |
| Average age | 51.3 | 54.3 | 54.6 |

*Percents are rounded to the nearest whole number.

interested" in woodland improvement. There was a marked difference in the attitudes of high and low adopters toward woodland improvement as evidenced in the data in Table XII. The data indicate that 35 percent of the high adopters and none of the low were "very interested" in woodland improvement. Eighty-five percent of the high adopters were at least "somewhat interested" in woodland improvement compared to only 47 percent of the low adopters. The data also indicate that only 15 percent of the high adopters were "not interested" in woodland improvement compared to a large 46 percent of low adopters fitting into this category.

## XIII. MANAGEMENT SERVICE SYSTEM PREFERRED

Table XIII lists three different management systems that small woodland owners might use to get help in their woodland improvement programs. Fifty percent said they were "not interested" in any of the systems. However, it was interesting to note that only 25 percent of the high adopters said they were "not interested" compared to 66 percent of the low adopters. Twenty-five percent of high adopters were "interested" in employing a forester by private arrangement compared to 17 percent of low adopters. Also, 35 percent of high adopters and 17 percent of the low indicated they would consider hiring a forester another way.

## XIV. WOODLAND OWNERS' RATINGS OF THEIR WOODLAND

The data in Table XIV show that only 20 percent of all owners rated the condition of their woodland as "good" and 62 percent rated

TABLE XII

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS ACCORDING TO INTERVIEWER'S OPINION OF RESPONDENTS' INTEREST IN WOODLAND IMPROVEMENTS*

| Interest in Improvement Category | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Very interested | 14 | 35 | 0 |
| Somewhat interested | 48 | 50 | 47 |
| Indifferent | 4 | 0 | 7 |
| Not interested | 34 | 15 | 46 |
| Total | 100 | 100 | 100 |

*Percents are rounded to nearest whole number.

TABLE XIII

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS BY MANAGEMENT SERVICE SYSTEM PREFERRED*

| Management system preferred | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Private arrangement with forester | 20 | 25 | 17 |
| Association with private forester | 6 | 15 | 0 |
| Forester secured other way | 24 | 35 | 17 |
| None of them | 50 | 25 | 66 |
| Total | 100 | 100 | 100 |

*Percents rounded to the nearest whole number.

TABLE XIV

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS RATING THE PRESENT CONDITION AND VALUE OF THEIR WOODLAND IN SELECTED CATEGORIES*

| Woodland rating category | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Excellent | 0 | 0 | 0 |
| Good | 20 | 35 | 10 |
| Fair | 62 | 60 | 63 |
| Poor | 18 | 5 | 27 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

their woodland "fair." Thirty-five percent of the high adopters rated their woodland as "good" or better compared to only 10 percent of the low adopters. Sixty percent of high adopters and 63 percent of the low rated their woodland as "fair." Five percent of the high adopters said that the condition of their woodland was "poor" compared to 27 percent of the low adopters. None of those interviewed rated their woodland "excellent."

## XV. INTERVIEWER'S RATING OF THE CONDITION OF THE OWNERS' WOODLAND

The interviewer was not familiar with the condition of the owners' woodland on 26 percent of all farms surveyed as indicated in Table XV. However, he was slightly more familiar with the condition of the high adopters' woodland (80 percent) compared to (70 percent) that of the low adopters'. The interviewer rated 55 percent of the woods of high adopters "good" or better compared to only 7 percent of that of low adopters in the same category.

He rated the woodland of 20 percent of high adopters "fair," while he rated the woodland of 53 percent of the low adopters as "fair."

## XVI. SEX OF OWNER

Only 6 percent of all owners surveyed were female as seen in Table XVI. All 6 percent of the females were low adopters.

TABLE XV

INTERVIEWER'S RATINGS OF THE PRESENT CONDITION AND VALUE OF WOODLAND OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS BY PERCENTS*

| Woodland rating category | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Interviewer was not familiar with condition of woodland | 26 | 20 | 30 |
| Excellent | 4 | 10 | 0 |
| Good | 22 | 45 | 7 |
| Fair | 40 | 20 | 53 |
| Poor | 8 | 5 | 10 |
| Total | 100 | 100 | 100 |

*Percents are rounded to nearest whole number.

TABLE XVI

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS BY SEX*

| Sex of woodland owner | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Male | 94 | 100 | 90 |
| Female | 6 | 0 | 10 |
| Total | 100 | 100 | 100 |

*Percents are rounded to nearest whole number.

# CHAPTER III

## SUMMARY

A total of 50 small woodland owners (20 high adopters and 30 low adopters) were interviewed in Sequatchie County in 1973. The generally stated questions of the study were:

1. What are the characteristics of small woodland owners and their farms in Sequatchie County?
2. What are the characteristics of high adopters?
3. What are the characteristics of low adopters?

## I. REVIEW OF FINDINGS

Listed below is a brief summary of the major findings of the study as related to the characteristics of small woodland owners in Sequatchie County.

1. The interviewer knew all of the high adopters "very well" or "fairly well" as compared to 90 percent of low adopters.
2. Eight-eight percent of all owners were "friendly" or "somewhat friendly" toward the survey.
3. Thirty-four percent of all owners owned less than 50 acres of woodland. Only 20 percent of the high adopters owned less than 50 acres of woodland while 43 percent of the low adopters were so classified.
4. Forty-eight percent of all owners had less than one-half of their total land in woodland. More of the high adopters had larger portions of their land in woodland than the low.

5. A high percentage (76 percent) of all owners lived on the land tract that included their woodland acreage. Eighty percent of the high adopters and 73 percent of the low lived on the land tracts that included their woodland acreage.

6. Nearly one-half (46 percent) of all land owners were full-time farmers. Fully 50 percent of the high adopters were full-time farmers, while 43 percent of the low adopters were so classified. Twenty-five percent of high adopters and 3 percent of the low were in a business occupation.

7. Forty percent of all owners listed "beef" as their major farm enterprise and another 26 percent listed "general farming" as their enterprise response. Only two high adopters and one low adopter listed "forestry" as their major farm enterprise. "Dairy" and "grain crops" were listed by 10 percent of the adopters as major enterprises.

8. The average educational grade level of all owners was 12 years. High adopters' average grade level (13 years) was considerably higher than that of the low adopters (11 years).

9. The median gross family income for all owners was $9,143. High adopters had a median of $12,000 and low adopters about $8,000.

10. Seventy percent of all owners surveyed reported that they had not marketed any timber in the period 1967-72. Thus, relatively few owners reported any timber sales.

11. The average age of all owners was 51.3 years. Sixty-eight percent of all woodland owners were 50 years of age or more. There was

no significant difference in ages of high and low adopters in the 50 years of age or over categories.

12. Sixty-two percent of all owners were at least "somewhat interested" in improving their woodlands. More of the high adopters (35 percent) than the low (none) were "very interested."

13. Fifty percent of all woodland owners were "not interested" in any of the forest management systems. However, only 25 percent of high adopters said "not interested" compared to 66 percent of the low adopters.

14. Eighty-two percent of all woodland owners interviewed in Sequatchie County reported their woodland to be "fair" or better. A higher percentage (27 percent) of low adopters rated their woodland "poor" than the high (5 percent).

15. Only 6 percent of all woodland owners surveyed were female. All were low adopters.

## II. IMPLICATIONS

Assuming that the small woodland owners interviewed in Sequatchie County were typical, the following implications may be drawn from the findings:

1. The land owners in Sequatchie County would probably be friendly to educational programs developed in the forestry area by the Extension Service.

2. The small size of the average woodland acreage owned in the county would make it difficult to depend upon forest income as the major source of farm family income.

3. Although other major enterprises are in more favorable competitive positions than forestry regarding owner time and interest, forestry income could supplement family income.

4. Where larger woodland acreages (50 acres or more) were owned by families, interest tended to be higher in woodland management. The larger woodland owner audience should be more receptive to programs in forestry management.

5. Most owners lived on or near the land that included their woodland acreage; therefore, conceivably at least part of their spare time could be devoted to using recommended forestry practices.

6. Forestry programs should be designed to show how forestry practices could be carried out during slack times of year.

7. In planning for educational programs, consideration should be given for the variations in educational audiences. Although the average educational level for all owners was twelve years, their range was from the sixth grade through graduate work in college.

8. The large differences in ages of the land owners would need to be considered in developing educational programs (i.e. owners ranged in age from 30 years of age to over 60 years).

9. Eighty-two percent of all owners rated their woodland as "fair" or better even though they received little or no income from it during the 1967-1972 years period. Obviously, woodland owners would profit by timber sales and increased value of their woodland if it was in a higher state of production.

10. A relatively large percentage (38 percent) of all woodland owners experssed little or no interest in woodland improvement. Careful planning would be necessary to involve them in an educational program.

# PROBLEM B:

# MANAGEMENT PRACTICES OF SEQUATCHIE COUNTY SMALL WOODLAND OWNERS

# CHAPTER I

## INTRODUCTION

Historically the forest industry has made a major contribution to the economic development of Sequatchie County. It has served as an important source of income from the sale of timber.

Forests cover 141,700 acres or 81 percent of the county land area. Several large tracts owned by timber and mining companies make up 123,500 acres of the above-listed acreage. Small farm woodlands own about 11,000 acres of woodland. Four small sawmills and a furniture plant employ about 80 people.

Sequatchie County forests contain several valuable species, among then are: pine, maple, oak, poplar, hickory, beech and cedar. Much of the land is covered with poor quality timber because the past management practices was to cut the more valuable trees and leave trees of lower value to grow. Fires were allowed to burn large acreages of woodland in the 1930's, 1940's and 1950's and this lowered the quality of the remaining trees in such burned over areas. The usual practice was to burn and graze the mountain land (14). Land owners have not realized maximum income from their timber sales as they expected because immature and low value trees were being harvested. Thousands of acres of poorly stocked woodland have been reforested by some of the land companies and small woodland owners.

Most woodland owners in Sequatchie County consider woodland as a comparatively poor income-producing crop. They felt that it took too long to grow timber to make it profitable within their lifetimes. In previous studies, woodland owners reportedly contended that more rewarding activities demand their time. This was especially true of those engaged in commercial farming activities. The expense involved in converting woodland areas from poor quality species to more desirable species also was seen to be a problem for the low income farmers.

In general, however, farmers are known to want some woodland on their farms for lumber, posts, firewood, shade for cattle, wildlife, conservation, recreation, a long-term investment, and aesthetic value.

If the present woodland acreage was properly managed, and the land areas reclaimed where needed the annual future income from trees could yield an average of 10 to 15 dollars per acre per year (14).

Little was known about the forest management practices of Sequatchie County woodland owners until this study was made. Most foresters and others had speculated concerning practice use and why landowners used certain practices. It was felt that a study of the situation concerning presently-used management practices of small woodland owners would provide sound information to use as a base for educational programs designed to help present and future woodland owners become better managers of their woodlands.

## I. THE PURPOSE OF THE STUDY

The purpose of this study was to determine which of certain recommended forestry management practices were being used by Sequatchie

County woodland owners. An attempt also was made to determine any differences that might have existed between high adopters and low adopters regarding the adoption of selected recommended woodland practices.

## II. REVIEW OF LITERATURE

Recent studies conducted in Tennessee and other states recorded information concerning the small woodland owners and the management practices that they were using. Some of the studies attempted to show differences that existed between innovaters and noninnovaters in relation to their acceptance and use of recommended forest management practices.

In an interview-type study in five counties of Tennessee during 1962-63 Sharp and Dotson (19:iii) found that innovaters (high adopters) tended to be farther along in the adoption process than were the noninnovaters (low adopters) with regard to all 12 practices having special relevance to Tennessee. The total group average was as far along as the "trial stage" on the practice "shopping around for the best price for selling trees," but most indicated that they sold to the "usual buyer" without consulting other buyers.

The total group (20:iv) on the average was in the "planning to try stage" on each of the following nine practices: (1) having a plan for growing and selling woodland products; (2) getting professional forestry advice; (3) participating in government forestry programs; (4) planting for reforestation; (5) establishing trees on appropriate open land; (6) marking for selective cutting; (7) thinning the woods;

(8) using a written contract; and (9) selling trees to obtain optimum returns.

Average owners were found to be in the "interested stage" on the practice of "killing undesirable trees." They were in the "awareness" stage on the practice of "participating in non-government forest programs."

A study of privately-owned small woodlands in the Tennessee Valley reported by Richard Kilbourne (9) showed that 52 percent of all the wooded area (representing 64 percent of the land owners) was still classed as "poor" quality trees. Some progress had been made. Forty-eight percent of the privately-owned woodlands was receiving some kind of management assistance. Twelve percent rated "good" to "excellent." There were high hopes that the $355,000,000 timber business in the Tennessee Valley could move rapidly toward the approximately one billion dollar potential or three times as great an income as when the survey was made.

Barraclough (2:12) stated that research was needed to show exactly what forest management had to offer an owner. The findings of silviculture and engineering research, he noted, must be related to the individual owner's problems.

Lionberger (11:103) in his writing concerning the adoption of new ideas by rural people noted that since successful farm practice adoption was instrumental in providing the means for supporting a higher level of living, a positive correlation between the two would be expected and generally found.

Don Kittenbiel in a 1963 speech concerning forest management practices of small woodlot owners in the Tennessee Valley (2:12) said that a representative acre on the Cumberland Plateau could furnish an income of approximately $112 per acre over a 35 year period above a 5.5 percent annual interest charge for all money invested. This would be an approximately 13.5 percent annual return on investment if recommended woodland practices were followed.

Romancier and Brender in a Southeastern Forest Experiment Station paper written in 1962 (16) stated that trees can be a crop, just as corn and cotton. Trees, however, differ in that all along the way they reach maturity one product or another, and usually some are left to increase in value. They also noted how recommended management practices paid off during a 12-year period on a 38 acre woodlot.

Black (3:436) listed the following practices that should be included in recommended woodland management programs: (1) control fire; (2) remove the less desirable trees; and (3) develop a management plan for operating the woodlot.

Frutchey and Williams (8:4) noted that "good" woodland managers were in the "trial" and "adoption" stages of the diffusion process. Poor managers were in the "aware of," "interested in," or "exploration stages" of the diffusion process. They also found that the more efficient woodland managers usually sought and used technical assistance in forestry.

## III. METHODS

A complete list of all farmers (300) in Sequatchie County was obtained from the Sequatchie County Agricultural Stabilization and Conservation Office. From that list, a panel composed of the County Agricultural Agent and the Soil Conservation Service Technician and associate Agricultural Agent selected 40 high adopters. All those other than the 40 high adopters were listed as low adopters. Thirty low adoption farmers were randomly selected to be interviewed.

Definitions of high adopters, low adopters, and small woodland owners were presented earlier in Problem A. Each woodland owner was personally interviewed concerning his woodland. In obtaining the information on management practices, the interviewer made brief explanations in order to get the accurate opinions and practices of the owners. The respondent, therefore, understood each practice and answered as he was carrying out the practice.

## IV. RATING EXPLANATION

Twenty-one recommended woodland management practices were included in the interview schedule in an effort to determine the management level at which small woodland owners in Sequatchie County were operating.

The following rating system was used to identify management levels of landowners on each of the twenty-one forestry practices: (1) no points were given if the owner was "unaware" of the specific practice; (2) one point if owner was only "aware" of the practice;

(3) two points were given if the owner was only "interested" in the practice; (4) three points were given if the owner had not tried the practice, but "planned to try it"; (5) four points were given if owner had "tried" the practice but was "not using" it at the time of the interview; and (6) five points were given if the owner tried the practice and was still "using" it.

For study purposes, average practice diffusion ratings of the groups were compared as they fell in one or another of the following stages: "unaware," 0-.49; "aware," .50-1.49; "interested in it," 1.50-2.49; "planning to try," 2.50-3.49; "tried and not using," 3.50-4.49; and "using," 4.50-5.0.

An average practice diffusion rating was determined for each woodland owner by adding up his total score and dividing by 21 (the number of practices in the interview). Group total average diffusion ratings were completed in order to compare groups, other data reported are percents and averages. The comparisons made are between high adopters and low adopters.

# CHAPTER II

## FINDINGS

### I. INTERVIEWER'S RATING OF WOODLAND MANAGEMENT LEVEL

Table XVII gives the average practice diffusion rating for 50 Sequatchie County Woodland Owners, 20 high adopters and 30 low adopters, as each owner was rated by the interviewer.

The total average practice diffusion rating for all owners was 1.62, just "interested" in the practice. The high adopters rated higher (2.15) near the "planning to try" stage, while the low adopters were only "aware" (1.27) of the practices in general. Fifty-two percent of all owners had not even reached the "interested" stage. A smaller percent of high adopters (30 percent) were so classified than was true for low adopters (67 percent).

Thirty-four percent of all owners were in the "planning to try" stage. Only 4 percent of all owners were classified in the "had tried" stage.

### II. PRACTICES IN GENERAL

The data in Table XVIII indicate that the average woodland practice diffusion ratings for all owners ranged from a high of 2.70 on Practice 2 ( Shopping around for best price for selling trees) to a low of 0.10 on Practice 19 (Preparing ground for natural seeding or planting.)

TABLE XVII

INTERVIEWER'S AVERAGE PRACTICE DIFFUSION RATINGS AND TOTAL AVERAGE RATINGS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS BY PERCENTS*

| Average Practice Diffusion Rating Interval** | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| 0.00-0.49 | 6 | 0 | 10 |
| 0.50-1.49 | 46 | 30 | 57 |
| 1.50-2.49 | 34 | 35 | 33 |
| 2.50-3.49 | 10 | 25 | 0 |
| 3.50-4.49 | 4 | 10 | 0 |
| 4.50-5.00 | 0 | 0 | 0 |
| Total | 100 | 100 | 100 |
| Total average rating | 1.62 | 2.15 | 1.27 |

*Percents are rounded to the nearest whole number.

**In the rating scale used: 0 = unaware; 1 = aware of the 21 recommended practices; 2 = interested in the practices; 3 = planning to try the practices; 4 = tried the practices but not using; and 5 = using the practices.

TABLE XVIII

AVERAGE WOODLAND PRACTICE DIFFUSION RATINGS AND TOTAL AVERAGE RATINGS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| Woodland Management Practices | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | | Average Rating | |
| 1. Control grazing (fencing out livestock) | 2.58 | 3.15 | 2.20 |
| 2. Shopping around for best price for selling trees | 2.70 | 3.00 | 2.50 |
| 3. Established woodland on open land suited to trees | 1.50 | 2.50 | .83 |
| 4. Selling trees to obtain optimum returns | 2.50 | 3.15 | 2.06 |
| 5. Establishing a diameter limit for trees to be cut | 2.48 | 2.95 | 2.16 |
| 6. Killing undesirable trees | 1.76 | 2.05 | 1.56 |
| 7. Planting trees to reforest woodland | 1.52 | 2.00 | 1.13 |
| 8. Using a written contract in selling trees | 2.14 | 2.85 | 1.66 |
| 9. Getting the advice of professional foresters | 1.58 | 2.35 | 1.06 |
| 10. Marking trees for selective cutting | 1.86 | 2.25 | 1.60 |
| 11. Starting to harvest trees within a year after marking | 1.84 | 2.60 | 1.33 |
| 12. Having a plan for growing and selling timber and/or other forest products | 2.52 | 3.00 | 2.20 |
| 13. Thinning the woods | 2.02 | 2.60 | 1.63 |

TABLE XVIII (Continued)

| Woodland Management Practices | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | | Average Rating | |
| 14. Pruning stand trees | .40 | .55 | .30 |
| 15. Participating in non-government forestry programs | 1.64 | 2.80 | .87 |
| 16. Making an inventory of the salable timber in your woodland and its value | 1.68 | 2.20 | 1.33 |
| 17. Controlling insects | .42 | .65 | .27 |
| 18. Constructing fire lanes | 1.28 | 1.65 | 1.03 |
| 19. Preparing ground for natural seeding or planting | .10 | .20 | .03 |
| 20. Controlling disease outbreaks | .46 | .55 | .40 |
| 21. Participating in ASC or other forestry programs | .83 | 1.70 | .70 |
| Total Average Rating | 1.62 | 2.15 | 1.27 |

*In the rating scale used: 0 = unaware of the practice; 2 = interested in the practice; 3 = planning to try the practice; 4 = tried the practice, but not now using it; and 5 = using the practice.

The high adopters highest average rating was 3.15 on Practice 1 (Control grazing) and Practice 4 (Selling trees to obtain optimum returns); while their lowest average rating was only 0.20 on Practice 19 (Preparing ground for natural seeding or planting).

The low adopters' highest average rating was on Practice 2 (Shopping around for the best price for selling trees) and their lowest average rating was 0.03 on Practice 19 (Preparing ground for natural seeding or planting).

The average practice diffusion score for all owners was below the middle (1.62) of the interested stage. The high adopters' rating (2.15) was higher in this stage than the low adopters' rating (1.27). The high adopters' average practice diffusion rating was higher on each and every practice than the low adopters'.

Groups of practices were included in the survey schedule related to certain important aspects of woodland production and marketing. They were as follows: Practices related to the planning of woodland; Practices related to the establishment of the woodland; Practices related to the growth and maintenance of the woodland, and practices related to the marketing of timber and woodland products. Each of these will be discussed separately in the following paragraphs.

## III. PRACTICES RELATED TO PLANNING OF THE WOODLAND

Four of the woodland management practices studied were related to planning the woodland. The practices listed in this group included 9, 12, 15, and 21. Each of these practices will be treated separately as they are related in Tables XVIII, XIX, XX, and XXI.

PERCENTS OF ALL OWNERS AT THE VARIOUS STAGES OF THE DIFFUSION PROCESS WITH REGARD TO SELECTED WOODLAND MANAGEMENT PRACTICES

| Woodland Management Practice | Unaware | Aware | Interested | Plan to Try | Tried and Not Using | Using | Total N=50 |
|---|---|---|---|---|---|---|---|
| | Percentage | | | | | | |
| 1. Control grazing (fencing out livestock) | 14 | 22 | 18 | 6 | 18 | 22 | 100 |
| 2. Shopping around for best price for selling trees | 16 | 22 | 16 | 4 | 16 | 26 | 100 |
| 3. Establishing woodland on open land suited to trees | 18 | 52 | 14 | 2 | 4 | 10 | 100 |
| 4. Selling trees to obtain optimum returns | 12 | 20 | 24 | 8 | 22 | 14 | 100 |
| 5. Establishing a diameter limit for trees to be cut | 16 | 24 | 12 | 10 | 20 | 18 | 100 |
| 6. Killing undesirable trees | 20 | 44 | 4 | 6 | 10 | 16 | 100 |
| 7. Planting trees to reforest woodland | 10 | 56 | 20 | 2 | 8 | 4 | 100 |
| 8. Using a written contract for selling trees | 20 | 34 | 12 | 10 | 14 | 10 | 100 |
| 9. Getting advice of professional forester | 24 | 30 | 26 | 10 | 4 | 6 | 100 |
| 10. Marking trees for selective cutting | 22 | 30 | 18 | 12 | 6 | 12 | 100 |
| 11. Starting to harvest trees within one year after marking | 36 | 16 | 12 | 10 | 16 | 10 | 100 |

TABLE XIX (Continued)

| Woodland Management Practice | Unaware | Aware | Interested | Plan to Try | Tried and Not Using | Using | Total N=50 |
|---|---|---|---|---|---|---|---|
| | Percentage | | | | | | |
| 12. Having a plan for growing and selling timber and/or other forest products | 14 | 24 | 18 | 8 | 12 | 24 | 100 |
| 13. Thinning the woods | 22 | 32 | 10 | 4 | 14 | 16 | 100 |
| 14. Pruning stand trees | 78 | 12 | 4 | 4 | 2 | 0 | 100 |
| 15. Participating in non-government forestry programs | 40 | 22 | 10 | 2 | 14 | 12 | 100 |
| 16. Making an inventory of the salable timber in your woodland and its value | 14 | 40 | 26 | 10 | 4 | 6 | 100 |
| 17. Controlling insects | 64 | 34 | 2 | 2 | 0 | 0 | 100 |
| 18. Constructing firelanes | 18 | 58 | 14 | 4 | 0 | 6 | 100 |
| 19. Preparing ground for natural seeding or planting | 94 | 4 | 0 | 2 | 0 | 0 | 100 |
| 20. Controlling disease outbreaks | 66 | 26 | 4 | 4 | 0 | 0 | 100 |
| 21. Participating in ASCS or other forestry programs | 36 | 42 | 8 | 4 | 2 | 8 | 100 |
| Total Average Percent | 31 | 31 | 13 | 6 | 9 | 10 | 100 |

TABLE XX

PERCENTS OF HIGH ADOPTERS AT THE VARIOUS STAGES OF THE DIFFUSION PROCESS WITH REGARD TO SELECTED WOODLAND MANAGEMENT PRACTICES

| Woodland Management Practice | Unaware | Aware | Interested | Plan to Try | Tried and Not Using | Using | Total N=50 |
|---|---|---|---|---|---|---|---|
| | Percentage | | | | | | |
| 1. Control grazing (fencing out livestock) | 5 | 20 | 20 | 0 | 20 | 35 | 100 |
| 2. Shopping around for the best price for selling trees | 10 | 20 | 10 | 5 | 30 | 25 | 100 |
| 3. Establishing woodland on open land suited to trees | 5 | 40 | 15 | 5 | 10 | 25 | 100 |
| 4. Selling trees to obtain optimum returns | 5 | 20 | 10 | 10 | 30 | 25 | 100 |
| 5. Establishing a diameter limit for trees to be cut | 5 | 25 | 10 | 10 | 30 | 20 | 100 |
| 6. Killing undesirable trees | 25 | 30 | 0 | 10 | 5 | 30 | 100 |
| 7. Planting trees to reforest woodland | 10 | 30 | 30 | 5 | 20 | 5 | 100 |
| 8. Using a written contract for selling trees | 5 | 25 | 15 | 10 | 25 | 20 | 100 |
| 9. Getting advice of professional forester | 10 | 30 | 15 | 20 | 10 | 15 | 100 |
| 10. Marking trees for selective cutting | 15 | 25 | 20 | 15 | 10 | 15 | 100 |

TABLE XX (Continued)

| Woodland Management Practice | Unaware | Aware | Interested | Plan to Try | Tried and Not Using | Using | Total N=50 |
|---|---|---|---|---|---|---|---|
| | Percentage | | | | | | |
| 11. Starting to harvest trees within one year after marking | 10 | 25 | 10 | 20 | 20 | 15 | 100 |
| 12. Having a plan for growing and selling timber and/or other forest products | 10 | 20 | 10 | 15 | 10 | 35 | 100 |
| 13. Thinning the woods | 20 | 20 | 5 | 10 | 25 | 20 | 100 |
| 14. Pruning stand trees | 75 | 10 | 5 | 5 | 5 | 0 | 100 |
| 15. Participating in non-government forestry programs | 25 | 10 | 5 | 5 | 30 | 25 | 100 |
| 16. Making an inventory of the salable timber in your woodland and its value | 10 | 25 | 30 | 15 | 10 | 10 | 100 |
| 17. Controlling insects | 50 | 40 | 5 | 5 | 0 | 0 | 100 |
| 18. Constructing firelanes | 10 | 55 | 15 | 10 | 0 | 10 | 100 |
| 19. Preparing ground for natural seeding or planting | 90 | 5 | 0 | 5 | 0 | 0 | 100 |
| 20. Controlling disease outbreaks | 60 | 30 | 5 | 5 | 0 | 0 | 100 |
| 21. Participating in ASCS or other forestry programs | 35 | 35 | 0 | 5 | 5 | 20 | 100 |
| Total Average Percent | 23 | 26 | 11 | 9 | 14 | 17 | 100 |

TABLE XXI

PERCENTS OF LOW ADOPTERS AT THE VARIOUS STAGES OF THE DIFFUSION PROCESS WITH REGARD TO SELECTED WOODLAND MANAGEMENT PRACTICES*

| Woodland Management Practice | Unaware | Aware | Interested | Plan to Try | Tried and Not Using | Using | Total N=50 |
|---|---|---|---|---|---|---|---|
| | Percentage | | | | | | |
| 1. Control grazing (fencing out livestock) | 20 | 23 | 17 | 10 | 17 | 13 | 100 |
| 2. Shopping around for best price for selling trees | 20 | 23 | 20 | 3 | 7 | 27 | 100 |
| 3. Establishing woodland on open land suited to trees | 27 | 60 | 13 | 0 | 0 | 0 | 100 |
| 4. Selling trees to obtain optimum returns | 16 | 20 | 33 | 7 | 17 | 7 | 100 |
| 5. Establishing a diameter limit for trees to be cut | 23 | 24 | 13 | 10 | 13 | 17 | 100 |
| 6. Killing undesirable trees | 17 | 53 | 7 | 3 | 13 | 7 | 100 |
| 7. Planting trees to reforest woodland | 10 | 74 | 13 | 0 | 0 | 3 | 100 |
| 8. Using a written contract for selling trees | 30 | 40 | 10 | 10 | 7 | 3 | 100 |
| 9. Getting advice of professional forester | 33 | 30 | 34 | 3 | 0 | 0 | 100 |
| 10. Marking trees for selective cutting | 27 | 33 | 17 | 10 | 3 | 10 | 100 |

TABLE XXI (Continued)

| Woodland Management Practice | Unaware | Aware | Interested | Plan to Try | Tried and Not Using | Using | Total N=50 |
|---|---|---|---|---|---|---|---|
| | Percentage | | | | | | |
| 11. Starting to harvest trees within one year after marking | 54 | 10 | 13 | 3 | 13 | 7 | 100 |
| 12. Having a plan for growing and selling timber and/or other forest products. | 17 | 27 | 23 | 3 | 13 | 17 | 100 |
| 13. Thinning the woods | 23 | 44 | 13 | 0 | 7 | 13 | 100 |
| 14. Pruning stand trees | 80 | 14 | 3 | 3 | 0 | 0 | 100 |
| 15. Participating in non-government forestry programs | 50 | 30 | 14 | 0 | 3 | 3 | 100 |
| 16. Making an inventory of the salable timber in your woodland and its value | 17 | 50 | 23 | 7 | 0 | 3 | 100 |
| 17. Controlling insects | 73 | 27 | 0 | 0 | 0 | 0 | 100 |
| 18. Constructing firelanes | 23 | 60 | 14 | 0 | 0 | 3 | 100 |
| 19. Preparing ground for natural seeding or planting | 97 | 3 | 0 | 0 | 0 | 0 | 100 |
| 20. Controlling disease outbreaks | 70 | 24 | 3 | 3 | 0 | 0 | 100 |
| 21. Participating in ASCS or other forestry programs | 37 | 47 | 13 | 3 | 0 | 0 | 100 |
| Total Average Percent | 36 | 34 | 14 | 5 | 5 | 6 | 100 |

*Percents are rounded to the nearest whole number.

The data indicate that all owners (average rating of 1.58) were in the "interested" stage on Practice 9 (Getting the advice of a professional forester). The high adopters' average diffusion rating (2.35), "interested" stage, was more than double the low adopters' (1.06) "awareness" stage. Thirty percent of all owners were in the "aware" stage of the practice; another 26 percent were in the "interested" stage, and 6 percent were in the "using" stage. When high adopters and low adopters were compared, it was found that 15 percent of the high adopters and none of the low adopters were "using" the practice. Thirty percent of high adopters were in the "aware" stage and 10 percent in the "unaware" stage, while 30 percent of the low adopters were in the "aware" stage and 33 percent were in the "unaware" stage.

Another practice related to the planning of the woodland is Practice 12 (Having a plan for growing and selling timber and/or other forest products). The average diffusion rating of all owners in this Practice (2.52) place them in the "planning to try" stage. High adopters were in the middle of the "planning to try" stage (3.00); in comparison, low adopters were in the "interested" stage (2.20).

Fourteen percent of all owners were "unaware" and 24 percent were aware of this practice and 24 percent said they were using the practice.

Twenty percent of high adopters were "aware" and 10 percent were in the "unaware" stage compared to the low adopters with 27 percent "aware" and 17 percent "unaware" of this practice.

Thirty-five percent of the high adopters were "using" the practice, while only 17 percent of the low adopters were "using" it.

Thirteen percent of the low adopters and 10 percent of the high had "tried" and were "not using" the practice.

Practice 15 (Participating in non-government forestry programs) was also related to the planning of the woodland. The average rating for all owners (1.64) placed them in the "interested" stage. The high adopters (2.80) were "planning to try" and the low adopters (.87) were aware of the practice.

Sixty-two percent of all owners were not even "interested" in this practice and only 12 percent were "using" it. The data further indicate that 10 percent of the high adopters were in the "aware" stage, 5 percent "interested," and 25 percent were completely "unaware" compared to the low adopters with 30 percent "aware," 50 percent "unaware" and 13 percent "interested" in the practice. Twenty-five percent of high adopters were "using" it compared to only 3 percent of the low adopters so classified. Five percent of the high adopters were "planning to try," 30 percent "had tried" but "were not using"; while none of the low adopters "planned to try" and 3 percent "had tried" and another 3 percent were "not using" the practice.

The planning practice with the least appeal to all owners was Practice 21 (Participating in ASCS or other forestry programs). All owners (.83) were in the "aware" stage. The high adopters, on the average (1.70), were "interested" in the practice compared to the low adopters (0.70) who were "aware" of the practice.

The Agricultural Stabilization and Conservation program practices available to Sequatchie County farmers included Practice 7 (Planting forest tree seedlings) and Practice 6 (Killing undesirable trees) combined.

Forty-two percent of all owners were "aware" of Practice 21, 3 percent were "interested," 4 percent "planned to try," and 8 percent were "using" the practice. Twenty percent of high adopters were "using" the practice, compared to none of the low adopters using the practice.

## IV. PRACTICES RELATED TO THE ESTABLISHMENT OF THE WOODLAND

The Sequatchie County woodland owners were given a practice diffusion rating on three practices (3, 7 and 19) related to establishment of the woodland.

Reference to Tables XVIII, XIX, XX, and XXI, pages 49, 52, 54, 56, respectively, indicates that Practice 3 (Establishing woodland on open land suited to trees) was one in which all owners were barely "interested" (1.50) in. The high adopters rating (2.50) indicated that they were in the higher "planning to try" stage, while the low adopters rating (0.83) showed that they were only in the lower "aware" stage. A small 10 percent of all owners were using this practice. Fifty-two percent of the owners were "aware," 14 percent were "interested," 2 percent "planned to try" it, and 18 percent were "unaware" of the practice. Twenty-five percent of the high adopters were "using" the practice compared to none of the

low adopters. A total of 45 percent of high adopters were in the combined "aware" and "unaware" stages; while 87 percent of the low adopters were so classified. The high adopters and low adopters rated almost the same 15 percent and 13 percent respectively in the "interested" stage. Five percent of the high adopters were "planning to try" the practice compared to none of the low adopters.

The most frequently used of the practices relating to establishment of the woodland was Practice 7 (Planting trees to reforest woodland). All owners rated (1.52) in the "interested" stage. The high adopters rating of (2.00) was considerably higher than the low adopters (1.13) in the "awareness" stage.

Five percent of the high adopters were using this practice compared to 3 percent of the low adopters. Thirty percent of the high adopters were in the "aware" stage and ten percent were "unaware," while 83 percent of low adopters were in this category. More high adopters (30 percent) were "interested" than low adopters (13 percent). Five percent of high adopters and no low adopters were "planning to try" practice. It is interesting to note that the like percents (10 percent) of high and low adopters were "unaware" of this practice.

Finally, small woodland owners were in the "unaware" stage (.10) concerning Practice 19 (Preparing ground for natural seeding or planting).

## V. PRACTICES RELATED TO GROWTH AND MAINTENANCE OF THE WOODLAND

This study includes seven practices which related to the growth and maintenance of the woodland. The seven practices are

iscussed below with reference to data in Tables XVIII, XIX, XX and XI, pages 49, 52, 54, and 56.

All Sequatchie County owners rated Practice 1 (Control grazing) the second highest among all twenty-one practices. It was rated highest of the seven practices discussed here. The average practice diffusion rating for all owners (2.58) was in the "planning to try" stage. There was considerable difference between high adopters (3.15) and low adopters (2.20). Twenty-two percent of all owners were using the practice. More high adopters (35 percent) were using this practice than was true for low adopters (13 percent).

Practice 6 (Killing undesirable trees) was rated for all owners (1.76) in the "interested" stage. High adopters (2.05) were in the upper part of the "interested" stage, while the low adopters (1.56) were barely "interested." Sixteen percent of all owners were "using" the practice and 10 percent were "planning to try" or "interested." Sixteen percent of all owners were "using" the practice and 10 percent were "planning to try" or "interested." Over one-third (40 percent) of the high adopters were in either the "planning to try" or "interested" stage, and 30 percent were "using" the practice. In comparison, only 10 percent of the low adopters indicated that they were in either the "interested" or "planning to try" stage, and 7 percent said they were "using" the practice. Thirty percent of the high adopters rated as low as the "aware" stage; while a total of 70 percent of the low adopters were classified in the combination of the "unaware" and "aware" stages on this practice.

Practice 13 (Thinning the woods) was rated in the "interested" stage of all owners. This practice, which is closely related to the growth of quality timber, was used more by high adopters (average rating of 2.60) who were in the "planning to try" stage than by low adopters (1.63). Fifty-six percent of all the owners were "unaware" and "aware" of this practice, and 16 percent were "using" it. Twenty percent of the high adopters were "using" the practice and a combined 40 percent were "interested," "planning to try," or had "tried," compared to 13 percent of the low adopters "using" the practice and 13 percent "interested" or "planning to try" it.

A study of management Practice 14 (Pruning stand trees) show that it rated (0.40) next to last in the average owner "awareness" stage. Five percent of the high producers had at least "tried" the practice, while none of the low adopters had.

Practice 17 (Controlling insects) was third from the bottom on the practice diffusion scale (0.42) for all owners. This placed them in the "unaware" stage. High adopters (0.65) were barely "aware" and low adopters (0.23) were "unaware."

The fire control Practice 18 (Constructing firelanes) found all owners (1.28) in the "aware" stage with high adopters rating (1.65) "interested" and low (1.03) near the middle of the "aware" stage. Ten percent of high adopters were "using" the practice compared to 3 percent of the low adopters.

Management Practice 20 (Controlling disease outbreaks) rated relatively low (0.46) among all owners which placed them in the "unaware"

stage. High adopters rated "aware" (0.55) and low adopters rated "unaware" (0.40), respectively.

## VI. PRACTICES RELATED TO THE MARKETING OF TIMBER AND WOODLAND PRODUCTS

Seven of the 21 practices (2, 4, 5, 8, 10, 11, 16) studied related to marketing of timber and woodland products. The average diffusion ratings and percents of owners in various stages of the diffusion process in relation to these seven woodland management practices are shown in Tables XVIII, XIX, XX, XXI, pages 49, 52, 54, and 56.

The most popular management practice in the study was Practice 2 (Shopping around for the best price for selling trees). The average practice diffusion rating for all owners (2.70) placed them in the "planning to try" stage. Twenty-six percent of all owners were "using" the practice. Twenty percent of all owners were in the "interested" or "plan to try" stage. Thirty percent of high adopters "had tried" the practice. About one-fourth each of high and low adopters were "using" the practice.

Practice 4 (selling trees for optimum returns) rated fairly high with all owners because their rating (2.50) placed them in the "planning to try" the practice stage. High adopters (3.15) were rated in the "plan to try" stage and low adopters (2.06) were in the "interested" stage. Fourteen percent of all owners were "using" the practice. Over three times as many high adopters (25 percent) were "using" the practice as were the low adopters (7 percent).

Twenty percent of high adopters and forty percent of low adopters were in combined "interested" and "plan to try" stages.

Another practice related to marketing of timber was Practice 5 (Establishing a diameter limit for trees to be cut). The average practice rating of all owners (2.48) was in the high "interest" stage. High adopters (2.95) were in the "plan to try" stage, while low adopters (2.16) were "interested." Twenty-four percent of all owners were in the "aware" stage and 18 percent were "using" the practice. The high adopters (20 percent) and low adopters (17 percent) were relatively close in the "using" category. Five percent of high adopters were "unaware" of the practice; while 23 percent of low adopters were in that stage.

In making marketing agreements, such as that indicated in Practice 8 (Using a written contract for selling trees), the average diffusion rating for all Sequatchie County owners (2.14) placed them in the "interested" stage. The high adopters' average rating (2.85) was considerably higher than the low adopters' (1.66), "interested." Thirty-four percent of all owners were "aware" of this practice and only 10 percent were "using" it. Twenty percent of high adopters compared to 3 percent of low adopters were "using" the practice. Fifteen percent of the high adopters compared to 10 percent of the low adopters were "interested" in the practice.

Practice 10 (Marking trees for selective cutting), all owners average (1.86) in the "interested" stage. High adopters (2.25) and low adopters (1.60) were both in the "interested" stage. Thirty

percent of all owners were "aware," while 33 percent of low adopters were "aware." Fifteen percent of high adopters were "using" the practice compared to none of the low adopters.

A study of Practice 11 (Starting to harvest trees within one year after marking) shows that all owners (1.84) were, on the average, in the "interested" stage. High adopters (2.60) were in the "interested" stage; while low adopters (1.33) were "aware." Sixteen percent of all owners were "aware" of the practice, however only 10 percent were "using" it. Fifteen percent of high adopters were "using" the practice compared to 10 percent of low adopters.

Another valuable practice related to the marketing of timber was Practice 16 (Making an inventory of the salable timber in your woodland and its value). All owners surveyed (1.68) rated in the "interested" stage concerning this practice. High adopters (2.20) were rated in the "interested" stage; while low adopters (1.33) were only "aware" of it. Fourteen percent of all owners were "unaware" of this practice. Ten percent of high adopters compared to three percent of low adopters were "using" the practice. Thirty percent of high adopters compared to 23 percent of low adopters were "interested" in the practice.

## VII. SYSTEM USED TO ARRIVE AT PRICE PER TIMBER UNIT

The data in Table XXII indicate that 68 percent of all owners did not sell any timber in the five years previous to the study. Slightly fewer low adopters (67 percent) than high adopters (70 percent)

TABLE XXII

SYSTEM USED FOR ARRIVING AT THE PRICE PER TIMBER UNIT MARKETED THE PREVIOUS FIVE YEARS BY PERCENTS OF ALL OWNERS, HIGH ADOPTERS, AND LOW ADOPTERS*

| System Used to Arrive at Price Per Timber Unit Sold | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Did not sell timber | 68 | 70 | 67 |
| Sold to usual buyer without consulting other buyers | 10 | 0 | 17 |
| Sold to usual buyer after consulting other buyers | 16 | 15 | 16 |
| Sold to higher bidder after determining all possible prices | 6 | 15 | 0 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

.ad sold any timber in the five-year period. Ten percent of all ›wners (all low adopters) sold to the usual buyer without consulting ›ther buyers. Sixteen percent of all owners (like percents of high .nd low) sold to the usual buyer after consulting other buyers and ›nly 6 percent (all high adopters) sold to the highest bidder after :onsidering all possible sources.

## VIII. SOURCES KNOWN FOR TIMBER MARKET INFORMATION

By referring to the data in Table XXIII, one can observe that ›6 percent of all owners "did not know" any source of timber market .nformation. Fewer high adopters (30 percent) were in this category :han low adopters (40 percent). One-half (50 percent) of low adopters :eceived their timber market information from their "neighbor" or 'friend," as did 40 percent of high adopters. Twenty percent of ›igh adopters used "two or more professionals" as a source of timber ›arket information compared to only 7 percent for low adopters. :en percent of high adopters obtained assistance from the Tennessee ?orest "service forester" compared to 3 percent of the low adopters. ?he Extension forester was not used by any land owner.

## IX. INTEREST IN OBTAINING TIMBER MARKET INFORMATION

Almost two-thirds (64 percent) of all owners were at least 'somewhat interested" in obtaining timber market information as shown in Table XXIV. Seventy-five percent of the high adopters were at least 'somewhat interested" compared to 57 percent of the low adopters.

TABLE XXIII

SOURCES KNOWN FOR TIMBER MARKET INFORMATION BY PERCENTS OF ALL OWNERS, HIGH ADOPTERS, AND LOW ADOPTERS*

| Source of Information | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | | Percentage | |
| Did not know | 36 | 30 | 40 |
| Extension Forester | 0 | 0 | 0 |
| Service Forester | 6 | 10 | 3 |
| Two or More Professionals | 12 | 20 | 7 |
| Neighbor or Friend | 46 | 40 | 50 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

TABLE XXIV

INTEREST IN OBTAINING TIMBER MARKET INFORMATION FOR TIMBER AND OTHER PRODUCTS SHOWN BY PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| egree of Interest in Obtaining arket Information | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| ery Interested | 12 | 30 | 0 |
| omewhat Interested | 52 | 45 | 57 |
| ndifferent | 6 | 5 | 7 |
| ot Interested | 30 | 20 | 36 |
| otal | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

Forty-two percent of low adopters were either "not interested" or "indifferent;" while fewer, only 25 percent of the high adopters placed in these categories. A greater number (30 percent) of high adopters were "very interested" in obtaining information than low adopters (none).

## X. SOURCES KNOWN FOR TIMBER PRODUCTION COST INFORMATION

Fifty percent of all land owners interviewed indicated that they did not know a source of timber production cost information. The data in Table XXV also indicate that 25 percent of high adopters compared to 10 percent for low adopters and 16 percent of all owners considered the County Agent as their source of timber production cost information. Thirty percent of high adopters said they consulted "two or more professionals" for timber production cost information. There was great difference between high adopters (30 percent) and low adopters (7 percent) on this question. Ten percent of the high adopters and none of the low said the "Extension Forester" could provide their timber production cost information. The service forester and soil conservationist were indicated as their source of timber cost production information by 6 percent and 4 percent of all owners, respectively. Only 4 percent of all owners and 6 percent of low adopters indicated a "neighbor or friend" as a source of timber production cost information.

TABLE XXV

SOURCES KNOWN FOR TIMBER PRODUCTION COST INFORMATION BY PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| Source of Information | All Owners (N=50) | High Owners (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Did not know | 50 | 25 | 67 |
| County Agent | 16 | 25 | 10 |
| Extension Forester | 4 | 10 | 0 |
| Service Forester | 6 | 5 | 7 |
| Soil Conservationist | 4 | 5 | 3 |
| Vocational Agricultural Teacher | 0 | 0 | 0 |
| Two or more Professionals | 16 | 30 | 7 |
| Neighbor or Friend | 4 | 0 | 6 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

## XI. OWNER'S INTEREST IN OBTAINING TIMBER COST PRODUCTION INFORMATION

Forty-six percent of all owners were either "not interested" or "indifferent" toward obtaining timber production cost information as noted in Table XXVI. Fourteen percent of all owners (25 percent of high adopters and 7 percent of low) were "very interested" and 40 percent were "somewhat interested" in obtaining such information. Like 40 percents of both high and low adopters were "not interested" in obtaining timber production cost information.

TABLE XXVI

INTEREST IN OBTAINING INFORMATION CONCERNING TIMBER PRODUCTION COST SHOWN BY PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| Degree to Which Per Acre Timber Production Cost Figures are Needed | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | Percentage | | |
| Very Interested | 14 | 25 | 7 |
| Somewhat Interested | 40 | 30 | 47 |
| Indifferent | 6 | 5 | 6 |
| Not interested | 40 | 40 | 40 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

# CHAPTER III

## SUMMARY

Fifty small woodland owners in Sequatchie County were interviewed during the period 1967-1972 concerning their use of 21 recommended forestry management practices. Owners were questioned concerning their use of the 21 practices and woodland management practice diffusion ratings were established for all owners, high adopters and low adopters. Average practice diffusion ratings were used in comparing the management levels for all owners, high adopters and low adopters in relation to the 21 recommended forestry practices.

Other information was obtained concerning the pricing of timber units, sources known for timber market information, interest of owners in obtaining timber market information for timber and other forest products, sources known for timber production cost information, and owners' interest in obtaining timber production cost information.

## I. REVIEW OF FINDINGS

A summary of the important findings as related to woodland management practices used by owners in Sequatchie County is presented below.

1. The average woodland practice diffusion rating for all owners (1.62, on a 0 to 4.00 scale) placed them in the "interested" practice adoption stage. The high adopters rated higher than the low adopters (1.27) who were only "aware" of the practice in general.

2. High adopters had the highest diffusion rating on all of the 21 practices. At least one full diffusion stage difference was noted between high adopters and low adopters for the following practices in rank order: (a) participating in non-government forestry programs; (b) establishing woodland on open land suited to trees; (c) getting the advice of a professional forester; (d) starting to harvest trees within a year after marking; (e) using a written contract in selling trees; and (f) selling trees to obtain optimum returns.

3. Sixty-eight percent of all owners did not sell any timber in the five-year period (1967-72). However, of those who did, 17 percent (all low adopters) sold to the usual buyer. However, 6 percent (all high adopters) sold to highest bidder.

4. Thirty-six percent of all owners did not know a source of timber market information. Fifty percent of low adopters and 40 percent of high adopters obtained their information from a neighbor or friend. Twenty percent of the high and 7 percent of the low adopters had consulted two or more professionals.

5. Sixty-four percent of all owners were at least "somewhat interested" in obtaining timber marketing information. Thirty percent of the high and none of the low were "very interested."

6. Fifty percent of all land owners (25 percent of high and 67 percent of low adopters) did not know a source of timber production cost information. Twenty-five percent of high and 10 percent of low adopters considered the County Agent their source of timber production cost information. Thirty percent of the high adopters and 7 percent of low said they consulted "two or more professionals."

7. Forty-six percent of all owners were either "not interested" or were "indifferent" to obtaining timber production cost information. Fourteen percent of all owners, mostly high adopters, were "interested" in receiving timber cost production information.

## II. IMPLICATIONS

1. Sequatchie County small woodland owners were generally aware of and interested in the recommended forestry woodland practices, but additional educational effort, management assistance and other incentives will be needed in order to assist landowners to adopt more recommended practices.

2. High adopters were further along in the adoption of recommended forestry practices than the low adopters. This was noted in that high adopters rated higher in the diffusion process on every recommended practice than the low adopters.

It will be necessary to plan to give more attention to the high adopters in order to cause them to advance into the "using" stage of the adoption process. Mass media information, such as newspaper and radio, and group media, like meetings and tours, to inform and influence the "unaware" and the "aware" to move toward the "using" stage.

3. Since very few woodland owners of Sequatchie County sold woodland products in the five-year period studied, and a large number of the owners did not rate their woodlands very highly, these reasons may explain why so many woodland owners have so little interest in the use of recommended woodland practices.

4. More educational effort needs to be made by the Agricultural Extension Service and others to help woodland owners see the value of using recommended forestry management practices.

# PROBLEM C:

# FACTORS INFLUENCING WOODLAND MANAGEMENT ADOPTION BY SEQUATCHIE COUNTY SMALL WOODLAND OWNERS

# CHAPTER I

## INTRODUCTION

This report is based on additional analysis of data from a survey of fifty small woodland owners conducted during 1967-72 in Sequatchie County. The data were collected in an effort to determine what motivated small woodland owners concerning their woodland management decisions.

Over the years, professional agricultural workers, such as the County Extension Agent, Soil Conservation personnel, Tennessee State Foresters, industrial foresters, Tennessee Valley Authority Foresters, and Vocational Agriculture teachers have advised and assisted small woodland owners in Sequatchie County. This assistance has been given mostly on individual request. Only limited effort had been made in previous years to provide information about woodland management practices to the owners through circular letters, tours, demonstrations, farm visits, community club meetings, and news articles.

The potential for economic growth through better forest management makes it imperative that small woodland owners be influenced to avail themselves of their educational opportunities. Information was needed concerning those factors motivating owners to manage their woodlands poorly or well. It was felt that if educational programs were based upon such information, the efforts might be made more successful.

## I. PURPOSE OF THE STUDY

The purpose of this study was to try to determine what factors, other than those identified earlier in Problems A and B, may have influenced Sequatchie County woodland owners to adopt or not adopt recommended forestry practices.

## II. REVIEW OF LITERATURE

In a 1963 study conducted with a total of 425 small woodland owners in Tennessee, Sharp and Dotson reported the following: (1) Nearly two-thirds of the owners felt that small woodland owners did not follow recommended practices because more rewarding activities claimed their time and money; (2) More than one-half of the owners stated that small woodland owners did not follow recommended practices because it took such a long time to grow forestry crops and get an income; (3) About one-third disliked their woodlands because their trees were of the wrong species; and (4) More than one-third felt they did not use recommended forestry management practices for the following reasons: (a) cost of practices outweighs possible benefits, (b) do not have technical knowledge needed, and (c) net benefit would result but it would be too small (19:70).

In a 1945 paper given at the proceedings of the American Philosophical Society where John Black was discussing the role of government in promoting forestry, he reported that the lack of public concern and the indifference of woodland owners were major obstacles to better forestry in this country. This continues to pose a difficult

›lem for foresters. They must find something in the attitudes reactions of people at large, and of timberland owners, so that y can draw these groups into their programs (3).

Worley, in a survey made in Eastern Kentucky revealed that the t important obstacles to good forestry practices were found to be ' incomes and poor education. He suggested that the first step was make the owners aware of the income potential of their woodlands that they could make individual decisions as to the pattern of ɔdland development that best suited their needs (25:5).

Many new technological advances require large scale operations d substantial economic resources for their use according to .rraclough, who reported on an economic analysis of farm forest ›erating units in 1955 (2:101).

Kilbourne of the Division of Forestry relations, Tennessee alley Authority, reported in a 1953 Farm Woodlot Conference in hicago that good forestry practices would be adopted to the extent hat it was economic and made sense from the standpoint of sound usiness management. The extent that this could be done by the small ›oodland owners was still undetermined (9). Black revealed that small ıoldings of woodland could add importantly to their meager incomes if they were well managed; but noted that usually, the need for current income was too pressing to permit investments for the relatively distant future (3:442).

Murray A. Straus, in an article written for Rural Sociology Magazine (June 1959), reported that the extent of social participation

s known to be associated with adoption of improved farming technology, ith income and with other factors related to managerial skill (23:150).

Frutchey, in his research summary on "The Characteristics of ood and Poor Managers of Small Woodlands," reported that owners who ad better timber stands apparently had greater incentive to practice orestry than those having poorer stands (7).

In 1960 Worley (25:5) found that attitudes of the woodland wners in Eastern Kentucky were related to their personal circumstances nd environment, and because of this, their objectives for forest land ften differed from optimum forestry objectives. He saw a need to eorient Kentucky forest research and forestry service from forest bjectives to owner objectives.

Lionberger noted in his report on the "Adoption of New Ideas nd Practices," that the decision to adopt usually took time. pparently people must go through a series of distinguishable stages, uch as AWARENESS (first knowledge), INTEREST (active seeking of nformation), EVALUATION (weighing the evidence), TRIAL (trying out he practice), and ADOPTION (full scale integration of the practice) 11:3).

Cleland in an article published in Rural Sociology, June 1960, aid that information about farm and home practices tended to be passed n in non-church-related, informal groups of friends who get together requently (4:215). Straus came to a similar conclusion in an article ppearing in Rural Sociology in June 1959, as he concluded that the ecisions made by the farmer in his daily operation are influenced in arying degrees by his social relations and by the system of ideas, alues and sentiments to which he subscribes (23:150).

Frutchey, in a 1961 research summary, found that the better anagers usually sought and used technical assistance in forestry atters. Most owners became interested through personal contact. hey responded to encouragement and periodic help from foresters, xtension workers, and other public agencies with trained foresters. hose owners contacted the most tended to do the best forestry work (7:21).

The report given at the 1953 National Woodlot Conference in hicago included a statement that greater responsibilities were being placed on the Extension forester of today. It was felt that he not only needed to know his subject matter and methodology, but also should be qualified to integrate forestry with soil, water, and wildlife development. It was felt that he also should have the ability to organize, plan, and execute a broad-gauge program in cooperation with state agencies, county or community agricultural planning committees, and private groups (1:17).

Rogers and Shoemaker in Communications of Innovations noted that the change agent functions as a communication link between two or more social systems. The change agent must have one foot in each of the two worlds if he is to bridge the gap. A change agent goes through the following sequence of seven roles in the process of introducing an innovation to this client: (1) develops need for change, (2) establishes change relationships, (3) diagnoses the problem, (4) creates intent to change in client, (5) translates intent into action, (6) stabilizes change and prevents discontinuances, and (7) achieves a terminal relationship (15:229). The change agent (Educator) must use his time and energy

ocus his communication upon opinion leaders in a social system to
ıg about changes in practice adoption.

Barraclough concluded that in the full analysis, the successful
.ication of any proposed forestry practice depends on the farm
:ator's ability and ambition. He also said that owners frequently
ied help to plan their farm business, and many of them also needed
ınical assistance to carry out any woodland management plan (2:81).

## III. METHODS

Each of the selected fifty woodland owners of Sequatchie County
e interviewed in 1967-72 using a schedule (see Appendix) consisting
questions designed to reveal characteristics, production practices
factors influencing practice adoption. This study deals with
se questons related to the factors influencing practice adoption
already dealt with in the two previous problems.

Main components in the present study will be between the
high adopters and 30 low adopters interviewed. Analysis will be
le based on simple numbers and percents. Data will be in tabular
:m.

# CHAPTER II

## FINDINGS

### I. ACREAGE IN DIFFERENT LAND CATEGORIES

The data in Table XXVII show that the average sized farm n Sequatchie County surveyed was 245.6 acres. The high adopters wned 336.1 acres compared to the low adopters 184.3 acres. All wners owned an average of 121 acres of woodland or 49 percent of heir total land. The high adopters had 174 acres or 52 percent of heir total land in woodland and the low adopters had 85.8 acres of 47 percent of their total land in woodland. Approximately 28 percent of the total land of all owners, both high and low adopters, was in cropland. The high and low adopters had about the same percent of land in pasture.

### II. THINGS LIKED ABOUT WOODLAND

The information in Table XXVIII indicates that 36 percent of all owners said that their woodlands were of benefit to them because they "provided marketable timber." A higher percent of high adopters (45 percent) gave this benefit and 30 percent of low adopters indicated benefit. Twelve percent of all owners said their woodlands furnished "building materials" as a benefit. Seventeen percent of low adopters and 5 percent of high adopters gave this answer. "General farm use" was listed by 28 percent of all owners as a benefit, 30 percent of them high adopters and 27 percent low adopters. This table also shows that

TABLE XXVII

AVERAGE ACREAGES AND AVERAGE PERCENTS OF LAND IN THE VARIOUS CATEGORIES OWNED BY ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| Land Category | All Owners (N=50) | | High Adopters (N=20) | | Low Adopters (N=30) | |
|---|---|---|---|---|---|---|
| | Average Acres | Average Percent | Average Acres | Average Percent | Average Acres | Average Percent |
| Cropland | 69.9 | 28 | 92 | 27 | 53.3 | 29 |
| Pasture (not woodland) | 54.7 | 22 | 73.0 | 21 | 42.6 | 24 |
| Total Woodland | 121.0 | 49 | 174.0 | 52 | 85.8 | 47 |
| Woodland grazed** | 24.3 | 10 | 25.2 | 7 | 23.7 | 13 |
| Woodland ungrazed*** | 36.2 | 15 | 148.9 | 44 | 60.4 | 33 |
| Other land | 3.7 | 0 | 4.3 | 0 | 3.2 | 0 |
| Total land | 245.6 | 100 | 336.1 | 100 | 184.3 | 100 |

**Percents are rounded to the nearest whole number.

***These are sub totals of total woodland and should not be added to total land.

TABLE XXVIII

BENEFITS WOODLAND PROVIDED OWNERS IN ORDER OF FREQUENCY MENTIONED BY PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS

| Benefit Provided | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| ırketable Timber | 36 | 45 | 30 |
| ɜnéral Farm Use | 28 | 30 | 27 |
| ıelter for Livestock | 14 | 10 | 16 |
| uilding Material | 12 | 5 | 17 |
| ther Benefits | 8 | 10 | 7 |
| ;oil Conservation | 2 | 0 | 3 |
| :otal | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

:lter for livestock was listed by 14 percent of all owners as a ıefit derived from their woodland. Ten percent of high adopters and percent of low adopters gave this benefit.

## III. THINGS DISLIKED ABOUT WOODLANDS

When owners were asked why woodlands were not as beneficial as ıey would like for them to be, 20 percent of all owners, high adopters ıd low adopters listed that "poor production" was the reason, as hown in Table XXIX. Another reason listed by 14 percent of all wners was growth of trees is "too slow." A slightly greater ıercent of high adopters (15 percent) gave this reason than was true for low adopters (13 percent). Eighteen percent of all owners gave the reason for "needing pasture land" while 15 percent of high adopters and 20 percent of low adopters listed it. Over one-fourth (26 percent) of all owners said their woods were of the "wrong species" compared to 25 percent of high adopters and 17 percent of low adopters, respectively. One-fifth of all owners did not indicate a dislike, 25 percent of high adopters and 17 percent of low adopters so indicating.

## IV. REASONS WHY WOODLAND OWNERS DID NOT ADOPT RECOMMENDED PRACTICES

With reference to Table XXX, the interviewer asked each of the small woodland owners to select three principal reasons why woodland owners generally do not adopt recommended forest management practices. They selected three reasons as the most important from twelve reasons established in the studies and agreed upon by a panel of authorities in

TABLE XXIX

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS IN ORDER OF FREQUENCY MENTIONED BY REASON FOR LIMITED BENEFIT FROM WOODLAND*

| Way in Which Benefit Was Not Provided | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Wrong species | 26 | 25 | 27 |
| Poor production | 20 | 20 | 20 |
| None mentioned | 20 | 25 | 17 |
| Need pasture land | 18 | 15 | 20 |
| Growth is too slow | 14 | 15 | 13 |
| Other crops yield more | 2 | 1 | 3 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

TABLE XXX

AVERAGE PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS STATING VARIOUS REASONS WHY WOODLAND OWNERS DO NOT ADOPT RECOMMENDED WOODLAND MANAGEMENT PRACTICES (IN THE TOP THREE)*

| Reasons Why Woodland Owners Do Not Adopt Recommended Practices | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| More rewarding activities claim time of owner | 76 | 85 | 70 |
| Cost of practices outweighs possible benefits | 58 | 65 | 54 |
| Such a long time to grow crops and get income | 44 | 45 | 43 |
| Don't have technical knowledge needed | 44 | 35 | 50 |
| Net benefit would result but too small | 42 | 45 | 40 |
| Physically unable to do supervison and management needed | 8 | 10 | 7 |
| Hope to clear woodland for pasture | 8 | 0 | 13 |
| Woodland too far away for close supervision | 8 | 5 | 10 |
| Expect to move away from farm | 4 | 0 | 7 |
| Want to keep "wild" as in nature | 4 | 10 | 0 |
| Expect to sell woodland | 2 | 0 | 3 |
| Uncertainty of ownership is undivided estate | 2 | 0 | 3 |

*Each owner gave three reasons why woodland owners did not adopt recommended practices; therefore, percents in the table total 300 percent instead of 100 percent.

the forestry field. The major reasons selected for not adopting recommended woodland management practices were as follows: "more rewarding activities claim time and money" with 85 percent of high adopters and 70 percent of low adopters selecting this reason first; "cost of practices outweighs possible benefits" was listed by 65 percent of high adopters and 54 percent of low adopters; "such a long time to grow a crop and get income" was selected by 45 percent of high adopters compared to 43 percent of low adopters; "don't have technical knowledge needed" was given by 35 percent of high adopters and 50 percent of the low adopters; "net benefit would result but too small" was given by 45 percent of high adopters and 40 percent of the low adopters; "hope to clear woodland for pasture" was given by 13 percent of low adopters and no high adopters; and "physically unable to do supervision and management" was given by 10 percent of high adopters and 7 percent of low adopters. Other reasons selected by woodland owners can be seen by referring to Table XXX.

## V. SEEKING PROFESSIONAL ADVICE

As seen in Table XXXI, when owners were asked to whom, if anyone, they went for advice on woodland management practices, 52 percent said that they had not sought any advice. Fewer high adopters (45 percent) than low adopters (57 percent) gave this answer. More high adopters (45 percent) were interested in obtaining professional advice than low adopters (17 percent). Sixteen percent of high adopters had sought the advice of two or more professionals, while only 7 percent of low adopters had checked with that many. Slightly more high

TABLE XXXI

PROFESSIONAL WORKERS AND OTHERS WHOSE ADVICE WAS SOUGHT ACCORDING TO PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS*

| erson From Whom Advice Sought | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| rofessional: | | | |
| lo advice sought | 52 | 45 | 57 |
| :ounty agent | 8 | 10 | 7 |
| Soil Conservationist | 4 | 5 | 3 |
| Two or More Professionals | 16 | 30 | 7 |
| Non-professional: | | | |
| Neighbors, friends and others | 20 | 10 | 26 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

adopters (10 percent) had asked the County Extension Agent for advice while 7 percent of low adopters had sought his help. Twenty percent of all owners had sought advice of neighbors, freinds, and other non-professionals.

## VI. INTERVIEWER'S OPINION AS TO WHETHER OWNER SHOULD HAVE PAID MORE ATTENTION TO WOODLAND MANAGEMENT

Table XXXII shows, in the interviewer's opinion that 62 percent of all owners should have paid "more attention" to the management of their woodlands. There was considerable difference between the high adopters (80 percent) and low adopters (50 percent). The interviewer was uncertain of about 34 percent of the situations of woodland owners interviewed. It was felt that about four percent of all owners and seven percent of low adopters should not have paid "more attention to their woodlands" than they were doing at the time of the study.

TABLE XXXII

PERCENTS OF ALL OWNERS, HIGH ADOPTERS AND LOW ADOPTERS BY INTERVIEWER'S OPINION THAT THEY SHOULD OR SHOULD NOT PAY MORE ATTENTION TO WOODLAND MANAGEMENT*

| Amount of Attention Respondents Should Pay to Woodland Management | All Owners (N=50) | High Adopters (N=20) | Low Adopters (N=30) |
|---|---|---|---|
| | ----------Percentage---------- | | |
| Should pay more attention | 62 | 80 | 50 |
| Uncertain | 34 | 20 | 43 |
| Should not pay more attention | 4 | 0 | 7 |
| Total | 100 | 100 | 100 |

*Percents are rounded to the nearest whole number.

# CHAPTER III

## SUMMARY

In 1967-1972, a selected sample of 50 Sequatchie County small woodland owners were asked for certain information in a personal interview to find what factors influenced them to adopt recommended woodland management practices. They also were asked why woodland owners in general, did not carry out recommended forest management practices. The interviewer asked the owners why they liked their woodlands and why woodlands were not as valuable as they thought they should be.

The woodland owners were questioned about who they asked for advice on woodland management practices. The interviewer also gave his opinion as to whether each owner should or should not pay more attention to the management of his woodland.

Other studies reviewed disclosed the following information concerning the adoption of recommended forestry practices of small woodland owners in general.

1. The small woodland owners felt that their fellow owners did not follow recommended practices because more rewarding activities claimed their time and money, it took too long to grow trees for needed income, some felt that they did not have technical knowledge necessary to overcome the widespread indifference of woodland owners to recommended forestry practices.

2. Foresters felt that the public must help small woodland owners see the value of woodland management practices and encourage their adoption.

3. The low income of small woodland owners is a major obstacle to good forestry practices. The low income owner needs to have knowledge of recommended woodland practices that he can carry out even with his limited resources.

4. There is a need for additional efforts by all agencies and businesses concerned through the use of practical demonstrations that would help small woodland owners obtain necessary technical knowledge on recommended woodland management practices.

5. Most owners become interested in recommended woodland management practices through personal contacts with professionals who know forestry. Owners can be reached through forest product industry personnel, such as timber and pulpwood buyers, loggers, and small sawmill operators.

6. The educator hopes to help small woodland owners to adopt recommended management practices needed to know how to integrate those practices into a well-organized, planned, and properly-executed program using the many resources available, such as established agricultural agencies, county planning committees, and private groups.

## I. REVIEW OF FINDINGS

Some of the important factors found in this study to influence the management practices adoption of Sequatchie County small woodland owners are listed below.

1. The average size farm of all owners was 245.6 acres. The high adopters owned an average of 336.1 acres per farm and low adopters 184.3 acres per farm. High adopters had more average woodland acres (174) than low adopters (85.8).

2. Thirty-six percent of all owners said that they liked their woodland because it furnished marketable timber. A higher percent of high adopters (45 percent) gave this reason than did the low adopters (30 percent).

3. Most of woodland owners felt some benefit from their woodland.

4. Eighty-five percent of all owners selected "more rewarding activities claim time and money" as the main reason why small woodland owners generally do not adopt recommended forestry practices. Another reason mentioned by all owners (58 percent) was "cost of practices outweighs possible benefits."

5. Fifty-two percent of all owners had not sought the advice of any professional on forestry management. Sixteen percent of high adopters had sought the advice of two or more professionals. Ten percent of high adopters compared to 7 percent of low adopters had sought help from County Extension Agent.

6. It was the interviewer's opinion that 62 percent of all owners should have been paying more attention to the management of their woodland.

## II. IMPLICATIONS

The Agricultural Extension forestry program for Sequatchie County must be improved. Information from this study could serve as a guide

for planning and implementing an educational program on the use of recommended woodland management practices. Implications would include among others those listed below.

1. The average woodland owner interviewed liked his woodland because it produced marketable timber for income. His greatest dislike was "poor" production. They also were interested in getting assistance regarding cost of production and marketing of timber. Therefore, it can be assumed that the majority may be interested in educational programs designed to improve the production and marketing of their timber.

2. A special program should be developed to give the woodland owners the technical knowledge needed so they can manage their woodlands in such a way as to get optimum income.

3. Educational programs should be developed for separate high adopter and low adopter classes of farmers where possible.

4. An effort should be made to involve the forestry high adopters as demonstrators.

5. Programs need to be developed to help woodland owners to be aware of the professional advice available to them.

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# APPENDIX

A or B
(Circle one)

THE AGRICULTURAL EXTENSION SERVICE, UNIVERSITY OF TENNESSEE
Knoxville, Tennessee

TENNESSEE WOODLAND MANAGEMENT SURVEY

INTRODUCTION: I am helping with a survey that is being made by the University of Tennessee. The purpose is to obtain information to use in planning programs helpful to woodland owners. The answers you give will be added to those given by other people who are being interviewed in this county and other parts of the state to get a complete picture of the forestry situation. Could I have a little of your time to go over these questions?

1. About how many acres do you have in your farm(s)? Cropland? Improved pasture (not woodland)? Total woodland? Woodland grazed? Woodland ungrazed? Other land?

   a. Total (b + c + d + e) land _____
   b. Cropland _____
   c. Improved pasture _____
   d. Total woodland _____
      (1) Grazed _____
      (2) Ungrazed _____
   e. Other land _____

   (Check to be sure items b, c, d and e add up to the TOTAL FARM ACREAGE in a.)

TO THE INTERVIEWER: If the respondent has fewer than five acres of total woodland, terminate the interview. If five acres or more of total woodland, check the appropriate category in item #2 below and continue the interview.

2. About how many acres of total woodland do you have?

   a. 5-9 _____ acres
   b. 10-19 _____
   c. 20-29 _____
   d. 30-49 _____
   e. 50-99 _____
   f. 100-249 _____
   g. 250-499 _____
   h. 500-2500 _____

3. As you see it, is your woodland of any benefit to you?
   a. Yes _____. b. Some _____ c. No _____

TO THE INTERVIEWER: If NO to question #3 above, skip to question #6. If SOME, ask questions 4 and 5. If YES, ask question #4. YES and SOME answers delete #6.

. In what way <u>does</u> it benefit you? _____

_____

5. In what way <u>doesn't</u> it benefit you as much as you would like? _____

_____

6. Why do you think so? _____

_____

7. We have listed on these cards some reasons why woodland owners do not adopt recommended woodland management practices. (Hand respondent the set of 12 cards.) Now here is what we would like you to do:

   a. Please look through all the cards; read each one; then pick out the four (4) cards that show why you believe woodland owners do not use better woodland management practices. After you have selected the four (4) cards, please hand me the rest.

   b. Now these four (4) reasons are not of the same importance; so please go through them and decide which one is probably of <u>most importance</u>. Please give me the number on the back of the card. Also, do this with each of the remaining three cards.

| Rank | 1 | 2 | 3 | 4 | |
|---|---|---|---|---|---|
| Card No. | | | | | |

Are there any other reasons why you believe woodland owners do not adopt recommended woodland management practices?

_____

_____

TO THE INTERVIEWER: The purpose of this next question is to find out if the respondent --

(1) is aware of certain recommended practices;

(2) is interested in using them;

(3) has tried them;

(4) is still using them, or will use them when the need arises;

(5) and his reasons for never trying the practices, or for not using them after trying them.

INTERVIEWER: Hand each card to respondent separately after saying: "I have here a set of cards. On each card is a woodland management practice. Would you read this card and tell whether you have tried that practice." (Check "Yes" or "No" in the "Has tried" column below.)

In his reply the respondent may also answer the other four points. If not, interviewer will ask appropriate questions to obtain the answers. Check in appropriate columns below.

| 8. Woodland practices | Has tried | | Is using or Will Use | | Read or Heard of | | "Interested" in | |
|---|---|---|---|---|---|---|---|---|
| | Yes (a) | No (b) | Yes (c) | No (d) | Yes (e) | No (f) | Yes (g) | No (h) |
| (1) Making an inventory of the salable timber in your woodland and its value | | | | | | | | |
| i. Reasons | | | | | | | | |
| (2) Having a plan for growing and selling timber and/or other forest products | | | | | | | | |
| i. Reasons | | | | | | | | |
| (3) Planting trees to reforest woodland | | | | | | | | |
| i. Reasons | | | | | | | | |
| (4) Preparing ground for natural seeding or planting | | | | | | | | |
| i. Reasons | | | | | | | | |
| (5) Establishing woodland on open land suited to trees | | | | | | | | |
| i. Reasons | | | | | | | | |

| | Has tried | | Is using or Will Use | | Read or Heard of | | Interested in | |
|---|---|---|---|---|---|---|---|---|
| | Yes (a) | No (b) | Yes (c) | No (d) | Yes (e) | No (f) | Yes (g) | No (h) |
| (6) Thinning the woods | | | | | | | | |
| i. Reasons | | | | | | | | |
| (7) Killing undesirable trees | | | | | | | | |
| i. Reasons | | | | | | | | |
| (8) Pruning stand trees | | | | | | | | |
| i. Reasons | | | | | | | | |
| (9) Marking trees for selective cutting | | | | | | | | |
| i. Reasons | | | | | | | | |
| (10) Establishing a diameter limit for trees to be cut | | | | | | | | |
| i. Reasons | | | | | | | | |
| (11) Constructing fire lanes | | | | | | | | |
| i. Reasons | | | | | | | | |
| (12) Control grazing (fencing out livestock) | | | | | | | | |
| i. Reasons | | | | | | | | |
| (13) Controlling insects | | | | | | | | |
| i. Reasons | | | | | | | | |

| | Has tried | | Is using or Will Use | | Read or Heard of | | Interested in | |
|---|---|---|---|---|---|---|---|---|
| | Yes (a) | No (b) | Yes (c) | No (d) | Yes (e) | No (f) | Yes (g) | No (h) |
| (14) Controlling disease outbreaks | | | | | | | | |
| i. Reasons _____ | | | | | | | | |
| (15) Shopping around for best price for selling trees | | | | | | | | |
| i. Reasons _____ | | | | | | | | |
| (16) Using a written contract in selling trees | | | | | | | | |
| i. Reasons _____ | | | | | | | | |
| (17) Starting to harvest trees within a year after marking | | | | | | | | |
| i. Reasons _____ | | | | | | | | |

ii. Number of months after marking when harvest of trees started

_____
(Months)

(To be completed for those who have tried this practice.)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (18) Selling trees to obtain optimum (best) returns | | | | | | | | |
| i. Reasons _____ | | | | | | | | |
| (19) Participating in ASC or other government forestry programs | | | | | | | | |
| i. Reasons _____ | | | | | | | | |

| | Has tried | | Is using or Will Use | | Read or Heard of | | Interested in | |
|---|---|---|---|---|---|---|---|---|
| | Yes (a) | No (b) | Yes (c) | No (d) | Yes (e) | No (f) | Yes (g) | No (h) |
| (20) Participating in non-government forestry programs (local forestry development associations, industrial groups, civic organizations, banks, and other business groups, individuals and others) | | | | | | | | |
| i. Reasons _____ | | | | | | | | |
| (21) Getting the advice of professional foresters | | | | | | | | |
| i. Reasons _____ | | | | | | | | |

9. Are you acquainted with the ASC program to share the cost of woods improvement and tree planting?

   a. Yes _____ b. No _____

10. Under the ASC program you can receive payment for certain woodland practices, if you are qualified, and by following certain requirements. Which of the three following practices have you used under the ASC program, read or heard about before today.

TO THE INTERVIEWER: Read each practice in the list below, and check whether or not respondent has used the practice under the ASC program and received payment for using it. Also, check whether or not respondent has read or heard about the practice before today.

| | USED PRACTICE UNDER ASC PROGRAM | | READ OR HEARD ABOUT BEFORE TODAY | |
|---|---|---|---|---|
| | Yes (1) | No (2) | Yes (3) | No (4) |
| a. Thinning out trees (part of B-10 practice) | | | | |
| b. Killing undesirable trees (part of B-10 practice) | | | | |
| c. Planting seedling trees (A-7 practice) | | | | |

11. During the past year, have you talked with anyone about the management of your woodland?

a. Yes _____ b. No _____

TO THE INTERVIEWER: If NO, skip to question #13. If YES, ask question #12 first.

12. With whom have you talked? (Check one or more of the following. If respondent gives names, write them at the side and check list later.)

a. Neighbor or friend _____
b. County agent _____
c. Extension forester _____
d. Other technical foresters:
(1) service forester _____
(2) consulting forester _____
(3) industrial forester _____
e. Sawmill operator _____
f. Timber buyer _____
g. Soil conservationist _____
h. ASC Committeeman _____
i. Vo-Ag teacher _____
j. National forest ranger _____
k. Banker _____
l. Other (specify) _____

13. Major occupation of respondent.

a. Full-time farmer _____
b. Part-time farmer _____
c. Business (specify) _____
d. Professional (specify) _____
e. Wage earner _____
f. Housewife or widow _____
g. Retired _____
h. Other (specify) _____

14. What is your major farm enterprise?

a. Forestry _____
b. Dairy _____
c. Beef _____
d. Hogs _____
e. Poultry _____
f. Other livestock _____
g. Grains _____
h. Fruits _____
i. Vegetables _____
j. Potatoes _____
k. Cotton _____
l. General farm _____
m. Tobacco _____
n. Other (speicfy) _____
0. Nonfarmer _____

15. Would you please complete this sentence? (Hand respondent the card)

"The thing I <u>like</u> most about my woodland is _____

_____

TO THE INTERVIEWER: If respondent mentions more than one thing, write down all of them, and ask him "which is most important?" Then underscore it.

16. Would you please complete this sentence? (Hand respondent the card)

"The thing I <u>dislike</u> most about my woodland is _____

_____

TO THE INTERVIEWER: If respondent mentions more than one thing, write down all of them, and ask him "Which do you <u>dislike</u> most?" Then underscore it.

17. Distance--residence to woodland (check one or more appropriate categories, but only once per category)

a. Live on place _____ c. 10-29 miles _____

b. Less than 10 miles _____ d. 30-99 miles _____

e. 100 miles or more _____

18. What was the highest grade level that you completed? (circle one)

0 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 Bachelor's
None Grade School H. S. Col. Undergrad. Degree

Master's Degree Doctor's Degree

19. Age of respondent

a. Under 30 _____ c. 40-49 _____

b. 30-39 _____ d. 50-59 _____

e. 60 or more _____

20. What plans do you have for the future management of your woodland? (including what use will be made of timber and how you plan to manage

your woodland so that there may be the kinds and amounts of timber you may want to have)

_____

_____

21. (If respondent says he has no plans in question #20 above, ask why.)

_____

STATEMENT FOR INTERVIEWER: Now, Mr. _____, the next three questions are about whether you would be interested in any arrangements for having someone help manage your woodland for you under terms satisfactory to you.

22. Would you be interested in making private arrangements with a forester or company to help manage your woodlands under good forestry practices for a contracted period of years under terms satisfactory to you?

a. Not interested ____ b. Might be interested ___ c. Interested __

d. If not interested, ask why _____

23. Would you be interested in joining other owners in this area in an association which would hire a private forester to help manage your woodland under terms satisfactory to you?

a. Not interested ___; b. Might be interested ___; c. Interested ___;

d. If not interested, ask why _____

24. Would you be interested in joining other owners in this area in securing the services of a forester in some other way to help manage your woodland under terms satisfactory to you?

a. Not interested ___; b. Might be interested ___; c. Interested ___;

d. If interested in securing the services of a forester in some other way, state how _____

25. Which of these three would you prefer?

a. Private arrangements with a forester or company. (Question #22)

_____

b. Joining an association hiring a private forester. (Question #23) _____

c. Securing the services of a forester in some other way. (Questions #24) _____

d. None of them _____

26. Do you need market information on prices of timber and other forest products similar to that available for other farm crops and livestock?

a. Very interested _____ c. Indifferent _____

b. Somewhat interested _____ d. Not interested _____

27. Where can you get market information on prices of timber and other forest products?

a. _____

b. _____

c. Don't know _____

28. Do you need information on how much it costs per acre and how long it takes to produce timber to help you in your future woodland planning?

a. Very interested _____ c. Indifferent _____

b. Somewhat interested _____ d. Not interested _____

29. Where can you get information about how much it costs per acre and how long it takes to produce timber?

a. _____

b. _____

c. Don't know _____

30. Have you sold any timber from your woodland in the last five years?

a. Yes _____ b. No _____

TO THE INTERVIEWER: If the answer to question #30 above was NO, skip to question #35. If the answer to question #30 was YES, ask questions 31, 32, 33 and 34.

31. What year was the most recent one when you sold timber? 19__ (Year)

32. About how much did you get for your timber that year?

a. Less than $250 _____ c. 500-999 _____

b. 250-499 _____ d. 1000 and over _____

33. About how much timber did you sell that year? _____ (Circle one or more: acres; boardfeet, cord and other)

34. How did you arrive at the price per unit you got for your timber that year?

_____

35. About how often has timber been sold from your woodland in past years?

a. At intervals of less than 5 years _____

b. At 5 to 10 year intervals _____

c. At 10 to 20 year intervals _____

d. At intervals of more than 20 years ____

36. (OPTIONAL) Approximately what was your total (gross) family income last year? (Hand card to respondent and ask him to select a category).

a. 0-1999 _____
b. 2,000-3,999 _____
c. 4,000-5,999 _____
d. 6,000-7,999 _____
e. 8,000-9,999 _____
f. 10,000-11,999 _____
g. 12,000-13,999 _____
h. 14,000-15,999 _____
i. 16,000-17,999 _____
j. 18,000-19,999 _____
k. 20,000-21,999 _____
l. 22,000-23,999 _____
m. 24,000-25,999 _____
n. 26,000-29,999 _____
o. 30,000-49,999 _____
p. 50,000-99,999 _____

37. How would you rate the present condition and value of your woodland?

a. Excellent _____ c. Fair _____
b. Good _____ d. Poor _____

Name of respondent _____

Address _____ County _____ Number _____

Name of interviewer _____

Date _____

NAME OF RESPONDENT _____

NUMBER _____

QUESTIONS FOR THE INTERVIEWER TO ANSWER:

38. All people do not adopt new practices at the same time. About where would you place the respondent with respect to adopting new recommended woodland practices?

a. Among the first few _____ c. Sooner than the average ___

b. Soon after the first few ___ d. A little later than most owners _____

e. Among the last few _____

39. Is the respondent

a. Man _____ b. Woman _____

40. Interest of respondent in improving his woodland (in interviewer's judgment)

a. Very interested _____ c. Indifferent _____

b. Somewhat interested _____ d. Not interested _____

41. Respondent's attitude toward survey (in interviewer's judgement)

a. Friendly _____ c. Indifferent _____

b. Somewhat friendly _____ d. Antagonistic _____

42. Should the respondent pay more attention to the management of his woodland in light of his situation?

a. Yes _____ b. No _____ c. Uncertain _____

43. How well do you know the respondent?

a. Very well _____ c. Not very well _____

b. Fairly well _____ d. Not at all _____

44. How familiar are you with the respondent's woodland situation?

a. Very familiar _____ c. Not very familiar _____

b. Fairly familiar _____ d. Not familiar _____

45. If very or fairly familiar with their woodland situation, how would you rate the present condition and value of his woodland?

a. Excellent _____ c. Fair _____

b. Good _____ d. Poor _____

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VITA

Mack E. Steele was born in Putnam County, Tennessee, on April 2, 1930. He is the son of Mr. and Mrs. John A. Steele. He attended public schools in that county and graduated from Baxter Seminary High School. He attended Tennessee Polytechnic Institute completing the requirements for a Bachelor of Science degree in Agricultural Education in August of 1955. Following graduation he taught high school science at Clinton High School, Clinton, Tennessee, prior to going into military service. He served as a Second Lieutenant at Fort Monmouth, New Jersey and Fort Hauchuca, Arizona in the Signal Corps. He held the rank of Captain when discharged from the Army.

Following military service he has worked with the University of Tennessee Agricultural Extension Service as Assistant County Agent in Morgan County, Tennessee. He is presently Extension Leader in Sequatchie County, Tennessee.

He is married to the former Bonita Grace Smith of Morgan County, Tennessee, and they have two sons, Mack Jr. and Jeremy Jon, and one daughter, Mary Charlotte. He is Baptist and serves as a Deacon in the First Baptist Church, Dunlap, Tennessee. He is Webelo Leader for Pack 177 Cub Scouts.